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Editorial coordinator: Federica Evangelista

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The book series aims to attract the cutting edge research at international level and to make it available for academics and practitioners.

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The criticalities and the opportunities of our times are faced according to the cutting edge research and practice in social science. This multidisciplinary perspective includes: management, economics, engineering and sociology.

Being aware of these interactions provides a better understanding of the principles that can help to solve some of today's most pressing social and economic issues.

In particular the Symposium 2015 focuses on the epistemological, theoretical, methodological, technical and practical contributions that can represent advancements in the theory and practice of Business Management to address the present and future challenges in the global economic and social scenarios.

While focusing on the Systemic perspective the Symposium is also open to all the scientific approaches in order to foster constructive debates and confrontations to create new perspective of research and practice in the field of business.

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SYSTEMS PRACTICE FOR MANAGING COMPLEXITY

Membership of Cluster – One of the Ways to Business Management Improvement

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In this paper we will try to discuss the cluster is a system and explain how it will support the business management improvement as a system. Our opinions will be based upon the conclusions of scientists and research organizations.

The word “system” derives from the Greek “synhistanai” which means “to place together”. The scientists write about the system that “A system is a set of interconnected elements which form a whole and show properties which are properties of the whole rather than of the individual elements. This definition is valid for a cell, an organism, a society, or a galaxy (Laszlo, 2011). In its broadest conception, a “system” may be described as a complex of interacting components together with the relationships among them that permit the identification of a boundary-maintaining entity or process (Laszlo, et al, 1998).

The claim that a system is more than the sum of its parts is very well known, and indeed was already made by Aristotle, and it encapsulates a very interesting point, namely that a system has certain qualities and properties that we cannot find in the parts by themselves. These qualities come from the organization of the system (Morin, 2014).

We wish to mention that Complexity comes from the Latin plexus which means interwoven. This implies that components are interdependent. Thus, the key in complex systems research is that there is a strong focus on interactions (Gershensonl, et al, 2013).

The scientists’ opinion on Cluster is as follows: “An industrial cluster is an agglomeration of companies, suppliers, service providers, and associated institutions in a particular field. Often included are financial providers, educational institutions, and various levels of government” (WB, 2009). Within clusters, these entities can operate more efficiently and can share common technologies, infrastructure, pools of knowledge, and demand. The presence of these clusters can be important drivers of regional competitiveness and innovation (Porter, 2013).

The concept of clusters is very similar to the concept of “open innovation” which is nowadays broadly accepted. Similarities also exist with the concept of “triple helix” that emphasizes that innovation depends on the interaction between strong academic research (universities), dynamic entrepreneurship and the availability of risk capital (private sector) as well as on a supportive policy framework (public administrations) (WD, b, 2008).

Based upon the above mentioned we will conclude that:

1. Cluster is a system as ineffective activity of one of its major players (“firms, financial actors, public actors, universities, organizations for collaboration and media” (Solvell, 2009)) will cause damage not only him but to all of them and vice-versa, the success of one will support all of them. Interaction is too high.

2. The system is characterized by synergy, the same may be observed on Cluster and its component firms. “Cluster firms are more innovative than non-cluster firms. 78% of the innovative companies working in a cluster introduced new or significantly improved products. This and other results suggest that innovation is indeed spurred by clusters” (WD, a, 2008).
3. Cluster creates an unified system of interests, namely: a) the interest of science is research, creation of new knowledge and offer of new products to the market; b) the interest of education is to master and transfer new knowledge; c) the interest of businesses is to offer new products to the market and make a profit; d) the interest of State is local economic development and the raise of welfare. Such convergence of interests is an indisputable guarantee of success.
4. Cluster is not a closed system, so it brings out the best potential of the region over time. 38% of all European employees work in enterprises that are part of a cluster. In some regions, this share goes up to over 50% while in others it is only about 25% (WD,c, 2008).
5. Cluster system is characterized by dynamics, since it forms sub-clusters. As a result, it’s renewable and meets the increased and new requirements. Over time, the clusters can change their profile and specialization, which has happened in several large clusters.
6. Cluster is an extendable system. On one side, it improves the separate firm's management and economic indicators and on the other, with this process it encourages to strengthen the chain of firms and business environment improvement in whole. This is confirmed by the World Economic Forum's Global Competitiveness Report. In these reports the clusters are considered as part of Microeconomic Competitiveness and the state of cluster development, is as one of the indicators of “Business Sophistication” pillar. Other indicators of this pillar also focus on cluster, these are: Local supplier quantity, Local supplier quality, Nature of competitive advantage, Value chain breadth, Control of international distribution, Production process sophistication, Extent of marketing, Willingness to delegate authority (GCR, 2008-09).

So we can conclude that Cluster is a system supporting the business management improvement.

Keywords: Cluster System; Business management improvement, Complexity management

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The purpose of change is problem solving

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Statement of the problem: The question of ‘change’ has occupied the minds of investigators since ancient times with Heraclitus saying that ‘*you cannot step into the same river twice*’ and the question still has not been resolved satisfactorily. To begin we say that : ‘*Parts of the world may be seen as a conglomeration of related or interacting things and ideas in static or dynamic state respectively any chosen part of which may be regarded by a living in particular human being as a candidate for change. Thus, a changing object concrete (chair), abstract((transparency (of the window)), (sadness (of the child))) or symbolic (a word) can be selected with features any of which can be perceived to fail to fit an expectation and as such may be regarded to be in a problematic initial or current state.*’

Recognition of the possibility of unlimited change is the basis of innovation, invention of devices and that of evolution of intellectual movements like paradigm changes in art, science, politics and so on.

More concretely, change or change of state leading possibly to a resolution or final state compatible with the problematic, initial state, can be expressed in terms of quality or quantity or structure (seen as property). Accordingly, when we talk about change we talk about ‘dynamics’ of a scenario. Perhaps the most fundamental change from initial to final state is performed by technical and living things as demanded by the 2nd law of thermodynamics and necessitated by the very survival itself.

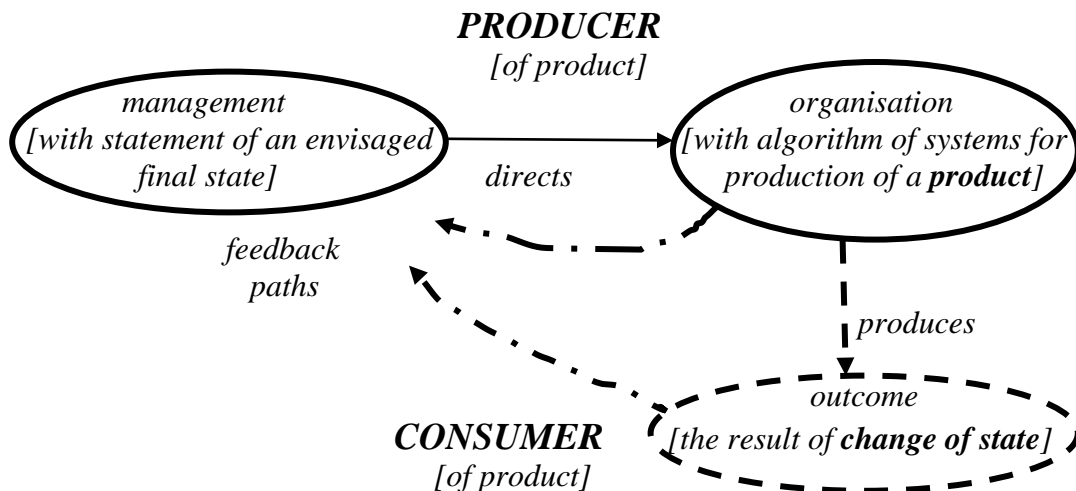
A change of state is caused : No change of state expressed as a property can take place by itself. Action for the execution of the ‘cause’ is required for the accomplishment of a change arising either by ‘chance’ or in accordance with ‘purpose’ and is subject to will and decisions in case of beings equipped with the appropriate organs [with due respect to Newton’s 2nd law].

Accomplishment of change needs at least two ‘objects’ : The changing or ‘affected object’ and the ‘agent’ or initiating object for carrying out the action. This dichotomy of cause and effect is, thus, limitless, complex and may be called system. For example, when applied to a scenario with living components, in particular human activity, as a ‘purposive system’ it can be represented diagrammatically in Fig.1. showing the generalised product [physical like a chair or motor car, informative like a book or a message or emotive like consolation or patriotism] which is the sole means of change of state. When ‘feedback paths’ are removed a ‘system operating by chance’ emerges.

Fig.1. shows the scheme of change and the means of its accomplishment. It is a problem solving scheme : When the producer is given and we seek the consumer, we have a problem of analysis [by means of linguistic modelling or mathematics] , When the consumer is given and we seek the producer, we have a problem of design [by means of design methodology]. These problem arise in technology and in all walks of life, in particular in business, management, politics, education and so on.

Working out details of the scheme is a problem itself and is subject to debate and to a great deal of uncertainty but basically details of the scheme consists of ‘agents’ or initiating and affected ‘objects’ interacting in terms of ‘energy or information flows’ interfaced by amplifiers (electronic, social, biological...). The difficulties involved vary in case of ‘hard’ to ‘soft’ or ‘wicked’ problems. The details also vary from discipline to discipline : In technical control systems ‘management’ is realised by hardware with one or more ‘feedback paths’ the presence of which is the general feature of purposive or cybernetic scenarios. In scenarios with living, in particular human components with will, emotions, prejudices, ambitions, identification and agreement can be difficult.

Figure 1- The general producer-consumer scheme



The question of ‘system’ or ‘dynamics’ has not been satisfactorily resolved to the present day either by ‘conventional science or engineering which is a problem. The intention of the presentation is to outline a suggestion for a resolution offered for debate. This suggestion is intended to incorporate general statements of regularly occurring features within the empirical ‘system phenomenon’ followed by the symbolism of ‘processed natural language’ for coping with qualitative properties carrying mathematics coping with quantitative features. The aim is to lead to models which can be expressed in operational terms.

Brief Historical background of the “systemic view”: *Before and since von Bertalanffy the ‘systemic or systems view’ of parts of the world by and large has evolved along speculative and diverse lines without appreciable attention to assessing the truth value of its pronouncements expressed in rather vague, abstract statements. The ‘systemic view’ is supplemented by modelling techniques with vague, undefined notations [viable system model]. As such they cannot be ‘read’ and are without basic theoretical support. Recently computing packages have come into use. However, speculative thinking is useful and unavoidable when generating new ideas, it is the basis of any intellectual advance, forming views and policy construction but when it comes to execution of these ideas thinking about the empirical world as opposed to the world of ideas, needs to take over.*

Subsequently the 'systems view' has become fragmented into : Control systems, information systems, cybernetics and so on and operating through : Methodologies with design flavour with little appreciation of the notion of problem solving without underlying principles, Diverse techniques like 'influence diagrams' and Philosophical trends such as the idea of intervention or consulting, critical thinking, emancipation etc. It has given rise to a large number of diverse publications, conferences and teaching courses at university but not at school level. The 'systems view' has not gained appreciable acceptance in society and education compared with 'conventional science of physics'.

Problematic issues: Based on historical consideration of the 'systemic view', the main problematic issues are seen as :

1. 'Systemic view' is out of context of 'human intellectual endeavour' and by and large is not based on existing knowledge [linguistics, logic, mathematics, network theory etc],
2. Lack of a theory of structure considered to be fundamental to lead to a 'systems discipline',
3. 'Systemic view' is difficult to teach due to its speculative, vague ideas, models and techniques such as influence diagrams characterised by lack of firm knowledge to be taught,
4. Its inability to integrate 'conventional science, engineering, systems engineering and problem solving/design [in a sense beyond the immediate technical connotation covering living, human activities] into a comprehensive scheme,
5. 'Systemic view' has been unable to penetrate into thinking of people i.e. society to a significant degree as 'conventional science' has,
6. Anomaly between the generality of the 'structural view' and the variety of approaches, methods and techniques to construct models of aspects of this view.
7. The majority of 'models' used in current 'systemic view' are static like scale models of ships [viable systems model...] i.e. they cannot be manipulated as mathematical models can be. This means they cannot reason and cannot be used for constructing symbolisms of 'predicting structures'.

The intention: Following the method of the highly successful and influential 'conventional science' with its precise mathematical models, current work is intended to develop a 'systems science' through a paradigm change involving 'linguistic modelling' supplemented by mathematics. This modelling is capable of handling human activity scenarios with low repeatability and components with qualitative properties exhibiting will, ambition, emotions, caprices and so on. It acts as an integral part of problem solving and design. Engineering systems involve the mathematics of differential equations supplemented by linguistic modelling .

The notion of 'systems' relates to an empirical phenomenon and as such requires empirical investigation for teasing out its general principles and the symbolism for creating models capable of being exposed to at least thought experiments. The result is 'systems science' which essentially is a view of 'structures of qualified objects in qualified relations or that of qualified objects with qualified interactions'. These can cause novel or emergent properties or outcomes or changes of state respectively as indicated in Fig.1. The exercise of this view may be called the 'systems approach'.

1. The purely mathematical line of investigation is unsuitable because it is restricted to the quantifiable aspects of things. Thus, it leaves out the majority of topics of interest such as human activity scenarios driven by qualitative aspects and affected by emotive factors.

2. The speculative line is also unsuitable because the 'systems phenomenon' is empirical and speculation although necessary, eventually needs to be translated into 'concrete propositions' capable of being exposed at least to thought experiments.

Remedial action towards alleviating the problematic issues, provided they are accepted, is seen to consist of empirical research into the empirical systems phenomenon leading to formulating 'general principles' followed by the symbolism of 'processed natural language'. The scheme depicted in Fig.1. is general through experience in the domain of living things and the technical sphere, the aim is to attempt its translation into operational models derived from underlying principles pervading the domain and sphere expressed in suitable symbolism. This may act as an integrating rather than dividing agent.

Keywords: Change, Management, Problem solving

Ranking of Firms in CEE and Power Laws

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We live in a world of shrinking boundaries and shifting economic fortunes (Ryder, 2005). Disruptive technologies, rapid structural changes and economic turbulence are impacting the global economy by accelerating the rise of complexity. Complexity turns out to be a major power business must consider when develop and execute business strategies. It affects businesses both by delivering challenges and opening new opportunities which means that complexity changes radically the way business is managed. More or less, complexity becomes the new norm for the business which requires new perspective. Nonlinearity and complexity are common features of a large number of systems studied in modern science (Bertuglia, Vaio, 2005). They are often investigated by nonlinear dynamics methods (Tsallis, 2012; Strogatz, 2001).

According to Gibrat's law (Gabaix, 2009) (“the law of proportional effect”) the distribution of the growth rate of a unit (e.g., a firm or a city) is independent of its size. Hence, regardless of the particular forces driving the growth of firms, as soon as firms satisfy Gibrat's law with very small frictions, their value distribution converges to Zipf's law. If we hypothesize that firms' size is distributed according to the Gibrat's Law, then firms' size growth can be treated as a random process and growth rates will be independent of the size of the firm. Such distributions are skew to the right, meaning that much of the probability mass lies to the right of the modal value (Axtell, 2001). This implies that the modal brand value is smaller than the median size, which, in turn, is smaller than the mean.

The objectives of the paper are as follows. Firstly, to analyze the ranking of firms in CEE based on different criteria and to examine if distribution satisfies the rank-size rule of Zipf. Secondly, to identify the classes within the distribution of the analysed firms. In order to achieve the research objectives three research questions are defined:

- (1) The distribution of top 500 firms (by revenues) in CEE satisfies the rank-size rule of Zipf.
- (2) The distribution of top 300 ICAP firms (by EBITDA) in Bulgaria satisfies the rank-size rule of Zipf.
- (3) To organize firms in several well defined classes by applying an indirect ‘primacy measure’ based on the Sheppard hierarchy index.

The empirical analysis is based on data drawn from COFACE and ICAP data set. The performance of rank-size rule and power law was checked against these data for the period from 2011 to 2013. The empirical analysis is employed to show that the rank-size rule could be implemented to the distribution of firms' size. The analysis is based on considerations of complex systems, i.e. finding whether power or other simple law fits are appropriate to describe some internal dynamics. It is observed that the ranking is specifically organized: a major class comprising a few firms emerges every year. Other classes, which apparently have regular sizes,

occur subsequently. Thus, the notion of the Sheppard primacy index is envisaged to describe the findings.

Keywords: ranking, firm size, primacy index, dissipative structures, self-organization.

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Role of the informational technologies in the improvement of the state sector (on the example of the customs of Georgia)

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The goal of the study is to analyze the role of the informational technologies in the improvement of the state sector on the example of the customs system of Georgia.

One of the strategic branches for Georgia is the customs system, and the reform in this field was one of the most urgent topics within the scope of cooperation between Georgia-EU Union and US Agency of International Development (USAID). Since 2004, the customs system of Georgia has been subject to an overriding wave of reforms full of contradictions. As a result, the corruptive service, the lengthy procedure was converted into a swift transparent e-service and various non-compatible databases were substituted by unified automated systems (Asycuda World, PIRS, etc.). (Seturidze et al, 2012).

The article analyzes the process of substituting the corruptive and subjective management of the customs system by a modern, impartial, efficient, transparent and fair public management.

The article notes that the improvement of the management in the state sector depends on various factors, with the introduction and operation of the single modern informational technologies as one of the most important of them.

Prior to the reform, the Customs and Tax Departments and financial police had different databases almost without any synchronization. The data put of the database were treated by the employees of the tax system manually, and the consolidated reports were submitted to the higher tiers as hand-written documents. The information traveling upwards through the hierarchy got distorted, and the management often received incorrect data.

The article substantiates that without modern informational technologies it is impossible to avoid complexity and errors in the management of the customs system.

Simultaneously with the ongoing reform in the customs system, thorough single modern information systems were introduced in the country, such as ASYCUDA, an automated data management system. By using ASYCUDA, a risk management system was put to operation and a maximally efficient and flexible mechanism of it was established. At present, the risk control systems for food safety, sanitary, phyto-sanitary, quarantine, veterinary sanitary, etc. are in operation.

PIRS: The Personal Identification and Registration System is used in the portals of Georgia's economic border where the economic border of the country is crossed. The system reflects information about passengers crossing the border and vehicles that cross the border empty. The

system involves scanned travel documents, photos, passport and other data having a high-capacity control mechanism. (Seturidze, 2011)

Government Finance Management Information System: Due to the system operating at all levels of the Ministry, all the officers working for the Finance Ministry of Georgia have access to the certain modules of the common base according to their functions and responsibilities. A module for tax violations of resident and non-resident persons and a module for simplified declaration registration of packages (procedures for simplified declaration registration of packages are carried out by means of the web site www.mof.ge) mainly function for the economic border. (Seturidze, 2011)

eDocument: The document circulation e-system, a simple and efficient e-product ensuring the circulation of the paperless proprietary information through the Ministry of Finance and all of its structural units, including customs department. This system is time-saving, provides efficient task management, etc.

HRMS: A human resource management system, which also covers the Ministry of Finance and all its structural units including the Customs Department. The major priorities of the system are simplicity and flexibility significantly economizing customers' time and resources.

In addition, the result of the joint efforts of the Ministry of Finance and World Bank was the establishment of a corporate web-portal of the Ministry of Finance (www.mof.ge) and single integrated base. Owing to this project, the e-resources with the central staff of the Ministry of Finance and its structural units (Customs and Tax Departments, Financial Police, Treasury) were integrated in the single information database all over Georgia. Data Warehouse, a central data storage and unique structure of data storage were established. The information gaining and processing system was centralized allowing the real-time control of the operations with the customs-and-border and registration points. At present, the Ministry of Finance of Georgia has the most advance informational system of the governmental bodies.

Based upon the above-mentioned, we conclude as follows:

- (1) The article concludes that the expedient management of the state sector is a complex process depending on a number of factors, with the introduction and expedient operation of the modern informational technologies as one of the most important of them.
- (2) Expedient management is very important, as it is the precondition for the realization of the efficient customs policy being of a great assistance in solving the major economic problems of the country.
- (3) In terms of the customs system equipped with modern informational technologies the expedient management policy is easy to develop based on the real data allowing identifying the right developmental trend of the country.
- (4) The introduction of the modern information system with the customs system has promoted the successful operation of the customs service. For instance, at present, e-declaration, e-payments, e-submission of the documents and applications and online supervision of their status, as well as other e-deals with importers and exporters is possible without leaving one's office. These operations are provided through www.rs.ge portal.

- (5) The article describes the gaps of the customs system and recommends the ways to fill them.
- (6) The article may be useful for the developing countries where the issues of improving the management of the state sector, namely of the customs system are topical.

Following the above-mentioned, we can conclude that introduction and expedient operation of the modern information systems play one of the most important roles in the improvement of the state sector management of the country.

Keywords: Informational technologies, State sector, Management

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www.mof.ge - Ministry of Finance of Georgia

www.rs.ge - Web portal of the Revenue Service of Georgia

www.unctad.org - United Nations Conference on Trade and Development

www.transparency.org - Transparency International the global coalition against corruption

How to tackle information overload? Porter revised

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In recent years, the term "*information overload*" has evolved in such expressions as "information glut", "*infoxication*" and "*data smog*". Using Information and Communication Technology we produce more information faster and broadcast this information to a wider audience than ever before. It is difficult to find information that is up-to-date, correct and relevant to help make decisions. Without strategic information management in organizations, there is too much information with unknown quality; they circulate and multiply in diverse technological tools and in business processes. Policymakers who have limited cognitive processing capacities are in a situation where they drown in data at the same time as they starve for information. This adds to the stress in working life.

There are many reasons for "information overload", but in principle it is a result of the fact that we don't manage information; we don't take Information Management (IM) as a process that is at least as important as the financial management of the organization. We lack policies, principles, processes, architecture, and education and training in IM which is simply managing information, i.e. it is a conscious, planned and focused process of creating, storing, distributing, and using information in the business processes as needed, and finally removing outdated information within an organization. When these processes happen in a random fashion, employees waste a lot of time searching for information, (re)formatting data and reinventing information. Precious information may get hidden in overfilled directories, on personal computers, with several versions and be replicated many times in many systems, making business processes inefficient, ineffective and expensive, reduce quality, and inhibit learning and innovation in organizations.

In this paper we propose an IM philosophy that information is a valuable asset just as any other corporate asset and should be managed in a life cycle perspective along the value chain of the organization. Just as we strive to optimize the value chain and the physical logistics, we should optimize the information value chain and the information logistics. Thus, we develop an IM model inspired by the value chain model of Michael Porter to manage the company's intellectual assets, i.e. its data, documents, information and knowledge. The hypothesis is that Porter's model used as a management model can be applied to management of information so that information systems of the organization can deliver right information to right business process at right time with right quality to right price. In other words IM concerns the total information flow in an organization. Information flows should be designed deliberately in order to create an effective organization.

Porter proposed a general-purpose value chain that companies can use to examine all of their activities, and see how they're connected. The way in which value chain activities are performed

determines costs and affects profits. Porter's model has been widely used to get companies faster to develop products and deliver goods faster. They have achieved major cost reductions due to increased efficiency and effectiveness. Adapting the same philosophy we can manage and reduce the information overload and increase the quality and speed of the information flow along the value chain.

Porter drew the distinction between different stages of the process of supply (inbound logistics, operations, outbound logistics, marketing and sales, and after sales service), the transformation of these inputs into outputs (production, logistics, quality and continuous improvement processes), and the support services the firm employs to accomplish this task (strategic planning, human resource management, technology development and procurement). Porter's value chain has been a widely accepted model to highlight activities in the company which doesn't contribute directly to the value chain and remove them behind the scenes as support processes. What is important to notice about Porter's model is that it is recursive, i.e each primary process can be exploded as consisting of several "primary and support" processes.

Applying Porter's model on the value chain of information reveals that transformation from data to information and information to knowledge needed in the business processes can also have support processes and primary processes. Without support processes that govern information life cycle, transformation happens any way, but it is far from being efficient and effective and often results in an anarchy which undermines the efficiency and effectiveness of the business processes that need the information.

Thus support processes in the information value chain will be Strategic Information Systems (IS) Planning, IS architecture planning, Knowledge Management, Information Management, Data and Document Management. Margin will be knowledge that the organization is able to create as an added value in the information value chain witnessing that this is an organization that learns. The primary processes are creation, storage, retrieval, (re)use, removal/archiving which will happen in an orderly and optimal fashion as they will be designed and taught to information creators, information providers and information users.

Applying Porter's model to "information value chain" creates a consciousness about at least three things: We have to get returns on our information resources, which is knowledge. We have to manage those resources just as any other management process in the company. Information logistics is subject to improvements the same way as physical logistics.

Keywords: Proter Model, Information, Value chain

The Impact of Strategies in Supply Chain Management for better Performance in Manufacturing SMEs in Aguascalientes

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This research aims to analyze the impact of the implementation of strategies in the Supply Chain Management (SCM), Manufacturing for SMEs in Aguascalientes may have a higher yield. The analysis was performed through the design of an assessment tool aimed at managers through an empirical study in the period from August to December 2013. The methodology has been quantitative approach, as well as correlational and descriptive the sample is random. The expected results are intended to influence the decisions taken by the managers in their organizations to the GCS is still complex, it is more efficient through the implementation of strategies for increased output in manufacturing SMEs in Aguascalientes. In this sense, the expected results intended sizing how important the integration of strategies in the practice of the GCS, and in turn, the impact of this influence on the Performance of Manufacturing SMEs. In this study, structural equation modeling technique was applied to support software EQS 6.1

Keywords: *Strategies, Supply Chain Management, Performance, SME.*

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Biological Systems Thinking for Business

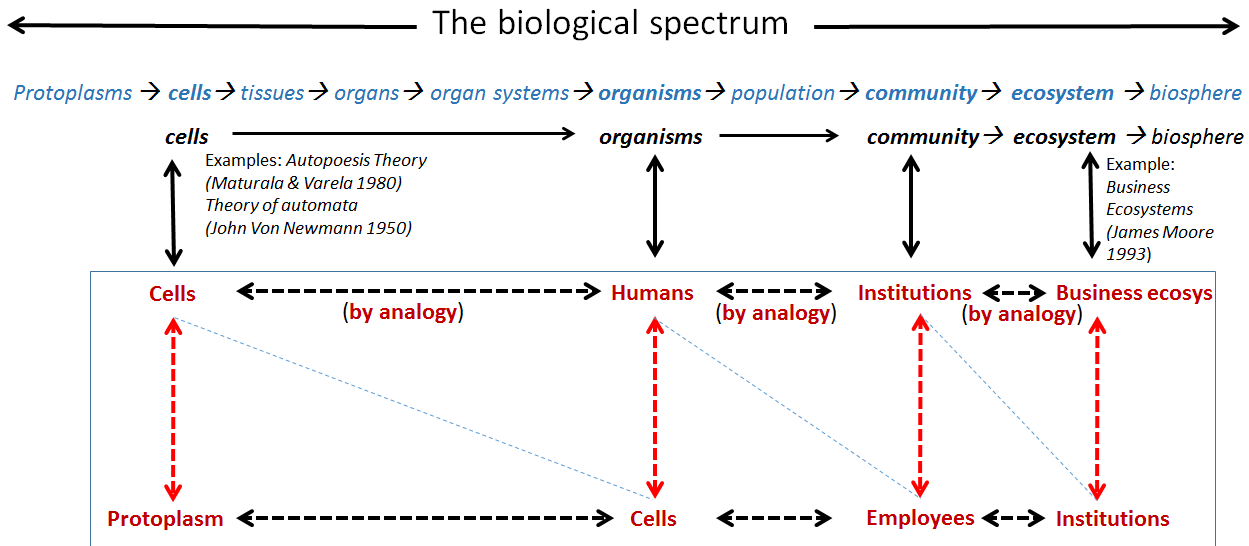
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This extended abstract introduces the concept of biological systems thinking for business. Consider the biological spectrum sketched below. The components of the spectrum range from protoplasm at the lower end to biosphere at the higher end as shown in the first line of the sketch.

Figure 1- The biological spectrum



We will look at the biological spectrum differently. We focus on four components: cells (which make up human), humans (which make up institutions), institutions (which make up businesses) and businesses (which make up business ecosystems in the sense of James Moore) to look for analogy among them. Since they are all components of the spectrum, we might expect some sort of inheritance property, or at the very least, some similarities, in structure, functionality and behavior exist among them. To that end, we start to examine three guiding principles in biology to get insights into guiding principles in business as briefed below.

The first guiding principle in biology by Claude Bernard involves the cells of human which bath in the “milieu interieur” (interstitial fluid and plasma) or internal environment. We can think that the human employees of the institution (considered analogous to cells) live in the information environment analogous to the internal environment, and the institutions (considered analogous to

humans and cells) of the business ecosystem breath in the finance environment (and financial derivatives), analogous to internal environment and information environment.

The second guiding principle in biology (and other disciplines) by Norbert Wiener is cybernetics (on the control and communication in the animal and the machine). This principle gave rise to the development of managerial cybernetics (Stafford Beer) in institutions. Thus, potentially it can be extended to the concept, dubbed business cybernetics, yet to be elaborated. The two guiding principles would lead to the third principle: the notion of homeostasis by Walter Cannon in his work on the wisdom of the body along with Sterling, Nuland and others. This gives rise to the analogous concept of equilibrium or stability in institutions and of balance in business ecosystems (in the sense of James Moore's *The death of Competition*). Humans will live well if homeostasis is maintained, institutions will prosper if stability is secured, and business ecosystems will be stable if balanced. All three (homeostasis, stability, balance) express the equivalent notion of equilibrium.

In reality, turmoil in business occurred and corporate fiascos in institutions happened much similar to cancer in humans. Cancer is caused by cells which turn abnormal for internal (e.g. mutation of genes) or external (e.g. radiation) reason in a process called mitosis. They grow uncontrollably, invade nearby tissues and proliferate to other organs and/or organ systems of the human body, and eventually bring death to human. Corporate fiascos can be caused by an individual (e.g. Nicholas Leeson of Barings Bank) or a group of humans (e.g. Jeff Skilling, Andrew Fastow and others of Enron). The turmoil is caused by failure/collapse/bankruptcy of institutions (e.g. Lehman Brothers).

In the case of Baring Bank, an employee (human), Leeson, acted as a deadly virus of an infectious disease. He took advantage of his conflicting roles, being both general manager of Barings Singapore and arbitrage trader, to engage in unauthorized, high-risk transactions between Osaka exchange and Singapore exchange (SIMEX). Lesson started to use an error account (88888) to hide financial losses and fake gains. When the last marginal call to be paid to SIMEX in December 1994 was greater than the bank's assets, the bank collapsed. The collapse in February 1995 was sudden, much to the surprise of Barings top management which exercised practically no control over Leeson's operations.

The case of Enron involved Jeff Skilling with his high-risk mark-to-market concept applied to the energy market and Andrew Fastow with his extensive use of Special Purpose Entities (SPE) and complex accounting practices to get losses off balance sheets. Enron legal counsel, accounting auditing (Arthur Anderson, which also Enron consultant), and the Board of Directors tolerated the practices. After the successful project JEDI between Enron and CalPERS in 1993, the wrongdoings and arbitrary decisions started. In November 1997, to keep CalPERS continued investments in Enron with larger amounts, Fastow created a new SPE, Chewco, targeting at \$1B investment to buy out CalPERS interests (\$383M) in JEDI. Kopper was named as manager of Chewco. The \$383M came from unsecured bank loans, guaranteed by Enron stock. There was no third-party investor with 3% equity in the original Chewco and the details of Chewco were not known to the Board.

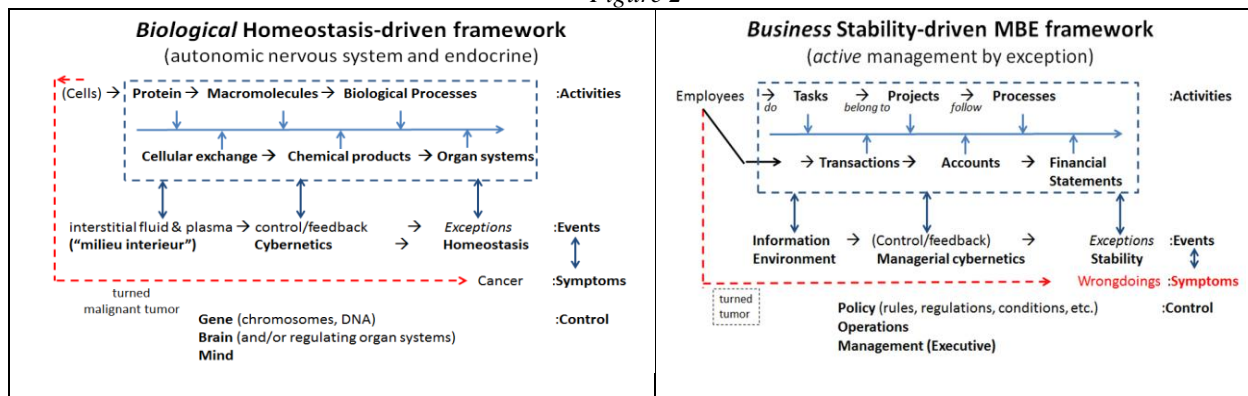
The SPE was later modified in December 1997 to show proper control and 3% independent equity. Dodson was placed as manager of two additional partnerships and the equity was provided with \$115,000 from Kopper and the remaining from a loan provided by Barclays. The diagram at the bottom of page 51 of the Powers report summarized the transactions between the SPEs accounts.

The buyout of CalPERS' final agreement occurred in March 2001. Through a complex and vaguely explained scheme, income in the form of fees was recognized in Enron statements as revenues, where losses were off the balanced sheet. The wrongdoing and arbitrary decisions surfaced. It required the 2001 3Q statement reconsolidation in October 2001. It was followed by the re-consolidation of three consecutive years 1998-2000. Huge losses were discovered. Enron collapsed in December.

The collapse of Lehman Brothers had to do with (1) personality of Richard Fuld, (2) high-risk CDOs, and (3) Repo 105 practices. In addition, the lack of bailout from the Fed and two banks, namely Barclays and Bank of America, from the business ecosystem perspective, created turmoil in both national and international business/economy. The three cases can be thought of as analogous to cancer in humans. So, the issue is how to prevent cancer from happening since cancer is very difficult to cure or manage.

The above discussion suggests two considerations. The first is inspired from the analogy presented earlier between component levels of the biological spectrum. We would like to propose at a business stability-driven framework which is analogous in some way to the biological homeostasis-driven framework for the prevention of corporate fiascos or business turmoil. It is much like the prevention of cancer by keeping the human body healthy. The second is that the business framework must house an application for the detection of wrongdoings or arbitrary decisions, much like the detection of pre-cancerous symptoms for the removal of malignant tumor.

Figure 2



Inherently, the scope of prevention would be global since the biological framework is global. There are potentially four issues on the detection. The first is how to detect the first or next wrong decisions or wrongdoings: a monitoring issue. We must find ways to expose them as they occur to all responsible parties: a transparency issue. We must be able to force the responsible parties: management-SMEs (subject matter expert), to make corrective decisions: a control issue. We must question the responsible parties for an understanding of the decisions they made, and the rationale behind: a justification issue.

At the minimum, if and only if these issues are addressed systematically, then the prevention might be possible. In our approach to prevention, the monitoring and transparency are handled by an active management by exception (MBE) system which exists in some shape or form in most institutions such as ERP, etc. The control and justification will be a mix of many techniques. The major ones would include managerial cybernetics adapted from Stafford Beer (and business

cybernetics yet to be elaborated) to address the control issue, and the repertory grid adapted from George Kelly’s Theory of Personal Constructs, and others such as decision analysis and statistical tools for the elicitation, analysis and evaluation of decisions made and their decision making processes, for the justification issue.

The analogy as sketched shows the capability to provide the prevention as we look at analogous business entities from a different perspective, the activities (events) perspective. From this view, the focus is now on exceptions to identify symptoms wrongdoings and/or risky decisions. Thus, it is necessary to build a management by exceptions system (MBE) system with capability of data acquisition to perform different analyses, and to provide numerous reports, regularly or on demand, standard or custom, as sketched below.

The left hand side denotes the data acquisition capability on business entities: human tasks (analogous to proteins in cells), projects (analogous to macromolecules), transaction (analogous to cellular exchanges), accounts (analogous to chemical products) and policy (analogous to genes/DNA) of the MBE application. The five business entities (not exhaustive) support the structure, functionality and behavior of the institution within the three guiding principles discussed earlier.

Table 1- MBE application menu

DATA ACQUISITION	ANALYSIS	REPORTING
Task	Data analysis	Standard report
Project	Process analysis	Periodic report
Transaction	Event analysis	Exception report
Account	Cluster analysis	Custom report
Policy	Correlation analysis	Other

After the data acquisition, a number of analysis processes will be available for evaluating the criticality of exceptions (the middle part, labeled as warning (yellow) or severe (red)). The processes listed might include some newly developed processes analogous to the known biological processes in human.

The MBE application allows default and custom reports with various lists of relevant exceptions (the right side). The exceptions can be any of the five business entities: task, project, transaction, account or policy.

However, having a working MBE is necessary but not sufficient. Past experience has shown that the management-leadership-SMEs might not act upon the exceptions reported. In the three cases previously introduced and briefly examined, they continued to exercise wrongdoings and arbitrary decisions despite proposed solutions such as Sarbanes-Oxley Act in 2002 (since Enron and WorldCom), legal and accounting reforms, leadership reform, and others. Many other collapses followed Enron during the last decade.

There must be a way to force management-leadership to look at the exceptions and/or explain their decision. This calls for the use of Repertory Grid which is a detailed, multi-level grid (drilled-down) supporting the top-grid sketched below.

Figure - Top-grid for the measurement of failure-success

		Management-Leadership	
		Bad	Good
Employees-SMEs	Bad	Failure (4)	Failure-Success (1)
	Good	Failure-Success (3)	Success (2)

Good management and good leadership would ensure success. Bad management and bad leadership would bring an institution to failure, potentially to collapse. If one of the two is bad while the other one is good, it is more complex and more difficult to label failure-success.

In all four cases (quadrants) we wish to know how to provide a measure on where the management-leadership stands by eliciting the constructs which would lead to the resulting failure-success measure of the institution business. The scope of investigation and measurement is the list of exceptions provided by the MBE. Following Valerie Stewart, we can start with a purposeful statement: “What is involved in a project (such as Chewco)?” We aim at triggering a collection of constructs to be identified by the management-leadership-SMEs using a triadic procedure, with laddering and cluster analysis technique. Members are asked to rate each step/task against the constructs in a 5-point scale (1-5) or 7-point scale for the evaluation of details leading to an overall numerically measured failure-success in institutions.

The above sketches our biological systems thinking for business.

Keywords: Biological Systems Thinking, Business Management

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Horizon 2035: Developing a long-term strategic vision for the health, social care and public health workforce in England

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Background: The Horizon 2035 programme of work has adopted a systems thinking approach to considering how challenges across the English health and care system may unfold over the next 20 years, in terms of demand and supply of skills. The Centre for Workforce Intelligence (CfWI) is conducting this project at the request of the Department of Health (DH) in England. The role of the DH is ‘the steward of the health and care system to ensure that it operates effectively as a whole to meet the needs of people and communities’ (DH, 2013). The CfWI is a key contributor to the planning of future workforce requirements for health care in England. The DH, as well as Health Education England and Public Health England, commission the CfWI to inform national and local workforce planning and policy decisions.

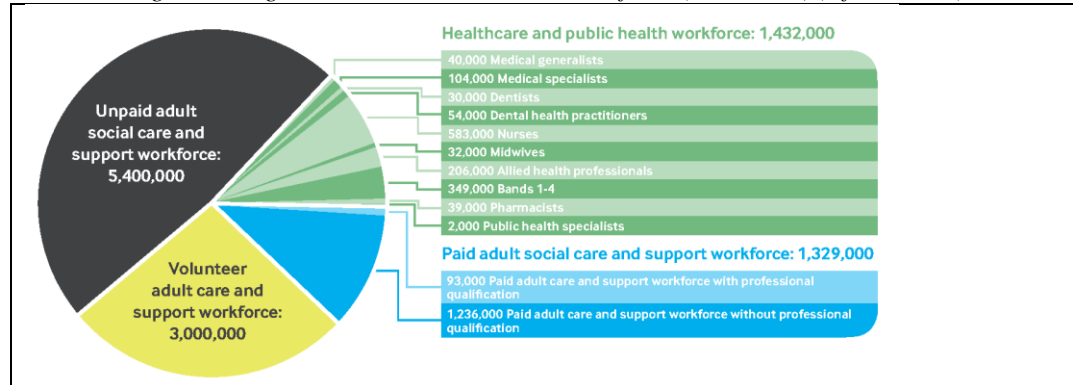
This paper describes the progress of the Horizon 2035 project, the systems thinking approaches used, current findings and the next steps.

Objectives: The objective of the project is to understand how the demand for and supply of workforce skills will change over the next twenty years.

The English health and social care system is large, complex and serves the needs of a population of 54 million people (ONS, 2014). The total number of jobs within the health and care system in 2013 was 3.4 million (ONS, 2013). Of this, the English National Health Service (NHS) employs

1.4 million staff (HSCIC, 2014). The workforce, as shown in Figure 1, is composed of many roles, some of which require a significant number of years of training. The workforce also includes unpaid carers and volunteers.

Figure 1: English health and social care workforce (headcount) (CfWI 2014a)



There is significant uncertainty about the future. Factors that contribute to uncertain workforce demand include the projected growing and ageing population, changes in disease prevalence and multi-morbidity, and the impact of changing health and lifestyles (CfWI, 2013). Factors that influence workforce supply include technology, and changes to ways of working within the context of challenging economic conditions and global uncertainty.

Effective planning requires thinking beyond typical planning cycles, and acknowledging the connected nature of the issues in this complex system. The long timeframe of 20 years for the project presents a different challenge; that our current conceptions of roles and responsibilities in health and care services may not be applicable over a long period.

Research question: Can we adopt a whole system approach to the health, social care and public health system, in order to quantify the future needs for skills?

Approach and methods: The CfWI's robust workforce planning approach uses systems thinking principles, and recognises the inherent uncertainty of the future (CfWI, 2014b). Figure 2 illustrates the framework. It consists of four linked stages integrating horizon scanning with scenario generation, and system dynamics modeling and simulation. A major feature is the high degree of stakeholder involvement, which is critical to arrive at a shared view of future challenges, and in making robust policy decisions.

Horizon 2035 commenced in October 2013, and is currently in the scenario generation and workforce modeling stages. The following sections describe the activities and emerging results.

Stage 1 – Focal question

The focal question was defined as: "Thinking up to the year 2035, what driving forces (both trend and uncertainties) may influence: the requirements of the future workforce for health, social care and public health; and workforce numbers, proportions, skills and competences?"

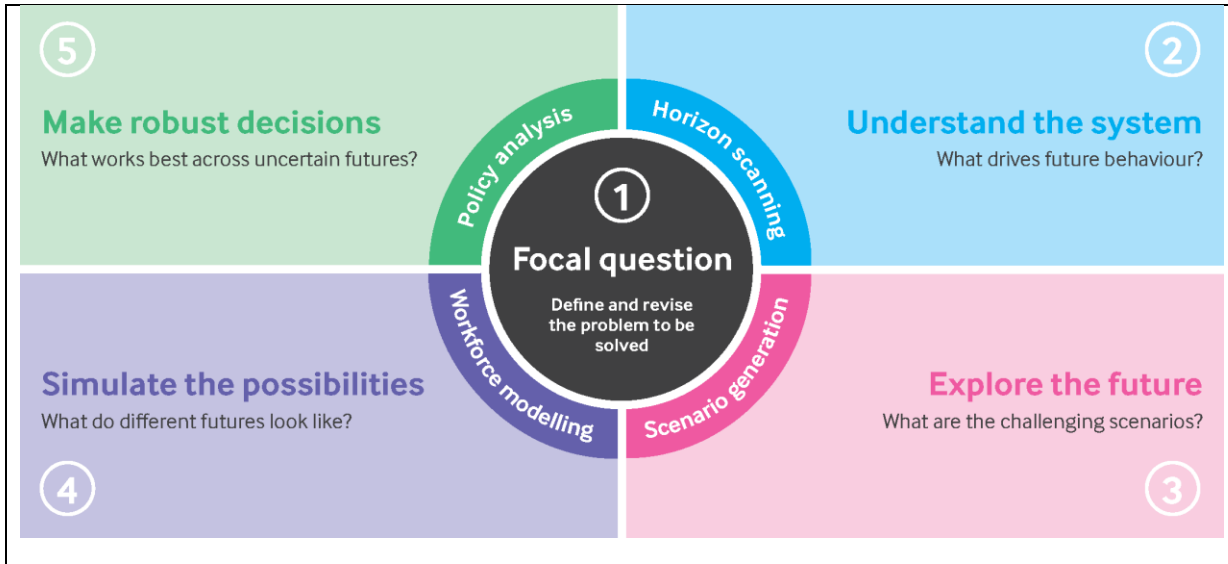
Stage 2 – Horizon scanning: Exploring and understanding the system

The starting point was to understand how the system evolved to its current state, through literature reviews and stakeholder interviews. We developed an interactive presentation that depicted historic trends across the whole system (CfWI, 2014c).

The next step was to establish the factors that describe the system. The CfWI defines a factor as those 'system quantities or qualities which can change over time, linked through cause and effect

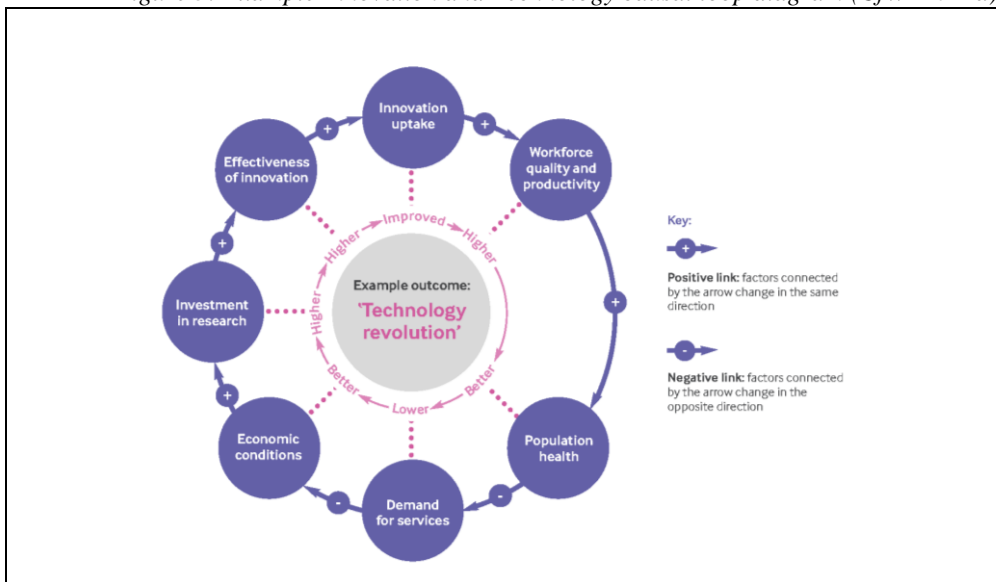
relationships and can change the system’ (CfWI 2014d). Previous CfWI horizon scanning and scenario generation work was synthesised and over 100 factors listed (see CfWI 2014d).

Figure 2: The Robust workforce planning framework



Next, over fifty sector experts attended a series of workshops to identify additional factors and consider how groups of factors might cluster together and influence each other. The workshops were thematic and covered healthcare, public health, social care and the whole system. The workshop participants generated twenty-three clusters. We used causal loop diagrams to describe these clusters, as illustrated in Figure 3.

Figure 3: Example Innovation and Technology causal loop diagram (CfWI 2014a)

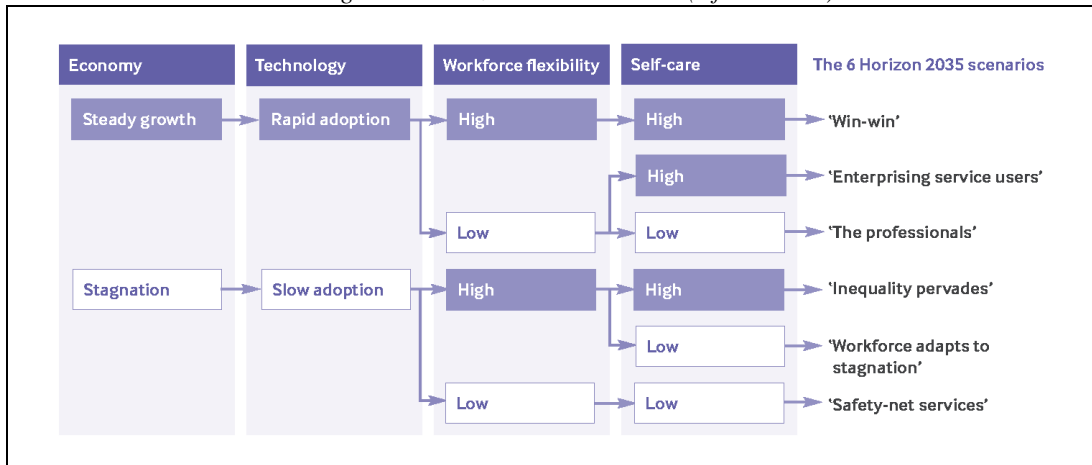


We identified twenty-nine high impact and high uncertainty factors to take forward to scenario generation.

Stage 3 – Scenario generation: Exploring the future through scenario generation

A scenario is ‘a description of a possible future situation including the paths of development that may lead to it’ (CfWI 2014d). We asked sector experts to create these futures in a series of workshops. The participants selected four scenario dimensions: the economy, technology, workforce flexibility and self-care. They then constructed six scenarios using plausible and consistent combinations of these dimensions, as shown in Figure 4.

Figure 4: Horizon 2035 scenarios (CfWI 2014a)



Common workforce themes emerging from the scenarios included modifying skill mixes, and changing responsibilities around demand management.

Stage 4 – Workforce modeling: Simulating possible demand and supply using system dynamics

Simulation allows us to quantify the future demand and supply of skills across different futures, and tested potential policies. We are using System dynamics (SD) simulation in Horizon 2035. SD enables the behavior of complex systems over time to be understood and simulated and has been applied to studying and managing complex feedback systems.

So far, the simulation has concentrated on the future demand for skills. Figure 5 below provides a conceptual overview of the current demand modeling process. Development of the supply model component is ongoing.

Fundamental to the Horizon 2035 model has been the creation of a skills and competency taxonomy. We developed the taxonomy with sector experts. This framework, as shown in Figure 6, recognizes competence in these sectors as a complex combination of an individual’s skills, personal attributes and knowledge. The focus of the demand model has been on the eight ‘wellbeing skills’ as these relate most directly to workforce capacity and capability.

Figure 5: Demand modelling overview (CfWI 2014a)

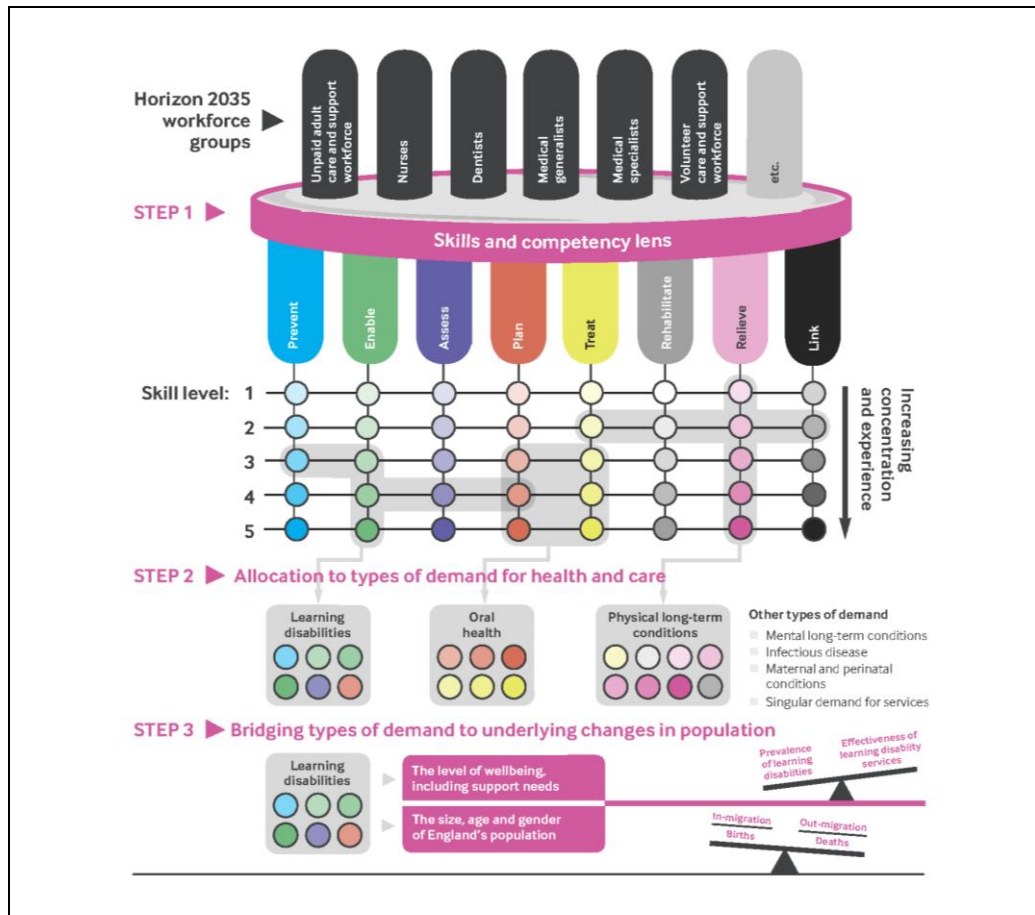
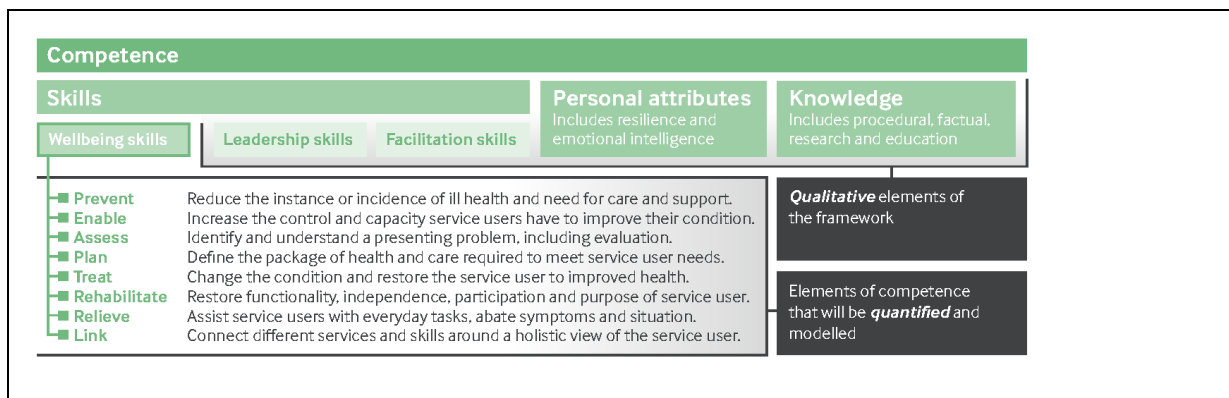


Figure 6: Horizon 2035 skills and competency taxonomy (CfWI 2014a)



The first step in the demand modeling process has been to capture current workforce activity within the skills and competency taxonomy. Activity in each workforce group is mapped to create a profile of ‘wellbeing skills’ for the group. The outcome is a picture of full time activity for the entire health and care workforce according to a common currency of skills.

The second step is to assign the current skill activity to high-level categories of service user requirements in health and care. The seven demand categories, illustrated in Figure 5, were identified from CfWI analysis of a range of demand sources. The outcome of this stage is a rich picture of the volume of workforce activity across different types of demand, and the skills currently deployed to meet these demands.

The third step of the demand modeling process bridges this activity by skill and by type of demand with underlying determinants of demand. We have approached this by considering that the volume of demand in these categories related to an incidence of ill-health, or a defined care and support need. We have then considered that this incidence of ill-health and care and support needs stems from a combination of prevalence by population and the size and shape of the population in England.

The model allows us to project the future demand for workforce skill into the future, supporting the final policy analysis stage, and we are extending it to skills supply.

Findings: This paper describes the current state of the Horizon 2035 project. The project will continue through to 2015, with the emphasis being on validation of the model definitions with sector experts, the development of further system dynamics models that describe the supply of skills across health and care, and the development of a baseline case for future demand and supply of health and care skills.

The process to date has resulted in the development of six plausible but challenging scenarios that we are quantifying using system dynamics modeling and expert elicitation. This will provide a firm platform for the analysis of policy, taking into account impacts across the health and social care system in England.

Keywords: *Horizon 20135, Public Healthcare, Workforce*

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Business organisations as symbiotic systems: Internal tensions, specific forms and control mechanisms

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Living systems represent a popular paradigm for business organisations, which explains the organizational characteristics of self-identity, autopoiesis, self-regulation, and co-evolution with the environment (Kandjani et al., 2013; Vancouver, 1996; Velentzas, Broni, 2011). This paper contributes to the development and clarification of this paradigm, proposing that business organisations can be best represented as symbiotic systems, nested in dynamic ecosystems.

The force of the symbiotic system paradigm is derived from the observation that an organisation represents a collection of individuals which collaborate in order to achieve a common goal (Scott, 2008). On the other hand, each participating individual has its own interests, which can create tensions between the individual and collective goals and interests. These tensions are solved through a dynamic equilibrium between opportunism and collaborating benefits, studied by the Game Theory (Myerson, 1991). As in biological symbiotic systems, in business organisations the relationships between various individuals “does not imply a strict compartmentation of interspecific relationships, representing a continuous and dynamic process of different relations, such as mutualism, parasitism and commensalism” (Carrapiço, 2012).

In practice, this dynamic equilibrium is realised through inter-individual communication and specific control mechanisms which introduce implicit and/or explicit self-regulating mechanisms which keep in check the internal organizational tensions (Vancouver, 1996). The control mechanisms applied within business organisations to achieve the dynamic equilibrium between individual, group and organizational interests, include four levers (Simons, 1995): (1) beliefs, (2) boundary, (3) diagnostic, and (4) interactive systems.

Applying this interpretative framework, the study applied a case study methodology to investigate three instances of symbiotic systems: firms, strategic alliances and meta-organizations. Using an exploratory approach tooted in grounded theory methodology, the study indicates characteristics of the symbiotic parties, the structure of internal collaboration, the main sources of internal tensions, and the control levers applied in each situation. The findings indicate that all four levers are required to create a dynamic equilibrium between positive and negative control forces within these symbiotic systems (Simons, 1995).

The theoretical and practical implications of the symbiotic system paradigm are discussed and a series of organizational principles are formulated, to describe the basic relational framework of these systems.

Keywords: Living Systems, Symbiotic Systems, Business organisations

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**SYSTEM DYNAMICS FOR STRATEGY, POLICY AND
MANAGEMENT**

The strategic orientation of organic olive oil firms: an empirical survey for a possible systemic integration

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Objectives

The competitiveness of the agro-food SMEs in the global market is limited by the size of the company, by the production capacity and by marketing weaknesses (Contò et al., 2013).

The consonance to the competitive environment (Golinelli, 2005) of different forms of aggregation and systemic strategic alliance between a large number of SMEs (as a Producers Organization), aimed at obtaining economies of scale and greater bargaining power in the distribution phase and development of innovative capacities of marketing, may depend on the strategic orientation of the businesses and on its level of homogeneity in the network.

In the literature there are studies on the conditions that enhance the marketing innovation such as the size and location of the enterprise, as well as research that highlight the relationship between marketing orientation and the achievement of a competitive advantage (which affects, at the same time, marketing innovation), (O'Cass, Ngo, 2011; Naidoo, 2010) and studies that show the relationship between market orientation and business performance (Hult, Ketchen, 2001).

The aim of the paper is to identify the strategic orientation of a group of companies producers and/or distributors of organic extra virgin olive oil and to measure the degree of homogeneity of the strategic orientation of observed firms. This element can be considered as a necessary condition for the possible creation of an effective producer organization in the sector, consistent with a systemic approach to the supply chain.

Methodology

Moving from eminent studies on the strategic orientation (Kohli, Jaworski, 1990; Covin, Slevin, 1989) according to which these can be observed in reference to internal factors such as the operating management, entrepreneurship, risk-taking, organization and to external factors such as competitors and customers, an exploratory survey, based on multiple case studies, is presented.

The data are collected through a web- based questionnaire submitted to a population of 200 producers/distributors of extra virgin organic olive oil identified through the parameter of the excellent production, as participants in the International Award Biol.

The data are analyzed by comparing the position of the market (selling price per liter) with the strategic orientation of the 187 respondent enterprises, distinguishable into three groups of firms with different orientation to the product, its competitors, the consumer. The selection of the three groups of strategic orientation is carried out through analysis of questions about the attention given to the consumer (segmentation, precise knowledge of the target and preferences, type and frequency of analysis of customer satisfaction), as well as to communication tools (active and bi-directional) used.

Results

The detection of the current strategic orientation of marketing management in the analyzed network, is useful to investigate the possibility of developing a competitive systemic model in the organic olive oil sector, such as the producer organization.

Strategic Orientation	GROUP	Market positioning (Price)			
		Low	Medium	High	
To the Product	A	16	13	5	34
To Competitors	B	43	23	22	88
To the Consumer	C	36	19	10	65
		95	55	37	187

The results analysis can serve as a basis for the development and structuring of a systemic model of agricultural enterprises integration.

Practical implications

We intend to check in advance the applicability and the competitive potential of the systemic model of “organization of producers” in organic olive oil sector. The creation of a systemic model for the analyzed businesses may have strategic implications crucial if the model is adapted to the characteristics and context of the observed network.

Originality of the work

This is a study on the strategic orientation of an international population of businesses operating in a specific sector of the food industry – the organic olive oil. There are a few works on the subject in the literature.

Keywords: *strategic orientation, extra virgin organic olive, systemic integration.*

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Let it swing—When volatility leads to improved performance in strategic resources adaptation

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The main thesis of this paper is that fluctuations and oscillations are necessary behaviour modes of successful social systems, including business firms. Based on a conceptual system dynamics model of resource accumulation and capacity adaptation, the paper explores conditions under which volatile have an advantage compared to stable organisations. The findings of the paper regard parameter ranges and structural determinants for which volatile resource systems achieve higher performance than rather stable systems.

Managers in business appear to be “obsessed” with flattening volatile and oscillatory behaviour: (strategic and other) resources of a company should display stable development that is assumed to be efficient; such “stability” is supposed to also lead to non-cyclical performance. Sometimes cycles are considered to be unavoidable and counter-cyclical strategies are recommended, in order to at least make the most out of the unfortunate presence of volatility (Bromily et al., 2008). In the best case, performance should grow by a certain percentage annually, leading to exponential growth of the firm. While the impossibility of such growth behaviour in the long run has been discussed widely before (Daly, 1987), this study addresses the managerial quest for constant development, expressed in the wish to make resource and business cycles to disappear and be replaced by smooth, continuous growth. The same observation can be made with regard to policy makers in the macro-economic domain who often strive for eliminating cycles on a larger scale like whole economies and societies or try to influence oscillations to synchronize with political events like elections (Alesina et al., 1989).

Inspired by work in the natural sciences (Reichhoff, 2008), this paper argues that ultimately only rigid systems (one might say “dead” systems) are not characterised by some form of volatility, being it random fluctuations or more orderly oscillations. Thus, volatility seems to be a necessary condition for the viability of living systems. This idea is transferred to business organisations and it is argued that those fluctuations that managers try to fight can actually be very instrumental for creating sustainable success. More concretely, the modification of organisational resources to adjust to varying environmental demands is investigated. By way of a low-order balancing feedback process characterised by perceptive and material delays, these resources (which, for instance, might be personnel, machinery, or firm-specific knowledge) are adapted to provide a fit with external requirements (Warren, 2008). The simulation model used for the analyses is derived from widely-accepted published work in the field of system dynamics and informed by empirical evidence (Serman, 2000). Performance measures defined include costs for resource adaptation

and costs for resource misfit with environmental demands, from which an overall performance score is constructed.

As a first step of analysis, the paper explores ranges of relationships between resource adaptation and resource misfit costs for which slower or faster adaptation capabilities are beneficial. In a second step, it is shown that—depending on the adaptation strategy chosen—oscillations in the system are necessary consequences. As such, to a certain degree volatility might be interpreted as a sign of successful resource adaptation systems and, thus, of superior business performance. The paper also sheds light on the boundaries of such beneficial nature of volatility. In subsequent research, this study can be extended by elaborating on the resource adaptation process, on the feedback relationship between environmental and organisational factors, and by the inclusion of competitive forces. The parameterization of the model based on a real-world case study is envisaged.

Keywords: *strategic resources, volatility, system dynamics.*

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Interacting paradigms for modeling social interactions

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Social interactions are very complex phenomena to be analyzed and described (Schelling, 1978; Ulrich, Probst, 1984; Bicchieri, 2006) and involve both individuals and societies of individuals and so both individual behaviors and collective behaviors within dynamic relations governed by either imposed or emerging norms as rules of behavior for the members of a given society.

In this paper we present the approach that we have dealt with in (Cioni, 2013) and that has been heavily inspired by Schelling (1978, 1982) and Bicchieri (2006). According to this approach there are feedback links between individual behaviors and collective behaviors so that, from their interactions, some planned norms (Bicchieri, 2006) can gain acceptance from the individuals or some social norms may form as a product of the behaviors of the individuals, possibly conflicting with purposely designed norms at the collective behaviors level or at the level of a whole society. The main aim of this paper is, indeed, to briefly illustrate some of the reasons for the arising of the usually conflicting dynamics between planned norms, that should turn into some desired behaviors of the “governed” individuals, and the norms that emerge, more or less spontaneously, from the interactions among the individuals for which the norms of the former type have been designed.

The paper deals with these issues at two levels (Cioni, 2013; Schelling, 1978; Schillo et al. 2000) and so at the micro-level (where we have the interactions among the individuals within a given society) and at the macro-level (or at the level of the society as a whole) and only gives some hints about the roles that groups (as non disjoint subsets of individuals) and coalitions (as disjoint subsets of individuals) may play through the implementation of a meso-level (McConnell, Moran, 2000) that can act either as a mediation level or as a conflict multiplier level between the other two levels.

For these purposes the paper (Cioni, 2013; Nigel, Conte, 2005; Nigel, Troitzsch, 1999) contains a bunch of models that present a framework of the individual interactions at the micro-level and of the social (or aggregated) interactions at the macro-level in order to compare the outcomes of some forms of rule based or norm based simple interactions at the two levels. The basic idea on which these models are based is that the individuals express behaviors that are produced by simple and computationally light rules that assume, in most of the cases, only a very bounded rationality (Rubinstein, 1997). The models that we present, moreover, are based on a closed world assumption (Nigel, Troitzsch, 1999) or on populations of a fixed numerosity (and so without births and deaths) that are, therefore, characterized only by migrations of individuals between distinct types of individuals that represent the compliance or the noncompliance with some norm from the individuals of a given population. Last but not least within the models the individuals are assumed to move at random within a fixed size world and to be influenced mainly

by pairwise or bilateral encounters even if also multilateral encounters may play a significant role.

The models at the micro-level have been implemented as agent based models (using NetLogo) whereas those at the macro-level have been implemented as system dynamics models (using Vensim). In both cases for each model we defined an agent based version and the corresponding system dynamics version. For both versions we identified some variables to be monitored in order to verify if there is any relation between the planned or macro-level behaviors and those that emerge from the interactions at the micro-level. Roughly speaking if there is a correspondence we can say that a planned norm has been accepted at the micro-level otherwise there are hints that such norm has been rejected and possibly has been replaced with an emerging conflicting norm.

The paper contains a description of the general framework and of the various models and a discussion of the possible arising of conflicts between individual emerging behaviors and social planned behaviors that, from our point of view, represent the core of the social interactions (Cioni, 2013; Schelling, 1978) and for which we give only some hints for partial tentative solutions.

Keywords: *individual behaviors, collective behaviors, agent based models, system dynamics models, micro-level, macro-level, social norms, emerging rules.*

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Developing robust workforce policies for the English health and social care system using system dynamics

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Background

The English health and social care workforce is large. The total number of jobs within the health and care system in 2013 was 3.4 million (ONS, 2013b). Of this, the English National Health Service (NHS) employs 1.4 million staff (NHS) (HSCIC, 2014). It has been claimed that only the Chinese People’s Liberation Army, the Wal-Mart supermarket chain and Indian Railways directly employ more people. Furthermore, the workforce is composed of diverse set of roles such as doctors, nurses, social workers and carers, many of which require a significant number of years of training.

The risks of poor workforce planning are to put patient lives at risk, increase morbidity, and the need to spend large sums of money to correct sub-optimal systems. Employees can suffer from the stresses of understaffing, or in the case of oversupply, livelihoods can be put in jeopardy if jobs are not available. To mitigate risk it is important to have foresight of the key issues, and flexibility within the workforce and the training pipeline (i.e. the stages required prior to entering the workforce). Finally, it can takes many years to train these professionals, for example 15 years or more for a hospital consultant, so an under or over-supply cannot be corrected quickly or easily.

The Centre for Workforce Intelligence (CfWI) is a key contributor to the planning of future workforce requirements for health, public health and social care in England. The CfWI is commissioned by the DH, as well as Health Education England (HEE) and Public Health England (PHE), to look at specific workforce groups and pathways, and to provide materials, tools and resources to inform workforce planning policy decisions at a national and local level.

This paper describes the CfWI approach to developing SD models for these projects and specific benefits of the approach.

Objectives

Our objectives were to develop an approach to modelling and simulation of workforce supply and demand, replacing complicated Microsoft Excel models that were difficult to understand and

validate. The models needed to be developed using sound software engineering principles, be capable of reflecting the complex influences in the system, link to large data sets, and be easy to use and maintain.

Research question

Our research question was:

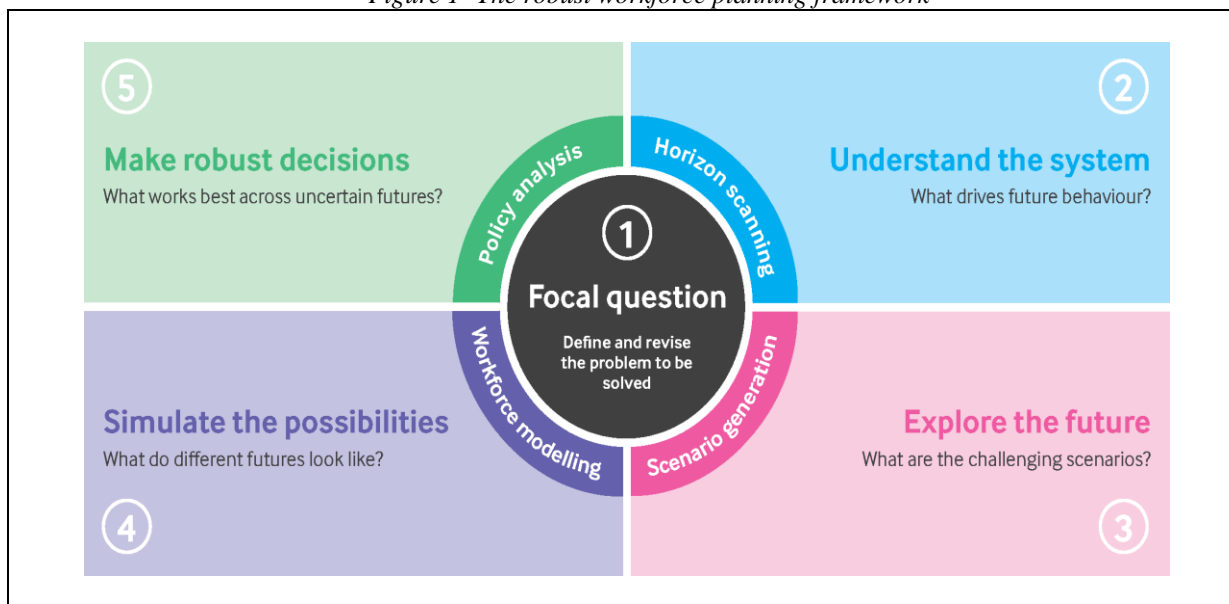
Can we develop a practical system dynamics model for simulating the supply of and demand for the health and care workforce in England?

CfWI approach to workforce planning

The CfWI has developed a workforce planning approach that recognises the complexity of factors influencing demand and supply and the intrinsic uncertainty of the future. This framework is referred to as the Robust Workforce Planning framework (CfWI 2014a). The key benefits of this approach are to support longer-term planning, to provide robust decision-making that takes account of the uncertainties of the future, and to help decision makers be more alert to emerging risks as the future unfolds.

Figure 1 illustrates the workforce planning framework at a high-level. It consists of four linked stages, the outputs from each stage feeding into the next. A major feature of the framework is the high degree of stakeholder involvement, which is critical to arrive at a shared view of future challenges, and in making policy decisions.

Figure 1- The robust workforce planning framework

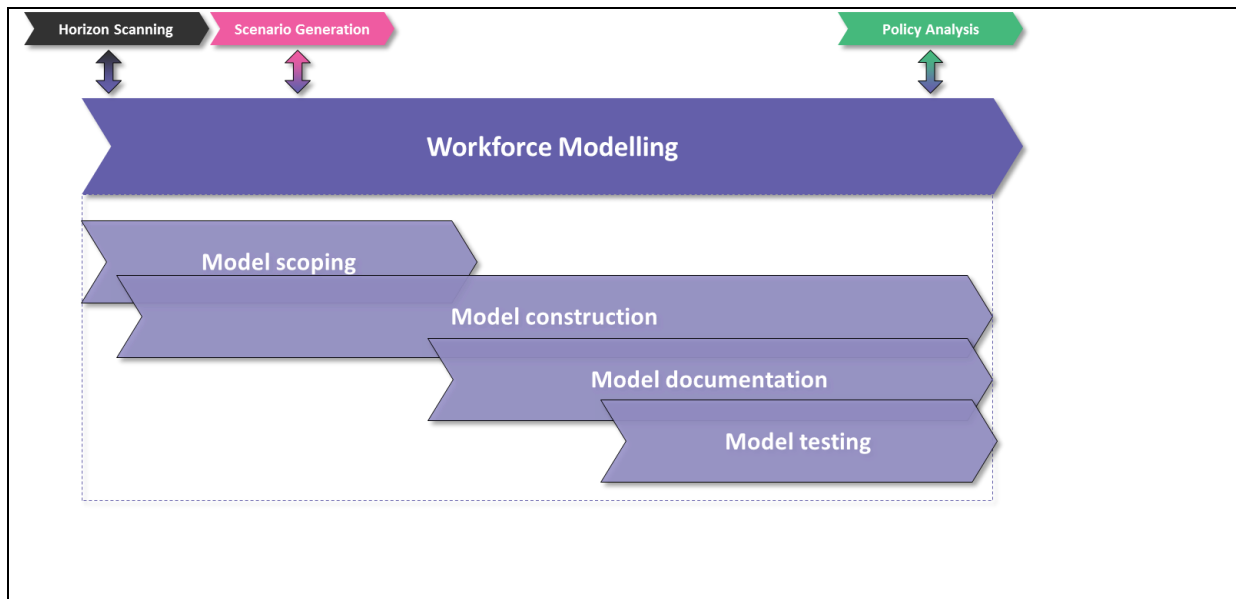


Central to the approach are system dynamics (SD) models that calculate workforce supply and demand. The models are grounded in empirical data and evidence. The models enable analysis against a range of potential futures and policy interventions. The models also allow the rapid assessment of the implications of scenarios and policies across the whole of the workforce system. The CfWI has used SD to carry out policy analysis on a number of workforces in health and social care system, including doctors, pharmacists and dentists.

CfWI approach to SD model development

The CfWI has adopted a structured approach to model development (CfWI, 2014d). This is formalised in a best practice guide that lays out the development stages and expectations for the outcomes of each stage. The process, as illustrated in **Errore. L'origine riferimento non è stata trovata.**, is consistent with previous development methods presented by authors such as Sterman (2000), Keating (1999), Randers (1980) and Forrester (1961). The approach is also consistent with the recommendations of the MacPherson review of Government analytical models (MacPherson, 2013).

Figure 2: The approach adopted by the CfWI to developing system dynamics based workforce models (CfWI, 2014d)



Research findings – application of SD modelling for policy development

The CfWI has carried out a number of workforce studies using system dynamics, many of which are in the public domain. These workforces have included doctors (Department of Health, 2012), pharmacists (CfWI, 2013b), dentists (CfWI, 2013a) and general practitioners (CfWI, 2014d).

One particular example that exemplifies the benefits of the SD approach was a study carried out in 2012 on the long term requirements for training doctors. In 2013, the English NHS employed 148,000 doctors, which includes hospital consultants, registrars and general practitioners (HSCIC 2014). Supply of a single specialist doctor costs the UK Government approximately £250K to £550K in training (University of Kent, 2011) and over £2Million in lifetime salary (NHS Information Centre, 2013). The project was carried out by the CfWI for the Department of Health (DH) and the Higher Education Funding Council for England (HEFCE) (Department of Health, 2012). Some of the key elements of model development, benefits of the approach and the policy analysis performed are described below.

During the qualitative stages of SD model development the relevant processes of the training and career pathways were mapped out with stakeholders from the medical system. In addition, the process maps were presented at a series of national road shows hosted by the CfWI, which enabled over 80 people to comment and amend them. Key stakeholder groups involved in this

process include the DH's Workforce Data and Analysis Team, the Health and Social Care Information Centre, the British Medical Association, the General Medical Council and specific deaneries, University and Colleges Admissions Service and NHS Pensions. The large degree of stakeholder engagement throughout the process mapping stage ensured high levels of stakeholder buy-in to the modelling process (Willis, Woodward, Cave, 2013).

During the quantitative stage of model development, the process maps were converted to an SD simulation model that calculated the demand for and supply of doctors over a thirty-year period. The SD model contained a significant amount of segmentation, and represented the workforce by age and gender to enable societal factors such as retirement changes and gender differences to be factored into the analysis. The simulation model was extensively tested, including the involvement of several hundred stakeholders in sense-checking the accuracy of the dynamic behaviour of the model (Willis, Woodward, Cave, 2013). The model enabled rapid quantitative policy analysis within a risk free environment.

The system dynamics approach meant that robust, evidence-based supply and demand models were developed for the medical workforce that could be used to test potential policies and their impact. It also meant that the model was 'transparent' and enabled capture and synthesis of the expertise of several hundred stakeholders from the healthcare system.

The SD modelling carried out as part of this particular project influenced decisions taken by the DH and the HEFCE to adjust the numbers of doctors being trained in order to prevent a future under or over-supply. Decisions that were informed from this work included a 2% reduction in medical school intakes which was introduced in 2013, and a rolling cycle of reviews to be undertaken every three years.

Next steps for the application of SD for policy analysis and development

The objective of replacing complicated Microsoft Excel models that were difficult to understand and validate with system dynamics models capable of reflecting the complex influences in the system, link to large data sets, and be easy to use and maintain has been achieved and demonstrated in a number of studies. The next steps for the application of SD for policy analysis and development at the CfWI include a number of forthcoming workforce reviews, for example for social workers and specialist doctors. The CfWI is also using SD in a whole system review of the English health and social care system, which is taking a high-level view using an innovative skill based perspective on the demand for, and supply of workforce resource (CfWI, 2014c).

Keywords: *System Dynamics, Policy analysis, Policy development.*

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Combining the potentialities of System Dynamics and Integrated Reporting to manage complex and dynamic business domains: focus on the Airline Sector

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The principles, guidelines and values according to which modern organisations manage their operational processes and report subsequent performance are nowadays under great scrutiny and analysis. In particular, in the aftermath of the recent global financial crisis, and in light of the various corporate scandals, the frequent mismanagement and deployment of natural and environmental resources, the debate is currently focusing on which management and accounting tools could assist decision makers in better managing their organisations and the resources at their disposal, and in communicating data, information and results to their stakeholders.

To address such issues, over the last few years many companies across different industries and all over the world released reports and communication based on a voluntary disclosure of data and information related to environmental, sustainability and corporate social responsibility. However, this also led to a variety of different accounting reports with various contents, aims and communication forms, spanning from very quantitative reports - such as financial reports - to very qualitative and narrative reports - especially in the field of corporate social responsibility (Beattie, Smith, 2013). Subsequently, calls from academics as well as practitioners were aimed at stimulating the debate towards the definition of integrated forms of reporting, including both financial values as well as sustainability, social and environmental information relevant for the various stakeholders.

In this context, a few coalitions, NGOs, councils (there included the International Integrated Reporting Council we will subsequently refer to) oriented their research towards the definition of more comprehensive and broad reporting frameworks, able to include not only a variety of data and accounting values, but also information and explanations about the ways in which such data were generated and in turn affected the organisation's strategy and value creation process.

For these reasons, new reporting tools and frames were developed over the last ten years (or more), usually providing multidimensional frameworks for strategic management and accounting reporting. Among them, well known performance measurement tools, systems and frameworks such as the Balanced Scorecard (Kaplan, Norton, 1992, 1996) and the Global Reporting Initiative (GRI), and reporting and management ideas centered on the adoption of a so-called “one report” (Eccles, Krzus, 2011).

Starting from these considerations, in this work we focus on the so-called Integrated Reporting which is one of the latest novelties in corporate reporting.

In more detail, in April 2013 the International Integrated Reporting Council (IIRC) released a Consultation Draft of the so-called “First Integrated Reporting Framework”. The framework was essentially focused on explaining how to develop an integrated report, clarifying what elements it might include. After several months, the IIRC eventually published (on Monday 9 December 2013) the final version of the “Framework”.

In brief, Integrated Reporting (IR) aims to provide, present and discuss a specific process aimed at communicating an organisation’s results through the use of an annual integrated report.

Anyhow, IR is much more than the latest fad or fashion in the field of corporate reporting: as Busco, Frigo, Quattrone and Riccaboni (2013) highlight, Integrated Reporting represents an example “of contemporary managerial innovation where a number of initiatives, organizations, and individuals began to converge in response to the need for a consistent, collaborative, and internationally accepted approach to redesigning corporate reporting”.

Key questions arising in this context are the following: which are the capitals at disposal and managed by the organisation? In which way is value created and distributed over time? Which are our stakeholders and how is our organisation accountable to them? How can our business model and strategy be presented and which are their interconnections? How does the systemic structure of the business domain under analysis influence decision making and strategy formulation? How can our decisions improve performance over time?

If on one hand IR can assist decision-makers to partially provide an answer to such questions and subsequently better manage their organisation’s value creation and communication processes, on the other hand IR still lacks specific tools and principles in order to clearly represent the business domain under investigation and support policy analysis and strategy formulation in that context.

To this aim, this work addresses one main research question, i.e. it aims to explore the potentialities of System Dynamics (SD; Forrester, 1961; Richardson, Pugh, 1981; Coyle 1996; Sterman, 2000) modelling principles and tools in combination with IR for a coherent and comprehensive integrated thinking approach to management and decision-making.

In so doing, the paper relies on a significant literature both related to business models and strategy in the airline sector (e.g. Alamdari, Fagan, 2005; Hunter, 2006; Lohman, Koo, 2013) and to System Dynamics applied both to strategic management and low fare airlines (Sterman 1988; Warren, 2002, 2008; Morecroft 1997, 2007, 2008).

In this regard, focusing on the airline industry and the Low Cost Carriers business model, this work aims to discuss how to firstly develop an IR-based SD model able to capture the dynamics of the domain under investigation, and secondly an IR-based SD Interactive Learning Environment to be used to support decision-making and strategy formulation.

In more detail, a five stage approach is presented and applied, as follows:

- a) define the organisation’s strategy;
- b) identify the key components of the business model;
- c) develop the System Dynamics model and validate it against historical data;
- d) draw an initial Integrated Report that match data with the SD model (sort of “base run report) to inform future decision-making;

- e) embed the IR-based SD model into an IR-based Interactive learning Environment in order to perform scenario analysis, understand value creation dynamics over the short, medium and long term, and design future strategies.

The simulation outcomes of specific scenarios as well as the discussion of the potentialities of a combined use of IR and SD and some final remarks conclude the paper.

Overall, the paper demonstrates that the contribution of a System Dynamics approach to Integrated Reporting is at least twofold:

- a) first, SD is suitable to provide an explanation about how the specific business system actually operates, and makes available the basis for understanding past performance; that is to say, an IR-based SD model might be used both internally (to assist decision-makers to understand and analyse the organisation's business model) and externally (to communicate to stakeholders a variety of relevant data and information organised according to IR guidelines); second, SD - especially in the form of an ILE - may support decision-makers to explore possible trajectories of future performance, given the strategy being designed and implemented.

Keywords: *System Dynamics, Integrated reporting, Airline sector*

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Merging Viable Systems Approach (vSa) and System Dynamics to evaluate sustainable value creation

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Aim of this paper is to propose the design and development of an Interactive Environment through a system dynamics model that, based on the conceptualizations of vSa, makes it possible to simulate the behavior of business organizations interested in measuring, and eventually increasing, their sustainable value.

According to the above-mentioned theoretical framework, value, which has traditionally been considered as something objective and defined a priori, is characterized by a multiple nature and by strongly subjective contents. This last concept means that the definition of value passes through the perspective of the subjects towards whom it is created (i.e. Recipient), in relation to the perspective of the entity who is interested in its creation and measurement (i.e. the governing body of the organizations). This conceptualization, based on vSa assumes even greater significance when we refer to sustainable value, which is the result of the concurrent consideration of three dimensions: economic, social and environmental. In fact, given the priority of the economic dimension -as we refer to business organizations- sustainable value creation will only be achieved if companies will be able to concurrently include in their assessments also social and environmental elements. The model proposed herein, while considering value as a “vector” quantity (i.e. with a direction and a verse of its own), will enrich the traditional perspectives and tools for performance measurement with new elements that introduce a subjective weighting of the different stakeholders that may change according to the considered organization (e.g. subject A can be more interested than subject B in creating value towards environment and less towards society). Essentially, this means that sustainability can be defined as the result of the sum of several values that, in turn, are the result of the sum of different “subjectivities”.

The reasons that have inspired this work derive from the consideration that, currently, there isn't a theoretical/practical approach to sustainable value measurement for business organizations that considers, at the same time, the dimensions of the triple bottom line together with the subjective perspective of decision makers. From these considerations, derives the idea to integrate vSa and System Dynamics in analyzing the issue of sustainable value, whose triple dimension is usually (erroneously) seen in an optic that does not consider the interactions among those three dimensions.

In fact, some of the most commonly used tools are the following:

- The standards of accountability: by targeting business decision makers in the definition and formalization of the actions of government, concern the certification of ethical conduct by business organizations and relate, primarily, to the social dimension.
- The Global Compact: sets out ten principles in four main areas, which are human rights, labour, environment and anti-corruption measures that should be considered in the decision making processes.
- The Social Report is the certification of an ethical point of view that legitimizes the role of an organization as an economic entity that, in pursuing its own interests,
 - should contribute to improving the quality of life of the members of the society in which it is inserted .
- The Environmental Report contains different types of indicators for what concerns environmental management; environment in general; environmental performance;
 - potential impact; environmental effect.
- The Sustainability Report is drawn up according to the guidelines identified by the Global Reporting Initiative (GRI), consists of a set of indicators individually set for each dimension and in a set of guidelines for the reporting and compilation of financial sustainability. It is, so far, the only document that provides a reporting system that meets the triple bottom line.
- Sustainability Balanced Scorecard (Figge, al, 2002): identifies the environmental and social issues that are strategically important for the business organization's business units of reference.
- Sustainable value model (Figge, Hahn, 2004, 2005, 2006): based on the concept of negative externalities, provides a measure of sustainable value calculated according to the environmental cost of the emissions of considered business organizations.

However, these approaches have as their main limitations the fact that they calculate sustainable value in an exclusive efficiency optic, ignoring the dimension of effectiveness, which, by definition, includes a wider (in number and nature) variety of subjects to be considered. These tools, in fact, do not consider the need of business organizations to move to more enriched formulations for the calculation and communication of their processes of sustainable value creation, nor do they take into account the call for the consideration of the subjective perspective that comes from both academic and professional world.

This integration of the subjective perspective within a model for calculating sustainable value will consider vSa as the theoretical framework of reference and System Dynamics as the methodology that allows translating such approach into a simulation model.

Keywords: System Dynamics, Viable Systems Approach

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Group Model Building and Computational Intelligence Tools for Stakeholder Engagement and Deliberative Processes

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Introduction

In this work we present ideas on how group model building (GMB) can be applied successfully to support Stakeholder Engagement (SE) and deliberative processes. In particular, we discuss how tools from System Dynamics (SD) can be used in decision making processes involving citizens to enhance participation and knowledge sharing.

We also discuss how stakeholder engagement can be combined with tools based on computational intelligence to support decision makers in contexts of deliberative processes.

The early days of system dynamics and the rise of group model building

The SD methodology arises at the end of the 50's, as a new approach based on computer simulation for enterprise management and industrial production. Such methodology, which aims at representing all the enterprise functions under a single integrated model, is based on the concept of feedback, borrowed from control engineering and cybernetics. In a brief time, the applications reach all the disciplines and contexts.

One of the strengths of the proposed approach relies on the possibility, through simulation, of verifying a-priori management strategies of intervention: a big gain for the top management to cope with governance issues.

Despite of the good results, SD hasn't gained the hoped popularity in Universities, big Corporations, and Public Administration. Moreover, by analyzing the social impact of the proposed models, it turned out that their role could not be limited to providing definitive answers. In fact, they must provide insights on situations and allow to communicate one's point of view to others in a less ambiguous way with respect to natural language.

For these reasons some new approaches have been proposed:

- a qualitative one based on cause-loop diagrams (CLDs) and on the notion of systemic archetypes;
- one oriented towards serious games, called microworlds or flight simulators within the SD community;
- a third one, named GMB, which aims at the involvement of stakeholders directly in the model building and validation.
- The stakeholder involvement leads to many advantages:
- it improves the model quality, and thus the quality of the governance policies the model will suggest; in fact, following the creation of the model step by step, the stakeholders will feel involved and willing to provide information that is more and more precise, thus improving the quality of data and variables within the model;
- the outputs of the model will likely be accepted by stakeholders without particular doubts or fears since they will be perceived as “their own”, and will be evaluated positively both by the top management and the executive; the strategic changes suggested by the model will then be applied without too much resistance;
- the involvement of the top management may correspond to a form of endorsement of the methodology inside the Corporation or the Public Administration, and it can have a “word of mouth” effect for a further spread in other contexts.

In the past decades the GMB practice has been formalized, and correct procedures have been devised to improve its efficiency and effectiveness. Such practices are mainly related to the modalities of knowledge elicitation, cooperative instruments, engagement strategies, visualization tools, detection of peculiarities of the context, topic and objectives. GMB experiences have been evaluated according to precise criteria/parameters to assess efficiency and effectiveness: the results have been quite promising and useful.

It is also worth remarking that GMB should be very suitable to SE practices of Corporate Social Responsibility (CSR). Since both big corporations and smaller ones are more and more adhering to CSR and SE is an indispensable practice of CSR, SD methodologies will have a great market penetration opportunity.

GMB is also employed to deal with issues related to environmental/territorial conflicts by exploiting the communicative capabilities of the models. In many cases, the qualitative part is enough (Systems Thinking and CLDs). Choosing the variables and building a model together can be a good ground for discussion and a form of mutual understanding and removal of mutual diffidence. This may lead to convergence, sharing, and consensus. Also the reputation of the politician or decision maker that attends or leads the procedure can be affected positively, regarding his/her expertise, involvement, and neutrality. GMB practices for the solution of conflicts have been performed in many countries and for a vast range of contexts and situations. Also these practices for the solution of conflicts have been evaluated by comparing them with traditional approaches, and the obtained results have been very promising.

The extension to deliberative processes

The involvement of citizens in making decisions, either to improve them or making them shared, or as a way to solve environmental/territorial conflicts, or to set up strategic projects, takes on the name of deliberative procedure.

Such practice arises from the needs of (i) giving an answer both to the alleged crisis of representative democracy and the growing apathy of citizens towards participation, and (ii) finding a solution for project and reform proposals blocked by strong antagonism.

A vast range of procedures have been employed to implement this practice, each one as a reply to needs related to both the nature of the problem at hand and the local political structure and culture. To name a few, we mention deliberative polls, citizen juries, planning cells (German version of citizen juries), consensus conferences, focus groups, the French “*débat public*”, and electronic approaches (e-democracy).

As already mentioned, the GMB, like other methodologies based on modeling and simulation, has found a successful application in many cases of environmental/territorial conflicts, so its extension to deliberative procedures should be straightforward, and give them greater efficiency and effectiveness.

Yet, it must be pointed out that there is no trace, in the Political Science literature, of GMB or GMB-like practices for the solution of conflicts.

Computational intelligence tools

From the point of view of the decision-maker (i.e., the Public Administration, or the top management), there is often the need of supporting decisions through software tools that rely on a quantitative approach based on mathematical models and algorithms. In view of implementing efficient solutions to conflicts, in addition to the advantages discussed in the previous sections, SE and GMB appear useful also to improve the meaningfulness and efficacy of decision support systems. In fact, they allow to build a rich and shared knowledge base regarding the elements needed for a successful implementation of modeling and optimization algorithms, like state variables, objective functions, and constraints. However, the complex multi-actor nature of a participative process and the heterogeneity of the available data, mixing real numbers and qualitative data such as survey outputs, together with the need of integrating in the models rather abstract concepts such as “happiness” or “quality of life”, may lead to very high-dimensional and complex optimization problems. This needs ad hoc numerical techniques to be developed, mixing data-driven optimization, learning models and design of experiments to obtain computationally efficient solutions.

Algorithms of learning from data have seen an enormous amount of research in the past years, due to their ability to capture statistically significant relations underlying complex systems using computational models that efficiently exploit available data. Statistical learning tools such as neural networks, support vector machines, Gaussian processes, etc., are nowadays routinely employed also in a wide variety of social contexts. Their coupling with SE outcomes seems very promising. In fact, for example, using such tools, suitable techniques can be developed with the specific purpose of extracting information from the discussion in order to validate the assumptions on the equations resulting from the theoretical analysis and automatically extract cause-effect relationships endowed with statistical significance that integrate and complete the models themselves.

Concerning the computation of optimal decisions, a vast literature on dynamic optimization of systems characterized by a cost function that reflects the objectives of a decision process is available. Multicriteria analysis tools can also be fruitfully employed.

Usually, the variables of the model evolve according to an equation taking into account the state of the system, the input actions and stochastic events. The decisions are generally computed with numerical techniques such as dynamic programming, reinforcement learning, or model predictive control, which rely on iterative procedures involving at each iteration the solution of a simpler problem.

Another possibility is represented by a hybrid approach based on SD and agent-based modeling. The behavioral model of the various actors in the system can be modeled by means of an agent-based approach: in this case, there is a set of independent actors (called agents) which interact with each other, each one with its own characteristics, needs and different reactions to the topic of the SE process, and whose individual behavior contributes to define the collective behavior.

Critics to the presented approaches

The critics to the involvement of stakeholders and citizens in decision-making are numerous and come from several fronts. The most common ones concern the waste of money and time, and the fact that the involvement may slow down strategic operations that are urgent or of collective interest. Other critics argue that these procedures are not effective, mainly because of the irrationality of the participants, which usually prefer personal interests rather than “common good” choices. Other criticisms are related to the fact that the participants can be easily influenced and manipulated, as usually they do not have all the same level for the understanding of the involved issues, especially for the scientific and technological ones. Moreover, it is not always possible to rely on advices from experts that are super partes.

Politicians react to these practices in a contradictory way: usually they use them to get out of some situation of impasse; however, once implemented, they may feel bypassed and tend to go back. Sometimes politicians use these practices to promote themselves and consolidate their power, especially when the outcome of the decision can be easily taken for granted.

There is also a popular belief according to which “a multitude of voices leads to bad decisions” that is against the involvement of stakeholders and citizens in decision-making. However, it can be argued that collective decisions can be, under well-defined conditions, efficient, fair, wise, and stable.

As previously highlighted, the authors believe that the proposed methodologies can bring crucial benefits to SE and decision-making processes, making them efficient and effective.

Categorical imperative: experiment!

The involvement of citizens and stakeholders for decision making and deliberative processes seems growing up fast, and the need of using tools based on modeling and simulation is increasing as well. Thus, it is time to go on with the experimentations in order to achieve significant improvements as to efficiency and effectiveness of these practices. The idea of coupling GMB together with statistical learning and optimization tools has to be pursued in order to exploit the advantages of each approach. The combined use of different methodologies may also give information about the accuracy of a given model, in the sense that similar results obtained with different methodologies enforce the results themselves.

To sum up, tools from nonlinear systems identification and control, SD, agent-based modeling, statistical learning, can be fruitfully joined together in such a way to develop mathematical models that are able to support SE to reach an enlightening picture of situations and facilitate shared decisions. However, it will be necessary also to take into account what has already been achieved with traditional approaches, thus continuing to experiment to find the methods, tools, approaches, and precautions to be taken for each particular situation, and also define the professional profiles of the facilitator and moderator of discussions.

The authors have specific experience in this field, ranging from tools for decision-making (decision support systems) to experiments of GMB in training courses and seminars in high-school, theoretical studies of deliberative processes, experiences as members of the committee of public debates, and moderators in citizens' juries.

All the experiences of the authors have given positive results: they will continue to experiment in this direction within national and international research projects, where the proposed multidisciplinary approach is an add-value.

Keywords: System Dynamics, Group Model Building, Computational Intelligence Tools, Deliberative Processes, Stakeholder Engagement.

Self-Organized Forms: Contingent factor

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Objective

New models of organizational designs – eg, self-organized forms - are being sought out due to combination of business complexity and the rate of change. Self-organized forms are seen as key in driving innovation and creativity, and preempting and managing the fast-changing business landscape.

Choices about organization design represent a powerful strategic lever available to management; it brings coherence between organizational goals, patterns of division of labor, inter-unit coordination and people (Galbraith, 1977). Through scores of research, we know that environment and internal fit considerations – technology, industry, employee population, size, customer, geography spread – have a powerful say on design choices. In this paper, we investigate if industry typologies can be contingent factor for evolution of self-organized forms.

Research question

Self-organizing is a process whereby a number of individual constituents spontaneously come together and cooperate in a coordinated way while at the same time sharing common behaviors (Stacey, 1995). The system spontaneously gets increasingly more organized under its own dynamics, as outcome of interdependencies among autonomous constituents following their own set of rules (Anderson, 1999). As constituents, partially connected to one another and not fully, acts on local information, feedback is generated, which in turn introduces nonlinearities in dynamics of the system leading to development of spontaneous configuration that affect the system nontrivially and causes emergence (ibid). System structure often appears without explicit pressure or involvement from outside the system, resulting from the interactions among constituents, usually independent of their physical nature, as well as through co-evolving with the environment (Morel, Ramanujam, 1999).

The challenge of organizational design, based on contingency theory, is to select appropriate pattern of internally consistent structure and process that matches set of contingencies facing the firm (Van de Ven, Drazin, 1985). Organization whose internal features best fit the demands of their environment or other conditions in which they function will be best adapted to survive and sustain. These could be in form of organization's goals, environment, technology, size and culture. Contingency theory remains “the dominant approach to organization design” (Lawrence, 1993), and is considered as “only really empirically established and testable theory in the study of organizations” (Hinings, 2003). In present study, we examine selection of organization structure in response to specific conditions that organization faces in form of knowledge required to transform raw material into products and services from two dimensions – task variability –

number of exceptions individuals encounter in their work, and problem analyzability – type of search procedures employees follow in responding to exceptions.

Discussion

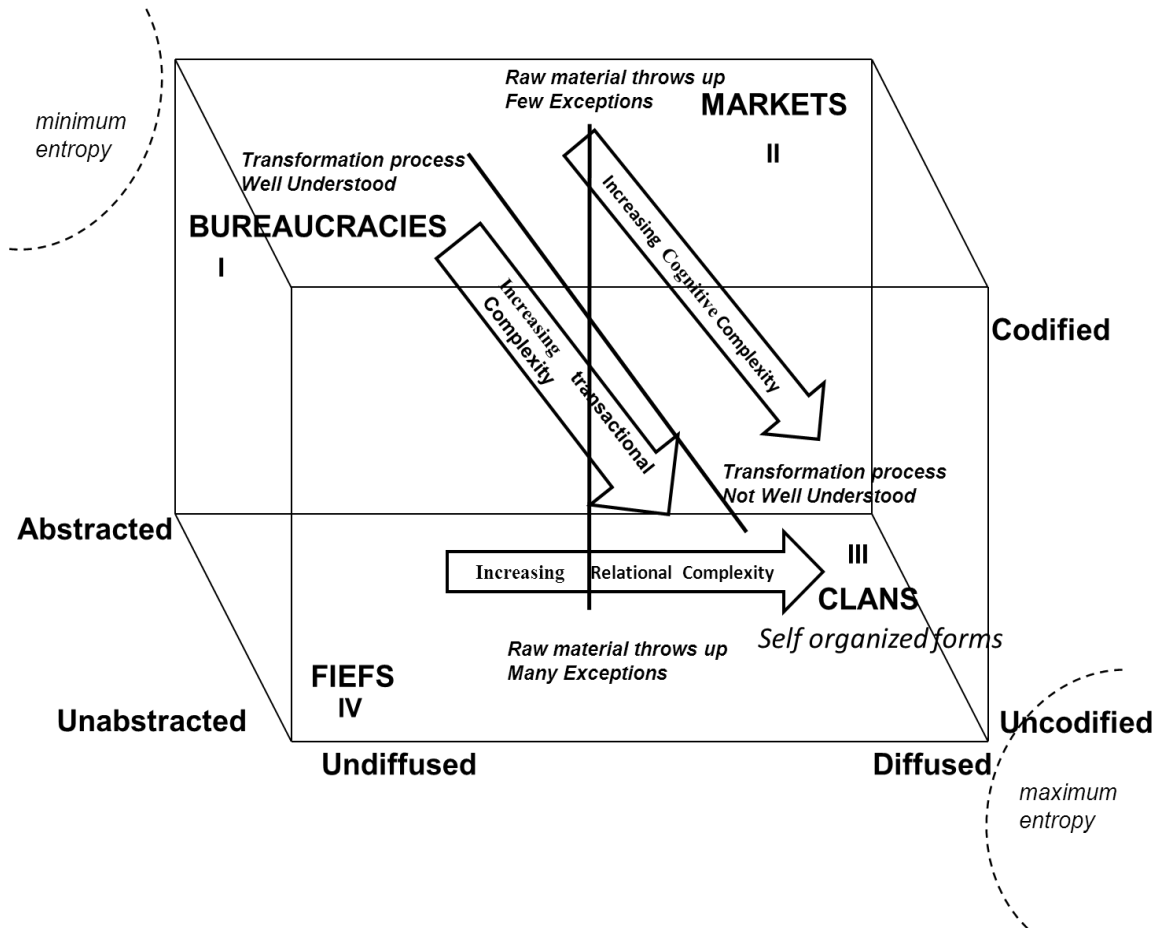
Contingency factors in Information (I) space: The contingency factors of task complexity and problem analyzability can be studied against the framework that studies transactional complexity that arises due to “the processing and sharing of data (that) are the constitutive activities” making up an organization’s social system (Boisot, Child, 1999). In a three dimensional Information (I) space, distinct organizational arrangements emerges based on diffusion pattern concomitant on ability to codify (process of capturing knowledge in succinct form of a code), and abstract (extending these codes to more categories of phenomena and thus generalizing application) knowledge; these being distinct strategies for economizing on data processing effort and are mutually reinforcing (ibid). Well codified and abstracted data can be understood, applied and distributed easily; conversely data that is highly contextual; will also require more interactions. This give rise to transactional complexity as interplay of cognitive complexity that focuses on “content of information flow between agents”, and relational complexity that is “structure of the interactions that such flow allows among agents” (ibid); a low degree of cognitive complexity allows one to handle a higher degree of relational complexity and vice versa; but increasing levels of both leads to a greater transactional complexity.

The raw materials which throw up few exceptions are akin to codified data, and number of exceptions encountered in dealing with them is minimal. Conversely, raw material whose nature is not very well understood has issues around its stability and variability, as a result of which constant adjustment is needed when dealing with it. Thus, such raw materials throw up exceptional situations, and organization cannot seek to standardize the same. Next come the transformation process involved in changing the raw material into services and products. The number of exceptional cases encountered could be perceived across a scale ranging from familiar to unfamiliar. The first type of search could be conducted on a logical and analytical basis, because, the knowledge of the search process is abstracted. Conversely, search process may involve solving problem that is vaguely and poorly conceptualized so as to make it almost unanalyzable. The equivalence (Boisot, Child, 1999) of Perrow’s task variability and problem analyzability against diffusion patterns resulting from various levels of codification and abstraction of knowledge is given in Figure 1.

It can be seen that quadrant III reflects those organizations where raw material throws up many exceptions and transformation process related to it (in converting to product and services) is not well understood. Information needed to manage both task variability and problem analyzability is diffused across the system, leading to significant number of interactions between constituents of the system. This means that both cognitive and relational complexity is comparatively higher in this quadrant, compared to any other. Relationships between constituents are ‘rich’, interaction is not trivial, as no single person (or a handful) has access to entire range of information to make sense of raw material and transformation process. This is reflected in the density of social interactions, which is significant, both by way of speed and frequency of interaction, reflecting the time and effort required for transactionally relevant knowledge to flow. Professional norms and values that regulate behavior in the system are not hierarchically imposed, rather they evolve through “a process of face to face negotiations among peers” with interpersonal power more evenly distributed (Boisot, 1998). Interdependence of groups is higher. Nature of knowledge involved is such that neither can rich data be codified or abstracted well, nor can the richness of

interactions be substituted. Such organizational arrangement in quadrant III in the I space is labeled as ‘clan’ (Boisot, 1998).

Figure 1-Equivalence of Perrow’s framework and Boisot’s Information (I) space



Source: Boisot, Child, 1999

Note: The continuum of problem analyzability across transformation process is shown through a slanting line to illustrate abstracted-unabstracted dimension

Firms that grapple with information asymmetry around raw material and transformation process “reflect and exploit peculiarities of their environment” (Starbuck, 1992), and gravitate towards self-organizing way of working on its own to cope up. Spontaneous configurations will affect the system, and add on to further organization and complexity in response to both internal interactions as well as addressing and engaging in environment in which they operate (Teecce, 2003). Such organizational form “operates far from equilibrium where they are driven by negative and positive feedback to paradoxical states of stability and instability, predictability and unpredictability (Stacey, 1995). With reference to Figure 1, such firms cannot climb up the I space, towards ‘bureaucratic’ forms (where both cognitive and relational complexity is less due to high codification and abstraction of data) and reduce cognitive complexity, as they deal with knowledge much of which cannot be routinized. Nor can they climb towards ‘market’ forms (where cognitive complexity is low leading to easy dispersion of data, and consequent high

relational complexity) as much of the required knowledge cannot be economically made available to many, to allow for easy dispersion.

This 'clan' forms in I space has maximum entropy, that is, energy needed to maintain self-organized form will be immense. This is so as the forms operate far from equilibrium where dynamics are both stable and non-stable at the same time. Such behavior is evinced through non-hierarchical coordination mechanism that is regulated through shared frame of reference, called (social) schema (Gell-Mann, 1994) comprising of vision, values, norms and guiding principles. If the pattern of connectivity is rich enough, feedback structures results in numerous open-ended choices along which the system may evolve, leading to emergent new forms.

Organizations which deal with raw materials and transformation processes that are not easily amenable to codification and abstraction will find that investing in ever sophisticated information system may still not solve the context-structure-performance issue. Rather such companies may work around to change its organizing mechanism to ally with self-organized forms and learn to manage challenges posed. On the other hand, those organizations which are not very amenable to self-organization, need to work hard to break out of the stable environment and limited diffusion (that is, a settled way of doing things) to encourage the new form. But, as 'clan' form has maximum entropy, such 'artificial' self-organized forms will requires huge infusion of energy from outside, by way of significant time and attention by, say, the leadership team or the CEO. But this also means that as soon as the external impetus is lost, the system settles down to its formal stable state. Pascale et al (2000) gives many such examples from companies, notably Sears, Shell, etc, where as soon as the leadership changed, the emphasis on self-organizing teams got lost.

Boisot and Child (1999) have argued that several contingencies may be relevant in choosing the strategic approach that the company deems correct to operate in various area of the I space, eg, the size of the organization, severity of its environment, resource ability to enact that environment, rapid technological change. Through our study, we add two more contingency factors, namely task variability and problem analyzability.

Future research agenda

The necessity for companies to try out new ways of organizing is because of "shift from a physical economy, which was served well by principles of bureaucracy, to an information-intensive economy, whose structural implications are not yet clear" (Child, & Mcgrath, 2001). Self-organized forms are being celebrated as chosen way to get ahead. However, present study posits that such forms will be contingent on particular context – raw materials and transformation processes are not easily amenable to codification and abstraction. Further research may be conducted in organizations that have already adopted self-organized mode of working and examine if contingency factors as discussed are appropriate.

Keywords: *Self-organized forms, Contingency factors in Information, Organizational design*

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Modeling the effect of information feedback for the management of the Ebola crisis

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Ebola virus causes a fatal haemorrhagic fever. It was first reported in 1976, in two simultaneous outbreaks, one in Nzara, Sudan, and the other in Yambuku, Democratic Republic of Congo, near the Ebola River, from which the disease takes its name. Since 1976 only 19 outbreaks have been reported in Africa. But in March 2014, the largest and most complex Ebola outbreak started. In the first time, it involved Guinea and then it started spreading across the land borders to Sierra Leone and Liberia and by air to Nigeria and by land to Senegal. Up to September 2014 in West Africa 5353 cases were reported with 2622 deaths. A few suspected cases have been reported out of Africa such as Italy, Canada and Spain. The Ebola epidemic has the ability to alter human history, just as was the case for HIV/AIDS pandemic. To face the Ebola emergency, the UN has declared it as a threat to world peace and security. For WHO, Ebola was a Public Health Emergency of International Concern. However, the Ebola Crisis is an ongoing and complex problem of International Community where many actors as well as factors act with extreme freedom of movement. The aim of this study is to create a valid System Dynamic (SD) model to assess and manage the Ebola Crisis.

At the beginning a casual loop diagram is developed. The kernel represents the progression of people through the dynamic of the Ebola disease system. The population is split in six classes. The first class is the Susceptible (S). In this class there are people who become exposed in a point of time through contact with Infectious people. The second class is Exposed (E), in which there are infected people but not yet infectious, this period is also called as incubation time. After this period, people are capable of spreading infection to other people and suffering clinical signs, becoming Infectious (I). A proportional part of Infectious patients might be Hospitalized (H), Hospitalized patients might continue to spread the Ebola virus. Infectious and Hospitalized patients might die and infected other people during funeral service (F). The last class is Removed (R). In this class there are survived or buried people, who should not spread the infectious anymore. This structure is similar to the epidemiological SEIR model, with two classes (H and F) added.

The model simulates how the Ebola virus can be transmitted among non African countries.

The presence of animal reservoirs of the Ebola virus is hypothesized. So far, animal reservoirs of this virus eludes scientists. But reservoirs are able to suggest strategies to prevent or mitigate outbreak, so interactions with them is suspected and added into the model. In the model, fruit bat reservoir effects are hypothesized.

The social and economic aspect of the Ebola Crisis is also included. The human impacts, that could have played a role on the environment, are simulated. Collateral effects (such as food security, economic growth) are also simulated.

The model is fitted using values from published data.

To evaluate the impact of the control measures on the outbreak, scenario analysis is performed. Hypothetical vaccine and pharmaceutical intervention is also modelled and examined.

The Ebola Crisis has become a threat for the whole world. The Ebola Crisis has been dealt with managed by a mere additive linear and reduction approach. This approach is unsuitable to understand the inextricable relationship between causes and effects, which can change with time. On the other hand, System Dynamic model, integrating non linear relationships, feedback structures over time as well as qualitative and quantitative data, is able to build the most realistic and possible representation of the reality, offering the explanation and knowledge of the Ebola Crisis. The proposal model shows the dynamic interdependency among key factors that govern the Ebola Crisis and describes archetypes which allow us to identify the potential intervention point where preventive and mitigating measures could be effectively applied.

Based on this thinking, a SD model may represent a valid and useful device to depict and coordinate the Ebola Crisis.

Keywords: *Ebola crisis, System Dynamics*

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System dynamics and mathematical method application for the strategic foresight

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In a rapidly changing environment, it becomes extremely important to anticipate future changes and developments. A key element of strategic action and policy-making is now to recognise the possibility of alternative futures, and to implement strategy that makes the best alternative possible. The policy making in this era also needs to be based on systematically gathered information with the active participation of all the stakeholders. All this refers to active planning method named strategic foresight. However, environment makes the business run very sophisticated, so forecasting with strategic foresight method still brings uncertainty about selection of the optimal scenario. That is why dynamic and multicausal systems are typical attributes to describe the multi version storylines of the future performance and to set a variables trends. To decrease a risk of a wrong scenario selection we employ the mathematical procedure of maximization of effectiveness degree and the minimization of ineffectiveness degree as a criteria of scenario portfolio choice.

In the paper the empirical study will be done. It includes, for the first presentation in general with reference to literature usefulness of foresight method with scenario techniques details. Then, in the next step on the basis of the business example, system dynamics model will be simulated. Having this done the computation base will be prepared for the next step of analysis. Finally, author moves to selection procedure. Markowitz rule is the most popular criterion of choice. It is used for determining the intuitionistic set of effective scenarios as a future developments. The expected result is to find 3 or 4 scenarios respectively to applied criterion.

The aim of this study is to present the way of application dynamic and mathematical tools into strategic foresight work. Doing foresight analysis for planning managers often to face problems of right selection. To avoid this troubles it is worth to involve tools which give precise solution to strategic planning problem.

Keywords: *System Dynamics; Mathematical method; Strategic foresight*

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Traps and Fallacies in Polish Health System. Towards Systemic Diagnosis and Prognosis

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Proposed paper deals with the still unsolved problems of the national health system in Poland (NHS, thereafter). As many other countries, Poland has been facing increasing difficulties in providing Poles with an efficient and accountable health service. Queues for medical specialists have reached years, many times threatening potential patients lives. Cost effectiveness have went nowhere, so that the present problem is „how much we need in order to make ends meet” instead of „what people need”. From the beginning Polish administration (government) has been faulting – far away from understanding the internal logic of any national health system. Instead of calculating the amount of money that should be injected into the system (typical politicians' attitude in any country) the attention should be reverted to discovering a generative (systemic) structure adjacent to health systems. That has never been done in many countries, Poland being one of them.

The author has been involved in the initiative to analyze Polish NHS for 2 years so far. Being the „green initiative”, with no official support, we arrived at several important conclusions that could possibly mark a new path for the NHS re-engineering. First of all, it has never been marked the Attraction Principle as a factor influencing the NHS condition. It is simple: the more attractive (for users) the NHS, more demand for its services, disregarding real needs for using it. If we pour more money in it, more demand will be created for.

The paper attempts to presents the generative part of the problem. Using General System Theory and Systems Dynamics methodology the mental model of the Polish NHS is presented, preceded by the display of different solution implemented by various recent political option in the country (20 years perspective). First of all, the problem has a clear and easy to understand „stock-and-flow” logic that leads to more sublime conclusions. One of them is the statement that „the better Polish NHS, more difficult the situation of Polish NHS users” . This rule, arguably, does not work forever. Its behavior pattern is not new and reminds those of technology diffusions, epidemics, and others.

The paper presents mental model of the Polish NHS as the source of further problems. No attention is drawn to political option or implications, an emphasis is put on discovering internal sources of the NHS in Poland dynamics.

The paper is meant to be the 1st part of a broader entity. If works go well, it will be possible to present the simulation of the Polish NHS under actual conditions in the B.S.Lab. International Symposium in 2016. That part will be heavily based on computer simulation. The system dynamics models a system as a series of stocks and flows, in which the state changes are continuous. A system dynamics model views “entities” as a continuous quantity, rather like a

fluid, flowing through a system of reservoirs or tanks connected by pipes. The rates of flow are controlled by valves, and so the time spent in each reservoir is modeled by fixing the rates of inflow and outflow. Although the state changes are regarded as continuous, the underlying equations used to solve the model are difference equations (usually solved by numerical integration) which discretise time

using a time-slicing approach. All these is included in the System Dynamics computer simulation methodology and technology, including the software.

Keywords: System Dynamics, Polish Health System

Designing an Integrated Methodological Framework to support Regulation Impact Analysis: a combined System Dynamics – Network Science – Control Theory approach

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It seems that recently the metaphor of the world as a global giant network is producing a collective cognitive shift, which has replaced both the old perceptual categories of “continuum” and “organic” with a single one: “networked”. The new field of “Network Science” flourished in the last decade, bringing out new theories aimed at explaining, predicting and taking control of network behavior and evolution. The US National Research Council in 2006 (NRC, 2006) defined Network Science (NS) a “the study of network representations of physical, biological, and social phenomena, leading to predictive models of these phenomena”. US NRC also states that “network science is distinct from both network technology and network research: it is characterized by the “discovery mode”, which is typical of science, rather than the “invention mode” of technology and engineering”. NS paradigm is quite different from the one underlying preceding work on networks. NS focuses on the properties of real-world networks, tackling empirical as well as theoretical questions. Real world networks are not static, but evolve in time according to various dynamical rules and so NS aims at understanding networks not just as topological objects, but also as a framework upon which we can build and govern distributed dynamical socio-technical systems.

A network representation suits many important and practical applications, including the Internet and communication systems, manufacturing systems and supply chains, national (critical) infrastructures, military systems, global markets, and social organizations and therefore there is a significant interest in whether there exist universal properties of networks that may be discovered and then applied to understand and manage them.

Common questions in this context are:

- how large-scale properties (performance, reliability, resilience but also less clear notions like flexibility, adaptability, and sustainability) in complex systems depend on the structural characteristics of the underlying network.
- which are the universal laws that govern the formation and the evolution of complex networks, with a particular emphasis on self-organization (i.e., coordination from the “bottom up”) and the emergence of system features.

Other aspects of practical interest are those pertaining the vulnerabilities and fragilities inherent in complex networks to avoid “rare, yet catastrophic” events, like the disruption of critical infrastructures. Over the last decade, many researchers have attained important results on how one should design, organize, build, and manage complex networks and some interesting “impossibility” results, but are dispersed across a huge number of papers and books and therefore sometimes those approaching this field for the first time try to reinvent the wheel.

This is particularly true for those trying to design organizations, the policy makers or the managers, which are those who could and should benefit most from the outcomes of this discipline when applied for example to model-based governance (Armenia et al., 2014).

The real issue here, like in any complex environment or discipline is the passage from data (i.e. the experimental results) to meaningful information (the researchers usually attain this), then on to knowledge (shared, contextualized and actionable information) and possibly the wisdom level, where the knowledge becomes an asset (Schwaninger, 2008). We can go the whole way only through a collective process of construction, diffusion and enrichment of well-defined shared models - possibly visual ones.

In this context, the availability of a sound and well-designed knowledge management system would be of great help to push forward the research in this field – an exemplary case here is the Gene Ontology. Such a tool would also support decision makers and managers, people that generally do not care about the mathematics and the details underlying any model; instead, they are interested in leveraging visual analytics and qualitative results to perform “what-if” scenario analysis and to take decisions. As an example, such a system could be the silver bullet for regulatory agencies during the policy design process, letting them evaluate the impact of actual/future regulation.

Therefore, our research question is whether we can enrich the results and the information on Complex Networks and their behavior stemming from NS, by complementing the tools available for the structural exploration of complex networks, so to ultimately build an actionable and practical Integrated Modeling & Simulation Environment (IMSE) for the NS practitioners. This would be a tool based on a new integrated methodological framework (IMF), allowing to design policies and to test their effects and effectiveness in a virtual environment, based on Dynamic Complex Networks.

Relying on our experience, it should combine methods/tools for Visual Analytics (VA), Social Network Analysis (SNA) and Visualization, Causal Loop Diagrams (CLD) and Stocks & Flows Diagrams (SFD), Unified Modeling Language (UML) and derivatives, Agent Based Modeling (ABM), Pinning Control Theory (PCT) and Knowledge Representation (KR) formalisms. Leveraging the different views, we can obtain an effective Integrated Methodological Framework (IMF) for Policy Design and Evaluation in a complex networked environment, also known as Regulation Impact Analysis (RIA).

Based on these objectives and considerations, let us tackle the architectural issues that we can face during the development of such an IMF.

The most important views in this framework are the complementary representations of the network under study, namely visual analytics plus some Causal Loop Diagrams, which are in this case used to summarize the functional effects of the control parameters on the network dynamics. Such views can help situational awareness about the evolution of the state of the system.

CLDs are a part of System Dynamics (SD), an established paradigm to understand how the structure of complex systems creates their behavior. SD is a computer-aided approach to policy analysis and design. It applies to dynamic problems arising in complex and dynamic systems

characterized by interdependence, mutual interaction, information feedback, and circular causality and it uses specific diagramming tools to capture the structure and behavior of the systems, namely causal loop diagrams and stocks and flows diagrams. Since these diagrams rely on systems of differential or finite difference equations, whose solutions feed the visual analytics diagrams, they allow us to achieve a highly reliable view of the dynamic evolution of the system. A number of mature Integrated Modeling and Simulation Environments, which integrate SD and ABM (both open source and/or commercial), are currently available on the market and they almost all already synergistically use the cited methods/approaches to develop models of complex dynamical systems. Latest KR formalisms are graph based and designed to represent large amounts of “relational”¹ data, gathered from the web. Among the most problematic integration issues here, but in perspective also the most interesting, is the one between Causal Loop Diagrams and Network Visualization views. These are complementary views of the same system, but while the former is a functional view, the latter is concerned with a topological view² and we still lack a complete theoretical framework for a seamless passage between the two. The integration of the two views is properly the mission of our IMF and it happens by mean of a knowledge base that act as a bridge between the two points of view, integrating the topological view with semantic information and passing this augmented view to the routines that perform the structural and functional analysis.

For the sake of completeness and clarity, it is important to keep in mind that the state space of a networked system with a fixed number of nodes is finite under rather soft assumptions (finite number of actions and finite number of different kind of links). In a finite state-space, suprema and infima do exist, nevertheless in optimization problems we face the combinatorial explosion of power sets and therefore, we need to adopt criteria in the design process rather than delving into calculations, and when needed, we must adopt some techniques to limit the search horizon.

Let us try now to integrate the SD³ and NS⁴ paradigms from a theoretical perspective.

First, let us assume that the evolution in time of a network is a process that takes place over a system formed by individuals and by all the potential relations between these individuals. Through this approach the problem is which relations (links) are activated and when; thus it is no longer a problem of network formation, but of network evolution, This evolution depends on the pressure that individuals feel, be them guided by chance, rules or by some decision mechanism. Based on this observation we can handle with the same approach the concepts of network formation, evolution and dissolution.

¹ Here “relational” refers to data that represent relations and then “links” between elements (resources, nodes).

² Some authors in the late ‘80s warned the SD community against the risks stemming from “paradigms incommensurability” between and the structural approach of SNA the functionalist approach of SD. While the former is described by an adjacency matrix between objects of the system (therefore inherently linear), the latter describes the actions through a Jordan canonical form or diagonal matrix of eigenvalues, i.e. something that serves to represent a system of differential equations. NS has tackled the network dynamics, thus linking the structural patterns with network behavior through a (possibly dynamic) transition matrix.

³ System Dynamics (SD) is both a perspective and a set of conceptual tools aimed at enabling the decision makers understanding the structure and the dynamics of complex systems. Moreover, SD through a set of rigorous modeling methods enables the researchers to build formal computer simulations of complex systems and use them to design more effective policies and organizations.

⁴ Network Science (NS) is an interdisciplinary view of complex network systems focused on the descriptive exploration of the structural characteristics of networked systems based on graph-theoretic properties. Network Science emphasizes the prevalence of universal statistical features, such as power laws, in the measurement, modeling, and assessment of network structure and behavior (Albert and Barabasi 2002).

Second, networks do not grow only by chance, but also by strategic choices of the agents and when we consider dynamic models or Agent Based simulations, we find that the outcomes of the evolution of the network depend critically on some structural parameters, which in turn are affected by the outcomes, therefore configuring a feedback loop (one feed-back and one feed-forward).

Game Theory and Agent Based Models have been the two classical approaches to model the structural dynamics of the network formation and decay, while the SD approach leverages compartmental models based on stocks (compartments) and flows. In the last ten years, research has made giant leaps forward in the exploration of the complex interactions between structural dynamics and the phenomena mediated by networks, even if we do not have a unifying theory yet.

One of the challenges in developing an Integrated Modeling Framework (IMF) for policy design is the definition of well-defined measures of overall societal welfare, modeling explicitly which are the costs and the benefits that arise from various networks in order to make a prediction of the relation between the individual incentives and the network outcomes (Jackson, 2008). This is currently an open field of research, since many critical societal challenges rely on our ability to design policies and incentives that can overcome the “tragedy of the commons” (Senge, 1990). If we compare the topological characteristics of networks based on individual incentives and on those that maximize overall societal welfare, we find that generally they differ even when they have the same degree of distribution. Through a system dynamics model, we can ask ourselves if we could rewire the network towards the society’s interest, subsidizing individuals to maintain relationships that else they would drop. The entity of these transfers depends on the strength and the resilience of the tension between individual and collective incentives and, under certain conditions, it is impossible to maintain socially efficient networks under reasonable restrictions on transfers. A deeper insight into the need for establishing some trade-off between Efficiency and Stability (Jackson, 2001) and the availability of exemplary cases for the impossibility results would be of great value for policy makers and organizational network designers.

Another important question is why networks take a particular form, rather than just how they do. Here the concurrent application of SD and NS could bring some results, since the qualitative analysis of models that encompass all the causal relations between the relevant variables can help us in the strategic analysis.

Once the SD and NS frameworks are reconciled, we can apply SD as a tool to explore and represent through CLDs the (complex) dependencies of the network evolutionary dynamics by some parameters, by the type of the nodes (their attributes) and by the structural characteristics of the network. This is the first step towards an “engineering” approach to complex systems, which should follow a paradigm that differs both from the exploratory / deductive process typical of NS and from the “hard” paradigm of the classical forward engineering. In addition, the methodologies are completely different and the objectives of organizational design are shifting from traditional notions (such as performance, function, and efficiency) to “opaque” notions such as resilience, flexibility, viability, sustainability, and survivability.

In order to proceed in the reverse direction from the objectives to right policies we must bring into the game at least another two essential components. The first one is the Control Theory as applied to complex networks of autonomous agents; we will refer to this theory as “Pinning Control” (PC) (Su, Wang, 2013) since controlling only a fraction of agents is sufficient to control the evolution of the whole system under loose conditions. This theory will advise about the

alternative control patterns that we can adopt, under which conditions they are effective and their pro and cons.

Once we have a control strategy we need a model of social influence on behavior, since we must find how to put the strategy at work. The latest results on social influence point at the importance of gamification, as a framework that leverages reward and pleasure to lower the acceptance threshold for the adoption of a new opinion or of a new trait in our behavior. Reward and pleasure are the real drivers of societal change and they are two concepts closely related to the so-called network effect, since in most occasion reward is the product of peer's appreciation. Reward and pleasure can be actioned through a series of strategies leveraging elementary actions not necessarily performed by humans, which opens a completely new field of research.

Keywords: *Regulation Impact Analysis, System Dynamics, Network Science, Control Theory*

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**ORGANISATIONAL CHANGE AND KNOWLEDGE
MANAGEMENT**

**“...these workshops are like Sunday’s church
visit - but then it is Monday again...”
A systemic view on interaction and decision
making**

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This paper presents detailed insights into the challenges of the organizational renewal in an engineering company. Our action research is based on a single case study and focusses on one of the key challenges of organizational renewal: to put talk (words, communication, discussion) into action (doing, practice, acting). The paper investigates and discusses the talk versus action gap from a systemic communication theory perspective and puts forward two main arguments: First, it shows how the face-to-face communication differs from but is linked to the decision making process in organization. Second, it reveals that beside the often considered aspects of information and utterance the aspect of understanding in the definition of communication adds an impact-orientated take on communication and a broader understanding of the talk versus action gap. Literature shows three different streams, that capture the differences between talk and action. First, Brunsson (2003) conceptualizes the difference between talk, decision, and action to describe the gap between these forms of operations as a strategy of political organizations to handle different demands of their environment. By talking, deciding, and acting inconsistently political organizations can satisfy inconsistent demands which might lead to positive and negative effects of an organized hypocrisy (e. g., Krasner, 1999; Lipson, 2007; Weaver, 2008). A second stream of literature is linked to the first one and explores the inconsistency between talk and action of organizations in their corporate social responsibility (CSR). The literature analyzes the difference of talk and action in this particular area as a highly functional strategy of organizations and a problem for its environment (e.g., Christensen, Morsing, Thyssen, 2013; Fernando, 2010). The third stream views the gap rather as a weakness and argues that organizations try not to fail in doing what they talk and decide (e. g., Hardy, Palmer & Phillips, 2000; Heracleous, Barrett, 2001; McClellan, 2011). Putting talk into action in this understanding is an organizational challenge and not a strategy.

Following this understanding of the talk versus action gap McClellan (2011) criticizes that “the relationship between communication and change is often oversimplified” and that communication “from this perspective, is typically seen as a tool to convey ideas from one person, or group, to another, persuade others that change is necessary for the organization, or manage the task of implementing change” (McClellan, 2011). Such a perspective recommends curing the gap between talk and action (and decision) by talking more precisely as if talking more correctly would lead to the right actions. However, more scholars move away from viewing communication as a tool, talk as means and action as end (Hardy, Palmer, Phillips, 2000; Heracleous, Barrett, 2001; Schwarz, Watson, Callan, 2011).

Following this call for a non-trivial understanding of the talk versus action gap we offer a perspective which takes into account the challenge of putting talk into action by comprehending communication as constitutive for organizations (CCO) (Blaschke, Schoeneborn, Seidl, 2012; Cooren, 2004; McPhee, Iverson, 2009; Taylor, 2009). In particular we take Luhmann’s Theory of Social Systems which argues that communication only “happens when information that has been uttered is understood” (Luhmann, 2006). From this perspective communication has potentially an enormous impact but is very fragile at the same time because understanding determines if communication and organizing (Weick, 1979) continues and how organizations develop through communication.

Both, the impact and the fragility of communication is something we explore in a change process in an engineering company in our action research. The communicated management decisions did not succeed until the change communication was refocused on the understanding of the change in general and mutual feedback and reflection in particular within the change process. One basic element in this approach was the strong linkage between the face-to-face interaction, and the decision communications embedded in the change program of the company. This linkage was supported by the introduction of a company-wide IT-based feedback platform (resonance monitor) and combined with action learning oriented meetings (pit stops). Therefore, our research question is: How can feedback and reflection foster the impact of management decision in the context of organizational renewal? To answer the research question, we will highlight our theoretical perspective by introducing Luhmann’s Theory of Social Systems (Luhmann, 1995; Luhmann, 2011). After that, we present the empirical context and action research as our method. Then, we describe our action research with the engineering company followed by our findings. We conclude with a short discussion and the limitations of our research.

Our findings contribute first to the debate about the challenge of putting talk into action as scholars discuss it primarily in the context of organizational renewal (Hardy, Palmer, Phillips, 2000; Heracleous, Barrett, 2001; McClellan, 2011). Our stance reflects the nonlinear perspective and the complexity in organizational change processes incorporates both the possible fragility and impact of communication. Central to our argument is the inclusion of the element of understanding (beside information and utterance) into the concept of communication and the comprehension of decision as the particular form of organizational communication (Luhmann, 1984; Luhmann, 2011). From this perspective, we observe organizations as organizing, i.e. as recursive system formation of communications that build a network of communications, which includes decisions, actions, and observations - but always by uttering and understanding information. If we embrace a non-linear and even ambivalent relation of talk, decision and action it enables openness to the empirical phenomenon.

Second, in our research we present repeatedly examples, where the separation of talk and decision was highly functional although it produced obvious inconsistencies and personal loads.

At the engineering company the personal compensation of structural deficits by members of the organization could often times be explained by the gap between talk and action. Yet, this inconsistency made up room for manoeuvre for the individual member of the organization and produced as well a heroic image if one could rescue a project which had otherwise gone down. Findings like these bring together the two streams of literature that discuss the problematic and challenge of the talk and action gap (Hardy, Palmer, Phillips, 2000; Heracleous, Barrett, 2001; McClellan, 2011) and the functionality of its inconsistency (Christensen, Morsing, Thyssen, 2013; Fernando, 2010).

Third, our findings might contribute to a different ('post-heroic') perspective on management and leadership in the research and the practice of organizational renewal. Models like the garbage can model (Cohen, March), Lindblom's approach of the "Muddling thorough" (1959), Weick's 'loosely coupled systems' (1976) or Brunsson's 'organization of hypocrisy' flag the limitations of coherent decision making and question the assumptions of choice, intentionality and rationality. Our findings and observations ("...these workshops are like the attendance to church - but then it is Monday again...") support the doubts and limitations expressed by these concepts and reflect the reservation practitioners express when experiencing the gap between decisions and actions.

Fourth, we provide additional evidence with respect to the source and process of leadership and leadership legitimacy (Tourish, 2014) viewing leadership rather as a co-creation process.

As we present in our action research, the top management was surprised about the paradox that decisions only become decision if they become premises for further decisions (Luhmann, 2011). This highlights an important aspect on leadership and its legitimacy: Only if decisions succeed in being connected premises for further decisions, leadership, its legitimacy, leaders and led ones emerge. From this perspective, leadership legitimacy is the ability of leadership to influence organizational decision premises that permanently has to create and recreate itself through practice.

Finally, the concept of organization-wide feedback through a resonance monitor in combination with reflection workshops suggest interesting insights about the relation of face-to-face interaction to organizational communication in the form of decision making (Luhmann, 2011, Kieserling, 1999). Introducing an organization-wide feedback on the change initiative in line with reflection workshops revealed on the one hand side the difference between talk and action or decision-making and interaction. On the other side it becomes obvious that the self-referential character of decision-making in organizations differs significantly from a simple cognitive selection, which in turn sheds a light on why decision-making is often prone to breakdown. Overall the face-to-face-interaction fosters reflection since the co-presence of the interactors comprises verbal and non-verbal communication and enables quick questioning and understanding (Kieserling, 1999). That was the reason to conceptualize the pit stops as face-to-face interaction. The enhanced understanding enables the connectivity of decisions and a bridge between talk and decision. The findings might help to bridge the different schools understanding 'communication constituting organisations' CCO perspective (Schoeneborn, Blaschke, Cooren, McPhee, 2014). Our communicative approach of action research is inter alia driven by prepositions about face-to-face interaction and organizational communication that are based on the Montreal school (Cooren, 2004) and a systemtheoretical view on face-to-face interaction (Kieserling, 1999). But mainly, it is influenced by the common idea of all three schools that communication constitutes organization.

Keywords: *Organisational change, Communication, Systems theory, Reflection, Talk and action.*

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What drives service productivity measurement? Evidence from a mixed method study

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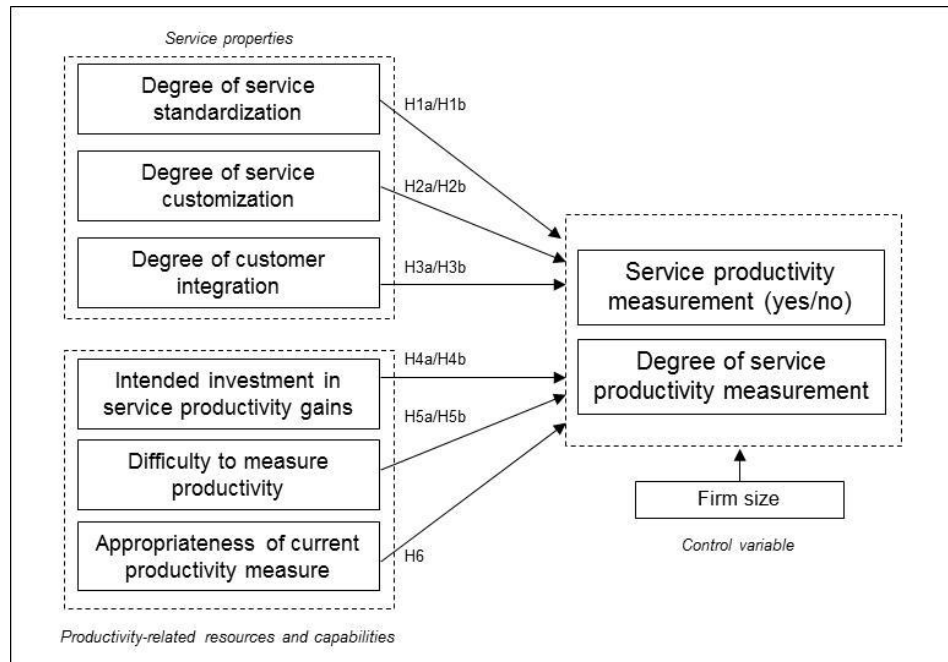
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Increasingly competitive service markets force firms to look for ways to increase the operational efficiency of service delivery. At both conceptual and empirical levels, growing management and marketing literature centers on service productivity, generally defined as units of output (processed customers, sales) divided by units of input (labor hours). However, productivity measurement continues to pose a challenge for service firms, primarily because of the difficulty of accurately quantifying service inputs and outputs. One reason for this relative lack of measurement especially in people-processing services may be the complexity involved in measuring service productivity, particularly the difficulty of modeling the trade-off between changes in productivity (increasing customer throughput) and key service outcomes such as satisfaction, as well as the difficulty of aligning productivity measures with varying levels of customer integration. Beyond the trade-off, little is known about the antecedents of service firms' decisions to measure productivity. This is surprising given that performance measurement continues to be an important topic in management practice and research. Also, in many industries, efficient service delivery processes are built into business models. Against this background, the authors explore why few service firms have adequate service productivity measurement (SPM) systems in place.

By combining field interviews and literature-based insights, the authors develop a conceptual model of multiple antecedents of SPM in business-to-business service firms (Figure 1).

Figure 1- Conceptual model



To develop a conceptualization that reflects the interactional nature (between customer and firm) of service delivery and narrow the focus onto the key factors required for a model, the authors used an inductive-deductive approach. Inductive reasoning is more exploratory in nature (i.e., open-ended), which is why the authors commenced with qualitative fieldwork. Consistent with deductive reasoning, which is narrower in nature, the authors synthesized practitioner and academic literature relevant to SPM. Based on inductive-deductive insights, testable hypotheses are developed. The authors developed an interview protocol based on in-depth discussions with a sample of 15 senior service managers involved in assessing performance in their respective firms (Table 1). These firms come from different B2B service industries. Amongst others, managers were asked whether their firm employed SPM and, where applicable, about their experience with the measures used.

The authors test the hypotheses that result from this conceptual model using data from 276 service firms. The results indicate that one antecedent affects the choice to use SPM, namely, the degree of service standardization. In addition results reveal that all five hypothesized antecedents and one additional antecedent (perceived appropriateness of the current SPM) predict the degree of SPM. Thus, the degree of service standardization and service customization positively, and customer integration negatively, affects SPM. Investments in service productivity gains and the appropriateness of current service productivity measures positively, and the perceived difficulty of measuring service productivity negatively affect SPM. The authors conclude with implications for service firms and directions for research.

Keywords: Behavioral theory of the firm, Measurement, New institutional theory, Resources and capabilities, Service productivity.

Table 1- Description of informants

	Name / Gender	Position / Industry	Age	Education
1	<i>Alexander / m</i>	<i>Managing director / point of sale software</i>	42	<i>Master's degree</i>
2	<i>David / m</i>	<i>Area manager / telecommunications</i>	43	<i>Secondary school graduation</i>
3	<i>Ralph / m</i>	<i>Division manager / insurances</i>	42	<i>Master's degree</i>
4	<i>Axel / m</i>	<i>Managing director / logistics</i>	43	<i>Bachelor's degree</i>
5	<i>Hugh / m</i>	<i>President / Estate agent</i>	48	<i>High school graduate</i>
6	<i>Leonard / m</i>	<i>Senior manager / IT consulting</i>	40	<i>Master's degree</i>
7	<i>Jacob / m</i>	<i>Director / hotel</i>	52	<i>Bachelor's degree</i>
8	<i>Herbert / m</i>	<i>Director / auditing</i>	68	<i>PhD</i>
9	<i>Lucas / m</i>	<i>Managing director / wholesaling</i>	36	<i>Master's degree</i>
10	<i>Stephan / m</i>	<i>Branch manager / restaurant chain</i>	54	<i>Secondary school graduation</i>
11	<i>Tanja / f</i>	<i>Manager / hotel</i>	38	<i>Bachelor's degree</i>
13	<i>Owen / m</i>	<i>Manager / bank</i>	42	<i>Bachelor's degree</i>
14	<i>Rita / f</i>	<i>Director / network equipment and services</i>	38	<i>Master's degree</i>
15	<i>Vincent / m</i>	<i>Managing director / electrical engineering</i>	46	<i>Bachelor's degree</i>

Note: m=male; f=female. The real names of informants have been replaced to ensure confidentiality

Is the process organization an oxymoron?

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The Encyclopaedia Britannica (2014) defines an oxymoron as “a combination of contradictory or incongruous words (as cruel kindness),” or more broadly as “something (as a concept) that is made up of contradictory or incongruous elements.” The objective of this paper is to discuss whether or not the process organization is in effect an oxymoron – is a process organization at all feasible?

It is suggested that the modes of coordination determine whether or not the idea of processes is realized in an organizational setting; probably it is most fruitful when applied to cooperation between organizations. I base my discussion on two empirical examples of how the idea of the process organization was introduced in the Swedish public sector (Holmblad Brunsson, 2010).

Why processes?

A number of reasons help explain the popularity of the process idea. One is the pejorative connotations of “hierarchy,” which is often seen to imply “bureaucracy” and costly solutions to simple problems. Frederick Taylor (1911/1998), for one, classified the hierarchical organization as an outmoded inheritance from the military, and many have since followed suit.

Another reason is the many reports on management fashions which appeared from the late 1990s on (Abrahamson, 1996; Carson et al., 2000). “Management fashion” became an expression with negative connotations – who would want to make management recommendations that people saw as ephemeral from the start?

A third and related reason is that processes refer to something natural, which exists independently of human interference. Processes are there to be discovered, as pointed out Karl Weick (1969/1979) when advocating the idea of organizing, as well as Michael Hammer (1996) when describing the process organization in greater detail. In contrast to procedures, which are man-made and complicated arrangements, and subject to management fashions, processes were not invented, thus refer to something more stable and, presumably, more reliable.

Further, the word process has proved useful: many organizational phenomena are described in terms of “a process:” culture, strategy, leadership, innovation, marketing, political decision making, or practically any kind of change.

Processes in the public sector

While private enterprises soon tired of the process idea (Nilsson, 2004), it became all the more popular within the public sector.

In this sector management by objectives was the guiding principle for some 20 years. What the public organizations produced should be in focus, rather than how they organized their production (Brunsson, 1995). Over the years, the management by objectives was disputed: central authorities were criticized for either delegating too much or too little to the regional or local administration (Holmblad Brunsson, 2002). The process idea provided a radical alternative to management by objectives, as it concentrated on how things were done. Besides, the public sector was known to import management ideas from private enterprises with a time lag (Czarniawska-Joerges, 1988).

A process organization in principle

Karl Weick (1969/1979) saw the essence of an organization not in the organizational chart, but in processes of sense making: “How can I know what I think until I see what I say?” He used the idea of organizing (rather than that of the organization) to discuss how organizations create their environment by acting. Weick saw equivocality a natural feature of organizational life and distrusted authoritative (orderly and hierarchical) management. He found management to be most efficient when it was tacit, unobtrusive, and non-interfering, but nonetheless accepted hierarchical management.

More explicit elaborations of the process organization, such as that of Hammer (1996), illustrate the difficulties of eliminating hierarchy when describing an organization. Hammer defined a “process” as “a complete end-to-end set of activities that together create value for a customer” (p. xii). Efficiency was Hammer’s prime target; work that does not add value was classified as waste and should be eliminated. Almost lyrically, Hammer described a process-centered organization as a loose association of professionals – entrepreneurs, old-time artisans, or owners of small companies. This in turn meant job enlargement, teamwork and freedom to make decisions. “We are our own managers,” said one customer account manager (Hammer, 1996).

But Hammer also acknowledged that there must be someone responsible for the initiatives of the organization. He did not believe that managers in hierarchical lines of authority add value to customers, but saw management as a necessary evil. Rather than managers (bosses) Hammer recommended a hierarchy of teammates to carry out peer reviews, process owners to design, support and represent particular processes, coaches to specialize on certain professions, and business leaders to “bring all the pieces together” (p. 132). In the end, he proposed a matrix organization where the titles of managers were changed and a lateral line of authority added to the organizational hierarchy.

The process organization at Statistics Sweden

Statistics Sweden (Statistiska centralbyrån) is a Government agency, whose task it is to coordinate all public statistics in Sweden. In January, 2008 the agency launched its new process organization, arguably to forestall future problems, when many employees were to retire, but also to impress the Government by appearing progressive.

Centralization and standardization were the key guidelines for a complex reorganization. The agency defined only one process, the statistics process, but found that people working in different stages of this process needed support from both a process department and a development department. They were to buy such support with their internal budget money and in competition with other departments. The reorganization made Statistics Sweden into a matrix organization, where lateral interdependencies and new hierarchies added to the hierarchy already in place. The managers were reluctant to use this term, however; they preferred to call their organization a process organization.

The introduction of the process organization was criticized from the start. While elderly employees resignedly found that all new Heads of office want to either centralize or decentralize work, the unions feared bureaucracy, internal conflicts and de-professionalization of employees. In the spring of 2009, the process organization was not yet fully implemented. The Head of office had left the agency, and the implementation was no longer seen as urgent. Previous failures with similarly popular concepts were called to mind – “*TQM ended up a Jippo,*” “*the best practice recommendations stayed in the bookshelves.*”

The process organization at a local hospital

In the mid-1990s the medicine clinic at the local hospital of Eksjö, a small town in southern Sweden, initiated its Esther project. In effect “Esther” was a code name for the process organization; Esther was a fictive patient, an elderly woman with a heart disease. The clinic decided that Esther should be the main concern for all decisions on medical and other care. This necessitated cooperation between different categories of professionals within the clinic, with other clinics, organizations outside the hospital, and relatives (Peterson och Bojestig, 2003). A network of collaborating professionals from different organizations was in place in the summer of 2000, when the clinic experienced an economic crisis. With the help of its network, the clinic succeeded in drastically reducing its number of beds. Routines were coordinated and responsibility delegated (also to the patients) and the clinic escaped many “normal complications” (Peterson och Bojestig, 2003).

Esther was described as a success story and awarded for its innovative approach and contribution to efficiency. In 2009 Esther was a well-known person in the southern part of Sweden, and other clinics and regions began to copy the idea.

Though few used the word process, Esther epitomized the process idea: a healthier and more vital life for Esther was the end product, to be accomplished through cooperation between the clinic and a number of other individuals and organizations. The clinic made the fictive Esther “real” by providing a photo and by celebrating her names day with extra treats for the elderly.

Figure 1- photo: Camilla Hammarlund



The importance of naming

Like individuals, organizations like to believe that they are unique. It seems strange then to adopt management techniques or arrangements that, arguably, are universally valid. And as seen from the examples above many resisted what they perceived to be such techniques – TQM, best practices, and matrix organizations. The word process was soon added to the list, and at Statistics Sweden comparisons were made with other public organizations that had tried (failed) to organize into processes.

The clinic, in contrast, though in effect implementing a similar process idea, invented a unique name for its efforts. It focused on Esther rather than on some abstract organizing principle, and hardly anyone could argue against giving Esther the best possible treatment and care.

The examples indicate that the young Juliet was mistaken when she questioned the importance of naming (What's in a name? Shakespeare, 1597/1994). When it comes to the intricacies of management, the naming of proposed changes may indeed be important. Said Friedrich Nietzsche (1882/1987: 70): "it is much more important what things are called than what they are" (translated from Swedish).

Vertical vs. lateral

Moreover, the two organizations differed in the way they introduced the process idea. While Statistics Sweden focused on its own organization, the clinic engaged many in a cooperative effort.

In general, an organization is seen to be efficient because it allows specialization and coordination of work by means of authority (Lindblom, 1977). But how the organization should be organized has long been controversial. Henri Fayol (1916/1999) questioned Taylor's "functional" (matrix) organization and argued that a strict hierarchy was a prerequisite for a prosperous organization. Any employee should have but one boss, Fayol insisted.

Hierarchical lines of authority have since been included in the very definition of an "organization" (Kühl, 2013). And as seen from the examples above, the hierarchy remained even when the ideal process organization was described. The process organization became in effect a matrix organization.

When a number of organizations cooperate, coordination is achieved not by means of hierarchy, but through negotiations, mutual adjustments and agreements. Nor does cooperation with relatives or patients involve hierarchy or matrix arrangements. This is why the process idea seems feasible in situations where different individuals and organizations – rather than one single organization – are engaged. The process organization, then, is not one organization, but many.

Is the process organization an oxymoron? Yes – and no.

Keywords: Process Organization; Oxymoron; Statistics Sweden; Hierarchy

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Technical thinking systems with Informational support for human activities

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Nowadays in the world a great attention is paid to theoretical aspects of Systems Thinking including its application – technical thinking systems.

Russian Academician Kolmogorov considered (1964) that the simulation of methods of organization (as a set of information processes or actions coming to expected results – ed) of any material system (including biological) is to use other material elements (and algorithms of functioning-ed) for creation new system with essentially the same organization like the original system.

Therefore the quite complete model of any living system (according Academician's opinion) should be called as a living system, and the quite complete model of any thinking system should be called as a thinking system.

In case of using thinking systems as the technical systems for example with simulation of human informational processes of decision taking in indeterminate situations, the technical thinking systems can content the following stages of informational support of human activities at autonomous level:

1. Determination of environment (situation) with it's simulation at semantic level.
2. Cognitive analysis of received informational model of environment.
3. Estimation of that model by comparison with the model of expected results at parametric levels.
4. Determination of it's deviations, classification the deviations on permissible and non-permissible ones – as the basis of solutions.
5. Generation of adequate solutions and specific algorithms of actions.

The possibility of technical thinking systems to identify and represent the semantics of external environment adequately to semantics of solving tasks at parametric level autonomously is a direct step from primitive level of thinking to professional level of thinking of intellectual technical systems.

There are two examples of technical thinking systems:

The example 1

The project “ARTIFICIAL INTELLECTUAL HAND” (Russia) is caused by the long absence of comprehensive solution of actual problem for manipulating robotics - Capture reliability of non-oriented complex shape objects – and connected with objective physical laws and associated with the absence of active force projections of object's weight (as the vector units) of new

contact points in initial position (before object's lifting) and obligatory appearance of these forces (and also other forces) later during the stage of object's manipulation.

This generates the paradoxical situation when in first it is necessary to take decision (by any robot or man) on capture reliability in initial condition but then the realization of that decision takes place in another condition with uncertainty.

Therefore it is not possible to calculate in advance the reliability of object's capturing as a stable equilibrium of forces and moments in the system "Hand - object" (system "H-O") and so manipulating possibilities of any robot connected with capture of any object can be realized successfully only in the shot frames of determinate conditions before created or estimated by man. This also deprives any robot an autonomy in different situations.

The comprehensive solution of determination of physical situation in the system "H-O" is based on bionic and ontological approaches (as the structural formalized processes of interdisciplinary knowledge at semantic level) with formalized descriptions and can be shown by the geometrization of physical situations at semantic level where semantic component of physical situation in the system "H-O" can transfer to geometrical task with determinate status.

Above is based on the simulation of as a spatial sense of touch of human hand (as the feedback) with formation and evaluation of tactile image of fixing of virtual displacements of object and so on the simulation of actual functional principles of movement act of human hand where the multitude of new interacting contact points as the base of multi-agent system creating the special relations between these contact points - is the base of semantic net of these relations and in essence there are some components of cybernetic methods in the project.

Some ideas of solving the problem have been borrowed from biology, psychology then were transformed by the laws, principles of physics, cybernetics, semiotics, informatics, robotics and etc to the project.

At the results is the basis of mentioned stages of informational support of human activities by thinking systems.

There are not functional analogies of the project in the world.

Realization of that project can be useful as for human activities in extreme and dangerous environment and so for decisions of invalid's problems.

Also it can be interesting in Business, for example, by creation new expert systems on base of project's control principles and methods to decision taking of problems with determination the degrees of risk in indeterminate situations.

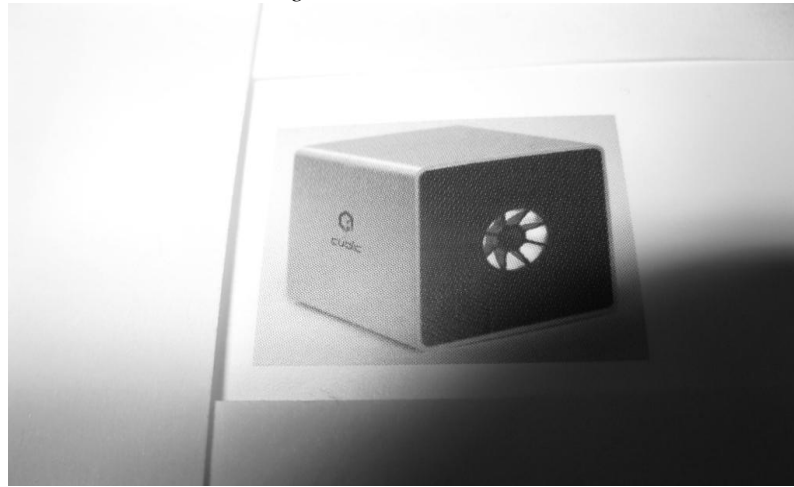
The example 2

There is the domestic robot "Cubic" (Russia) [5] which is deprived it's feet and hands and is capable to help it's owner by need informational support. "Cubic" is able to understand a human speech in interactive mode and is ready to be a reviewer, an assistant, a secretary, a consultant and a coach. Robot is a clever person to have a talking by using some aphorisms and humor, can help to set tasks and to take decisions, to read aloud last news, actual information, to provide remove control of any technical system of smart home or smart office.

Robot "Cubic" can produce external informational support with organizational and psychological aspects for any person in conditions of lack of motivation, free time and sufficient power for actual decision taking.

Thinking systems are able to reduce of expenses of person's limited physical, mental and time resources over the periods of suiting their needs, which creates the additional opportunity for further person's perfecting.

Figure 1- Robot “Cubic”



Keywords: Technical thinking systems; Informational support; human activities

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[www. Cubicrobotics.ru](http://www.Cubicrobotics.ru)

Pragmatism-beyond Epistemology: an ethical approach to systems decision process

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In 1965 Sir Geoffrey Vickers issued a challenge to the community interested in the exploration of human systems. That challenge was one of embracing the moral importance of responsibility; more to the point, the urgent need to develop an ethic of systems thought.

Since that time systems thought has cautiously engaged the ethical question. It has done so through questioning the methodological purity of any particular inquiry; it has done so through critically engaging the boundary of any particular system and it has done so in the epistemological sense. That being said it has not confronted in a heroic sense the fundamental ground of the ethical question: “*what is to be done*”.

During the intervention of every human system the point will come when an action must be taken or not, the appropriateness of various actions (or inactions) under the circumstances will be considered and a choice will be made among the various alternatives; unless that choice is made pursuant to a pre-existing template or algorithm, that choice is an ethical decision. Almost every conscious decision that we make is an ethical decision and every decision that we make will affect some system or another.

This is the question of “what is to be done”?

In this paper I argue that it is time for systems thought to fully embrace the ethical turn. The question “what is to be done” is as much a part of the human system as knowledge of the feedback loops that govern the system and other elements of the system. I further argue that only a non-foundational ethic will serve as the arbitrator of the good in these times of increasing complexity and rocking boats.

At its core systems thought considers that the world or any part of it cannot be understood as elements in a vacuum; the whole is more than the sum of its parts. To date the ethical question has been avoided by the great majority of systems thought, it is time that the question should be recognized as part of the system itself and not as a separate (reductionist) element that should not be considered.

Although there are numerous ethical approaches they can all be generally categorized into four fundamental types. Deontological ethics, that is rule based ethical system, regardless if those rules are nominated the Ten Commandments or the rules of driving a vehicle on the road. Consequential ethics, what is the effect upon the most people of the action that we propose to take. Virtue ethics, what is the effect of doing what we are thinking about upon the type of person or community that we want to be. Stoic ethics, what will the effect of what we are considering

doing upon the general or personal peace of the individual or the world. And finally, Pragmatic ethics, what is the overall result of our contemplated actions in consideration of the present conditions of the system we are working with.

Pragmatic ethics grew from the Pragmatic school of thought with origins in nineteenth century America with the thought of Pierce, James and Mead. Most recently the late Richard Rorty has become the leading thinker in the field of Pragmatism.

Rorty argues for acceptance of the contingency of all things. That being the case the ethical decision that we make for any particular system is a decision that is taken for that particular time and under those particular circumstances. As circumstances change over time the decision can and should be revisited. Pragmatic ethics requires that we disregard philosophical theories in the exploration of the question “what is to be done” in favor of embracing real theories. The ethical inquiry that I argue for here is the debate over the various concrete advantages and disadvantages any particular action would entail at the particular time and under the particular circumstances that exist at that time. The ethic that I argue for in this paper is not foundational in that it does not rest a set of philosophical or religious beliefs, nor is it relativistic in the sense that any response to the ethical question is as “good” as any other response since it does not concern itself with final answers but rather with actions within a defined system.

Keywords: Pragmatism-beyond Epistemology; ethical approach; systems decision process

Knowledge-Based Organizational Culture Development Challenges in Small and Medium Sized Enterprises of Post-Soviet Georgia

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Formation of knowledge-based healthy organizational culture is the main challenge for sustainable development of small and medium-sized enterprises (SMEs) in the modern turbulent environment. Due to close relations and more possibilities for sharing knowledge in SMEs healthy organizational culture may become the key determining factor of overcoming the weaknesses caused by the scale of business and competitiveness.

«No company, small or large, can win over the long run without energized employees who believe in the mission and understand how to achieve it.» (Jack Welch)

With the purpose of study of challenges for organizational culture development in Georgian SMEs we have undertook a study in 35 Georgian SMEs, have interrogated 127 employees (14 of them were top-managers of companies). Since culture study requires deep analysis of labor relations, for validity of research and for study of peculiarities of organizational culture we have used also methods of empirical study and rechecked analysis results in specific small and medium-sized entrepreneurial companies by means of employees' polling. Questionnaire consisted of closed questions, and also we have had open interaction with respondents in the testing process. For drawing up a questionnaires, assessment and characterization of organizational culture we have used research methods of Corlett & Pearson (Corlett, Pearson, 2003), Harisson (Schein, 2010); Cameron & Quinn's Hierarchy, Clan, Market, Adhocracy cultures criterions (Cameron, Quinn, 2006); Charles Handy's the club (Zeus), role (Apollo), task (Athena), and existential (Dionysus) cultures Assessment Methods (Schein, 2010); Denison's Mission, Consistency, Involvement, adaptability headings (Denison, Haaland, Goulzer, 1990); Schein's Characteristics of Healthy Culture (Schein, 2010) and other scientific works. Previously formulated assumptions were justified or specified to some extent. We can consider as a positive results that human relations in Georgian SMEs are close on frequent occasions, cases of

friendship and kin relations are also frequent that amplifies team spirit in organization members. 48% of respondents stated that kin relations are frequent in their companies. There were not observed problems of relations in cross-cultural, multiethnic groups that creates important precondition for sharing knowledge. 28% of respondents (36 employees) were from ethnic minorities, and 85 percents of them stated that they didn't remember any conflict in organization on ethnic ground. 87% of all respondents share this opinion.

Research showed that management and followers of investigated SMEs have different perception of culture existing in organization. The most part of managers (9 managers) supposes that their management style is democratic and the company takes care of employees' motivation, while their employees didn't welcome the motivation methods used in organization and they considered management style as non-democratic. 4 managers acknowledged that their bureaucratic style is caused by reality, and only one stated that his style is situational. 23 employees have found out that they are satisfied with workplace, 56 persons (44%) are more or less satisfied, against the background of unemployment existing in the country, 48 of employed persons (38%) stated that they are nor satisfied with their job and would work with pleasure somewhere else.

Also organizational culture is instinctive and unthought on frequent occasions. Management doesn't direct attention on it and frequently is affected by traditional culture and post-Soviet mentality. 78% of employees supposes that company mission is receipt of profit, and only 12% of followers comprehend organization goals and strategy. 87% of employees indicate that manager's attitude towards organizational relations is basically depended on the nature and mood of managing individuals. Research showed that management style is mostly depended on psycho-emotional state of manager, is instinctive and less based on objective reality or knowledge. Clan or bureaucratic culture dominates among cultural characteristics. Organizations with weak culture (28 organizations) were frequent. It is turned out that cultural values are seldom formalized in organizations and on frequent occasions norms of ethic and formal relations are not determined (code of ethics was not found in 33 organizations); mission and other nonmaterial values are blurry and don't have correctly formed verbal image. Company goals are prescribed only in constituent documents and are not actively used. Such cultural characteristics leave room for expansion of pathological cultures (Gvelesiani, 1999), existence of which in various forms is confirmed on frequent occasions. At least one pathology was testified by research in 31 investigated companies.

In investigated SMEs, in case of healthy organizational culture (2 companies) its positive impact on business performance was obvious. Employees possessed here detailed knowledge of almost all business operations, and best forms of collaboration and sharing knowledge took place. However the turnover of skilled employees turned out to be a main challenge, since organization successes and high level of employees' knowledge required for business extension, establishment of affiliated branches that didn't take place in reality.

Factors having impact on the process of formation of organizational culture in Georgian SMEs is characterized by following features:

1. Georgian SMEs are of smaller size (LGE 2013) than even European firms of mentioned category (CSWD-2009); one of the reasons of difference in definition is caused by small scale of Georgian market;
2. Skill level of employees and accessibility of external sources of its upgrade is considerably lower when compared with large business; therefore, level of specialization and index of performance are low;

3. Business-making traditions are very poor, the most aged part of companies is only 20 years old and they are also rarely met in SMEs.

On the basis of carried out researches we conducted SWOT analysis of Georgian SMEs and, respectively, significant challenges and recommendations are formulated in the work for development of knowledge-based organizational culture, among them the following can be mentioned:

- changes in this sphere are vitally important. Considerable simplicity that can take place during implementation of culture changes in Georgian SMEs is related with weak organizational culture that gives an opportunity to easily implement the mechanisms of positive changes in values, attitude and culture, to form essentially novel, healthy organizational culture.
- implementation of new knowledge regarding modern challenges of organizational culture would assist management and followers to conduct correct analysis of existing reality in their organization and would promote correct determination of development directions.
- existing reality requires an elaboration of purposeful measures and correct formation of principles and mechanisms of management. Manager must be able to select management style among variations, according to individuals and analysis of situation.
- manager must possess knowledge of symptoms of cultural pathologies in order to timely take appropriate decision and switch organization to the way of healthy development.
- employees' apprehension of their role in attainment of organization goals, its existence is important for amplification of employees' motivation, commitment and attachment to organization;
- involvement of employees in the process of decision making, justified application of methods of material and psychological motivation, looking after employees' knowledge and therefore, development of democratic processes of organization administration.

«Culture is the soul of the organization — the beliefs and values, and how they are manifested. I think of the structure as the skeleton, and as the flesh and blood. And culture is the soul that holds the thing together and gives it life force.» (Henry Mintzberg).

Understanding of the fact that organization culture is vital function that is in direct relation with self-expression of individuals, self-esteem, feeling of belonging to team and effective initiation of organization potential and generally, with its existence – will give a basis for correct development of culture management of Georgian SMEs.

Keywords: *Knowledge-Based Organizational Culture; Development Challenges; SME; Post-Soviet Georgia*

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District' start-up and entrepreneurial logics. The cases of Databenc and Visit Peak District & Derbyshire.

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Objectives and research questions

The aim of this paper is to analyze the logics underpinning a district' start-up. Since districts are based on a set of strategic relationships between the members, the role of leading-governing actor is of fundamental importance for the diffusion of cooperative behaviors, trust and commitment. This is the reason why the current research deepens the literature on strategic entrepreneurship, adopting a specific focus on entrepreneurial capabilities.

Furthermore, the paper examines, through a case study analysis, two districts (Databenc and Visit Peak District & Derbyshire) in order to understand the exploited entrepreneurial capabilities in the star-up phase and its consequent commercialization.

The research questions at the base of this research are:

1. What is the role of a governing-leading actor in districts' start-up?
2. What entrepreneurial features the governing actor needs to have?
3. What are the specific entrepreneurial capabilities in managing relationships?
4. Can a complex set of relations and their related management be sources of competitive advantage for the district?

Literature Review

Districts are expression of specific local vocation (Testa, 2013) where it is possible to find a territorial high either productive or service specialization.

One of the most import reflections, emerging from literature, is that development stage is overestimated comparing contributions on the start-up phase.

Within these studies, there is a recall to entrepreneurship linked to the Schumpeterian logic (1934) that views the entrepreneur as an innovator and, in this sense, can be also interpreted as creator/generator of a new venture. In this direction, the creation/discovery of opportunities is

related to entrepreneurial capabilities (Alvarez, Barney, 2007). Also the outputs of the start-up can be connected to the leading entrepreneur.

The key elements for a new-venture are strong leadership with a specific strategic vision (Trujillo, 2013), the ability to incorporate social logics within the districts and to diffuse cooperative and trusting behaviours among members.

Furthermore, the leading actor needs to have the typical entrepreneurial features (risk taking, proactiveness and innovativeness) to share with other members but with a higher role and responsibility.

What is important to underline is that the district configuration presumes the existence of relationships among competitors and, hence, the unavailable development of both competitive and cooperative attitudes (Nalebuff, Bradenburger, 1996). This is the reason why the paper recalls the concept of social capital defined as “the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit. Social capital thus comprises both the network and the assets that may be mobilized through that network”.

This is the reason why this paper also verifies if the leading actor has to have specific capabilities in managing relationships within the district and between the district and the external context and if the complex set of relations and their strategic management can be sources of competitive advantage for the district.

Findings: Existing literature (Lazerson, Lorenzoni, 1999) agree on the importance of mutual trust and effective collaboration in the districts’ start-up. The difficulty inhabits in the fact that there are different types of partners (i.e., public, private or of mixed matrix) and in the pursuing of common purposes.

However, there are exactly the shared values and aims that contribute to create a climate of mutual trust.

As regards Visit Peak District & Derbyshire DMO, its focus is on marketing activities both at organic and induced level while the aim of DATABENC is the development of a strategic plan regarding the cultural heritage of Campania Region.

The mutual trust is built and fostered thanks to ability of the governing actor in valorising and systematizing the capabilities of members of the districts. Each partner, indeed, improves upon a specific capital (economic, scientific, relational, technological and social) that it is then spread out within the district and used for the gaining of the competitive advantage.

In this scenario, in which partners have a clear role in the strategic planning of the leading actor, the district acts as incubator of resources and competences.

According to the leading actors of these districts the mutual trust is extremely important in the light of the strategic relationships among members in order to create a sense of cooperation and balance the interests of each partner.

What emerges from the analysis of both cases is that strategic relations are a focal point as they represent the output of mutual trust. Strategic relations differ from the simple relations as they offer for Visit Peak District & Derbyshire and Databenc the possibility to create cooperative behaviours, to work on synergistic actions and to support the strategic decision of the leading actor.

According to Visit Peak District & Derbyshire mutual trust is at the basis of the development of commercial and marketing activities, while for DATABENC mutual trust supports the activation of network processes.

The core consideration of the above-formulated proposition 1 stresses the importance on the role of the leading actor in generating and spreading mutual trust and shared values. From the analysis of the two cases, it has been pointed out that the leading actors effectively engage with members, creating shared trust and values. The generation of the latter is due to the fact that their leadership is not only top-down and direct but it is also linked to a bottom-up vision as the relationships of the district are extremely complex. Horizontal, vertical and network relations, indeed, shape the districts.

The adoption of this kind of leadership is particularly suitable in the context where there is the existence of multiple relations.

These leading actors implement team-based projects and processes where the members of the districts interact for the pursuing of common goals.

Table 1 - Visit Peak District & Derbyshire DMO and DATABENC

	Visit Peak District & Derbyshire DMO	DATABENC
Type of organization	Private	Private
Type of partners	Commercial and public sector partners	Commercial, private and public sector partners
Number of members	Over 700	60
Type of leadership	Top-down and Bottom-up	Top-down and Bottom-up
Type of district	Hub and spoke	Hub and spoke

Source: Della Corte and Del Gaudio, 2014.

The leading actors of the two districts do not have only to create the mutual trust but also to constantly manage and nurture it. At this point, the question is how leading actors manage the different stages of mutual trust?

The relative difficulty reflects the existence of a variety of different partners. Visit Peak District & Derbyshire DMO outlines that aligning the interests of members, developing a clear vision, stimulating the partners in the enhancement of their offer according to the systemic standards, stimulate mutual trust between the members of the district.

In the same direction, the leading actor of DATABENC the creation of mutual trust descends from the co-building of a “system of both promotion and fruition of cultural resources, able to valorize local identity, productions, services, through an intense network of strategic actors, called to strategizing and operationalizing together” (Della Corte and Del Gaudio, 2013, p. 10).

First of all, the districts must have a commercial soul since they involve companies that pursue economic profits. Hence, the entrepreneurial capabilities reside in the fact that they need to forecast the future scenario in terms of anticipation of future demand’s needs and, consequently, bringing innovativeness in the products/services they offer within the districts.

Once understood that mutual trust and shared values are fundamental for the “daily life” of the district, it is important to understand whether in the analyzed case studies the typical entrepreneurial traits exist. Indeed, the University Federico II presented a feasibility study for the creation of a district linked to the Decree n. 713/Ric of the 29th of October 2010 when the Italian Ministry of Instruction, University and Research (MIUR) emanated an announcement related to the creation of public-private Districts and Aggregations.

Risk-taking and pro-activeness lie in the ability of University Federico II of Naples to catch this opportunity in order to create a district of high technology that focuses the attention on the lines of action, the systematization between members belonging to different sectors and, hence, the set up of a network shaped by public and private bodies

As regards innovativeness, it is useful to start from the name of the “District of high technology for Cultural Heritage” that encloses the components of innovation with the high technology.

This latter plays a key role in the context of cultural heritage that, according to a systemic vision, involves different production and service companies that interact for the growth of the district as well as the appropriation of value coming from the network.

In the same direction, Visit Peak District & Derbyshire DMO covers a predominant role thanks to its entrepreneurial traits. In order to achieve the districts’ aims, the entrepreneurial subject takes substantial risks in its marketing efforts for the promotion of the entire area.

The innovativeness is, *inter alia*, observed in the marketing activities. The DMO is involved in creating the right contents in terms of tourism offer of Peak District & Derbyshire. Indeed, they have labeled this destination as “Destination of distinction” and they in this direction in order to offer distinctive services and proposals.

Furthermore, Visit Peak District & Derbyshire DMO demonstrates to be flexible and proactive to respond not only to the customers but also to the media ‘needs. The same flexibility is possible to be identified in the planning and management of annual events from which the members of the district can benefit in the outside busy holiday periods.

The network relationships of both entrepreneurial actors demonstrate the ability to “exploit” existing resources in the referring ecosystem where the organization is embedded but it is important to understand if the leading actors exploit/explore other types of relationships, related to the external context.

From the study, it emerges that both districts are able of navigating and scanning the external environment with the consequent relational capabilities with the external actors.

The relations with the internal members allow to exploit the already available resources and competences. In this case the establishment of relations represents the expression of complementary resource endowments, necessary for the foundation, the settling and the consequent management of the districts.

The internal relationships are not sufficient to pursue strategic aims. Indeed, the leading actors of the two districts cooperate also with external partners in order to add value to their offer. In this case, experience and learning processes are put in place in order to acquire or develop knowledge. The leading actors of the two districts outline that from these collaborations originate a wide range of outcomes. Moreover, these governing actors must not only own relational capabilities but also the ability to acquire knowledge or other kind of benefits from their partners. The types of linkages they activate with internal and external actors can be relational, social and economic.

The current configuration of these districts represents the result of a collaborative process between the leading actor and the member of the districts and between the first one and the external entities.

It is, indeed, the commercial soul of these districts as well as of the companies belonging to it that pushes the leading actors to have strategic relationships with external actors.

If there is a first stage that consists in developing a commercial idea, the second refers to take it to market. In this last phase, the leading actors must interact with a series of external actors able to contribute and complete the aims of the districts.

Furthermore, internal members as well as external partners support the activity of the districts as well as offer their support in sponsorship.

This represents a strength for the districts itself as, the activities and the mechanisms instituted with huge number and the variety the actors, both internal and external, allow to sustain the competitive advantage.

In this direction, DATABENC is configured as a system of open innovation, where private and public actors interact and the role of the leading actor is to endow the innovative capital of each subject (scientific, technological, economic, relational and social).

On the other side, Visit Peak District & Derbyshire DMO activates strategic relationships with both internal and external partners that allow to realize marketing activity with a high return on investment (44:1).

Keywords: *Entrepreneurial capabilities, districts' start-up, leading actor.*

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Structural and Knowledge Dynamics in Interfirm Complex System

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Aim of the paper

The paper aims to scrutinize the drivers of interfirm network structural dynamics and their influence on knowledge creation and diffusion over time. Interfirm knowledge networks are complex webs of linkages connecting a variety of idiosyncratic firms within and across industries. By serving as conduits through which information, knowledge and other resources flow and reputations are signaled (Poldony, 2001; Owen-Smith & Powell, 2004), they support cooperation in knowledge sharing and creation processes.

The growing interest in interfirm knowledge networks is mainly rooted in the strategic opportunities of knowledge exploration and exploitation that participating firms are able to recognize and capture (Powell, Koput, Smith-Doerr, 1996; Gulati, Nohria, Zaheer, 2000; Nooteboom, 2004; Schilling, Phelps, 2007; Rothaermel, Hess, 2007; Whittington, Owen-Smith, Powell, 2009; Phelps, Heidl, Wadhwa, 2012). These opportunities have advanced management investigation to focus on network structure and processes and on how network structural characteristics influence the outcomes of the network as a whole and of the single participating firms.

The network perspective has tendentially adopted a static approach that focuses primarily on how network structure affects network outcomes and networked firm performance (Rowley, Behrens, Krackhardt, 2000; Schilling, Phelps, 2007). Network structure has been typically considered as exogenously determined and relatively few studies have paid attention to the drivers underlying its genesis and evolution (Rosenkopf, Padula, 2008; Ahuja, Soda, Zaheer, 2012; Gulati, Sytch, Tararynowicz, 2012). However, the clarification of network structural dynamics is key to enhance our understanding of network knowledge performance over time.

Furthermore, Phelps et al. (2012) have underscored that the influence of knowledge properties (such as tacitness and complexity) on the performance of network knowledge creation and diffusion, as well as on network structure configuration is an underexplored topic. The scrutiny of the role of knowledge properties and the nature of interfirm ties through which different types of knowledge flow also seem relevant for the comprehension of network structure dynamics. Based on these initial indications, in this paper we focus on the following research question: what are

the drivers underlying the dynamics of network structure and the consequent knowledge creation and diffusion potential of such networks?

Contribution

Due to the relevance of both relational and structural properties for the efficient, effective and timely accomplishment of the processes of creation, sharing and transfer of different knowledge types, we single out two relatively distinct levels of analysis in the network connective structure: (a) the local level of dense clusters of firms connected through strong ties, that we indicate as the “mesolevel analysis” (Baum, Shipilov, Rowley, 2003; Giuliani, Bell, 2005; Conaldi, Rullani, 2010; Gulati et al., 2012); and (b) the global level of the overarching whole network connections that link firms through weak ties (Kilduff, Tsai, 2003; Provan, Fish & Sydow, 2007), that we identify as the “macrolevel analysis”.

In particular, as the two distinct levels of network structures are characterized by different relational and structural properties, we posit that, on the one hand, each of them is able to provide an idiosyncratic contribution to network knowledge processes and performance. On the other hand, each level exhibits idiosyncratic structural dynamics.

In order to elucidate the structural dynamics of the two levels identified, we draw on the contributions that originate at the crossroads of investigation in network research and complex science (Watts, Strogatz, 1998; Barabási, Albert, 1999; Amaral, Scala, Barthélemy, Stanley, 2000; Newman, 2003; Newman, Barabási, Watts, 2006). These studies regard all networks (e.g., biological, social, technological, and so on) and explain the models according to which network structures evolve. Among these models of structural dynamics, particular attention is given to two models that are particularly interesting in the context of interfirm knowledge networks. In particular, accordance with the relational and structural properties displayed by the macrolevel and the mesolevel of analysis, we propose that: (a) the mesolevel exhibits a structural accelerating network model, characterized by the emergence of an upper limit to its size and complexity (Dorogovtsev, Mendes, 2001, 2003; Mattick, Gagen, 2005; Palla, Barabási, Vicsek, 2007), due to the accelerating costs of new firm entries in clusters; and (b) the macrolevel organizes itself as a small world structure, following a scale-free network or a truncated scale-free network model (Barabási, Albert, 1999; Amaral et al., 2000; Dorogovtsev, Mendes, 2003; Newman, 2003).

The identification of the two models is key to clarify the drivers underlying the dynamics of the network multilevel structure, allowing to identify the logic that guides the creation, maintenance, and dissolution of network ties at the two levels of analysis. Furthermore, it enables us to infer how structural evolution will influence knowledge production and diffusion at each of the two network levels.

The present study differs from previous research in three important ways. First, rather than the structure of a firm’s ego network (Kilduff, Tsai, 2003), we consider the structure of the whole network. While the larger part of extant research on interfirm knowledge networks explores how firm’s network position and firm’s ego network structure influence the ego firm knowledge outcomes (McEvily, Zaheer, 1999; Ahuja, 2000; Baum, Calabrese, Silverman, 2000; Zaheer, Bell, 2005), only a handful of recent studies emphasizes the role of the whole network structure. Second, we propose a multilevel framework to explain the link between structural dynamics and network knowledge potentials. Early network inquiry has focused mainly on a single level of analysis (Schilling, Phelps, 2007; Rosenkopf, Padula, 2008). Recently an increasing number of scholars have underscored that a more satisfactory comprehension of network phenomena can be

achieved only by advancing more dynamic and multilevel views (Moliterno, Mahoney, 2011; Gulati et al., 2012). The adoption of a multilevel approach allows us to better understand how global and local properties and dynamics of knowledge networks affect knowledge creation and diffusion over time.

Finally, we consider both structural and relational characteristics of network connections. Previous research on interfirm knowledge networks has focused primarily on the effects of structural characteristics (i.e., density, clusterability and reachability of the network) of the whole network structure on knowledge outcomes (Baum et al., 2003; Powell, White, Koput, Owen-Smith, 2005; Schilling, Phelps, 2007; Rosenkopf, Padula, 2008; Gulati et al., 2012). Another stream of research in the network vein concentrates on the role of tie strength in affecting the creation and diffusion of different knowledge types (such as, tacit vs. explicit, simple vs. complex, context-specific vs. general, and so on). Bridging the findings of the aforementioned studies, we examine how the consideration of both relational and structural properties of network ties influence structural dynamics in interfirm knowledge networks.

Structure of the paper

The study is structured in five sections. In particular, the introductory section specifies the aims of the paper, presents the research gap that we tackle, and exhibits the main contributions of the study. Section two draws on previous network-related work so as to develop a theoretical framework that, focusing on both the structural and relational characteristics of network connections, typifies two relatively distinct levels in the network structure: (a) the mesolevel and (b) the macrolevel of analysis. In this section, the idiosyncratic contribution that each of the two analytical levels provides to the network knowledge creation and diffusion is underscored. Section three leverages studies at the crossroads of investigation in network and complex sciences to elaborate a conceptual framework that elucidates the models according to which the dynamics of network structures unfold. Section four discusses the main implications of the study proposed for extant theory and proposes some concluding remarks. Finally, we will deal with the limitations of the study and the avenues it opens up for future research.

Keywords: Structural Dynamics; Knowledge Dynamics; Interfirm networks; Complex Systems.

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ORGANIZATIONAL FUTURE ORIENTATIONS

Why Selling Model Transformation Fails?

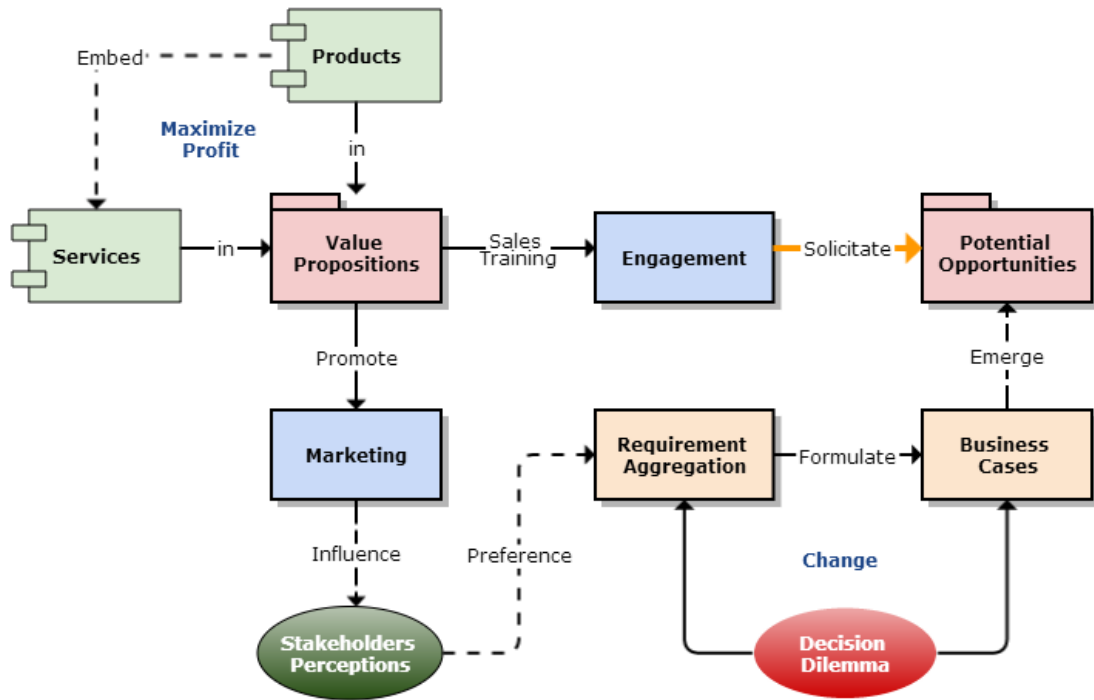
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Business transformation becomes an inevitable trend in nowadays highly competitive environment. Firms believe that the continuous innovation in product and service is the powerful means to retain the market through differentiation. But such an innovation does not guarantee the firm performance. Many case-studies have shown that the innovation does not always attract the market to pay for it. Firms manufacture or represent products, and integrate these products into services to differentiate from the competitors by offering the value propositions to their customers. Firms prepare the sales kit of these value propositions help the salesmen to engage the potential opportunities by connecting a series of trainings. They also run marketing campaigns to influence the perceptions of the stakeholders to be more favor in these value propositions. The stakeholders who are facing the business challenges and looking for solutions to answer the requirements will form business cases to the firms. The salesmen endeavor to solicit the potential opportunities from the business cases and close the deal by offering the value propositions. However, sometimes the stakeholders are in dilemma in make decisions to change the requirements or even jeopardize the business cases.

This paper destructs the selling model of value proposition illustrated in Figure 1 and carefully examined where firms might overlook or poorly perform. The author participated and guided two cases of selling model transformation. Both cases were information technology firms selling or representing products. They were also positioned in the same value chain and usually pursuing the same potential opportunities. This paper identifies that the value proposition cannot convince the stakeholders if these propositions do not have solid demand from the market. The two cases were trying to correct this market deviation by transforming their selling models towards requirement-driven instead of predefined propositions. The salesmen were hired presumably they could sell the predefined propositions in the first place. But the transformation was called because selling these propositions was more difficult. Transforming the predefined propositions into more requirement-driven will need to have the salesmen ability to listen to and to capture the requirements from the stakeholders by giving significant training in changing their original attributes. Not all salesmen could survive in this transformation; some quit, some were still striving to adapt this new selling model. The engagement approach was also changed; the salesmen usually contacted the operation level directly bargaining the specifications and features; but under the new selling model, they need to bring values to the executive level in order to make sale. On the other hand, the original propositions were not able to reinforce the perceptions of stakeholders, because more different viewpoints were brought up by the competitors. This information asymmetry will make the stakeholders were more reluctant to select the proposed products or services. The stakeholders not just have the preference on selecting propositions but also the prejudice on the image of salesmen. The executive level would not spend much time in discussing the business cases with those persons who were not thought to be appropriate.

Figure 1. The Selling Model of a Value Proposition



Keywords: *Selling model; Business Transformation*

How the present is mortgaged for the future? A heuristic model for evaluating group resilience in organizations

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The aim of the paper: how to ensure reliability

In management and complex adaptive systems literature, exploration refers to the search for new, useful adaptations, and exploitation refers to the use and propagation of known adaptations (March, 1991; Mitchell 1996). Hence, exploration seems to ensure more adaptive capabilities for organizations, from a long term perspective?. However, 'lazy organizations' often utilized exploitation due to immediate and certain return (Denrell, March, 2001), but could experience future failures and economic losses. Furthermore, sometimes exploitation could also become an 'invisible trap' for these organizations: in fact, it's possible that the current situation could be appraised as profitable and overall as excellent by organizations, in terms of effectiveness and efficiency, but at the same time neglecting reliability in the long term. As cited by Fang et al. (2010), Holland (1992) generalized such a dilemma as follows: “Deciding to what degree the present should be mortgaged for the future is a classic problem for all systems that adapt and learn.”

The aim of this paper is to outline an organizational model in order to assess organizational resilience and reliability, overcoming the immediate advantages of exploitative behaviour and highlights the factors which, in the long term, could lead to organizational failures, especially in semi-isolated organizational units which face unexpected events (i.e. emergency rescue, subsidiaries, local branch, task force, project team etc.). Frequently, these units are ephemeral, as their life-cycle is determined by a specific task and/or temporary event. Despite of their widespread diffusion, literature suggests that ephemeral organizations are less reliable than permanent ones (Lanzara, 1993; Weick, 1993).

I chose semi-isolated, small units because existing literature (Watts, 1999; March, 2004; Fang et al. 2010) underlines several adaptive advantages due to isolation, especially in order to 'maintain diversity and to explore more diverse solutions? in the space of possibilities' (Fang et al., 2010, 625). Despite this evidence, this paper attempts to underline some weaknesses in small units' reliability.

The theoretical background. Resilience in organizations and organizational myopia

March (1991) suggests that the more immediate returns from exploitation tend to lead organizations to exhibit a myopic bias whereby exploitation is overemphasized at the expense of exploration (Denrell, March, 2001). The utilization of existing knowledge, routines, and experience increases the likelihood that solutions will be found quickly and at reasonable costs. As a consequence, adaptive processes can become self-destructive by leading the organization to become trapped in a suboptimal equilibrium.

More recent research (Fang et al., 2010) focuses on organizational structure, in order to ensure a balance between exploration and exploitation. More specifically, the role of isolation and decentralisation is emerging: to separate a unit from the rest of an organization could permit the exploration of a new approach for managing contingency. In this way, there is the possibility to add a contribution from the 'small worlds structure' approach (Schilling, Phelps, 2007; Uzzi, Spiro, 2005; Yayavaram, Ahuja, 2008) to traditional contingency theories (Burns, Stalker, 1961; Galbraith, 1973; Lawrence, Lorsch, 1967).

The result is a theoretical model which describes how, in particular conditions of the organization's internal or external environment, semi-isolated small groups can face contingency more profitably.

Finally, an important contribution comes from the microfoundation approach (Bonesso, Gerli, Scapolan, 2014). The recent debate on the micro-level origins of a firm's capabilities (Felin et al., 2012; Foss, 2011), has shown that individual's characteristics are important antecedents of the development of organizational capabilities, such as reliability. The microfoundation approach added an individual, psychological level of analysis to contingency theory, providing a more exhaustive model in order to analyse and check/assess/examine organizational resilience foundations.

In summary, my final rationale for the integration of the above approaches with the contingency-management stream of study, is in order to assess in which conditions semi-isolated group reliability is only a pretence and not (actually) real. Like March (1991) and Fang et al. (2010), the model exposed below has three main entities: environment characteristics, individuals and structure/organization. Nevertheless, a relatively original feature of my model emphasizes the role of so called inner pathogens in threatening organizational reliability.

Inner pathogens

From the outset it's important to focus on the differences between the concept of latent errors, (Ramanujam, Goodman, 2003) and High Reliability Organizations (HROs: Weick, Sutcliffe, 2005; Weick et al., 1999) that are widespread in literature, and inner pathogens.

First, the focus of the HROs' approach is on processes to reduce deviations and adverse outcomes (i.e., avoidance of adverse consequences), whereas latent errors refer to uncorrected deviations from procedures and policies that can potentially contribute to adverse organizational consequences (Ramanujam, Goodman, 2003). In other words, 'latent errors spotlight processes, such as escalation of commitment, that contribute to deviations and adverse outcomes, whereas high reliability emphasizes processes, such as mindfulness, that reduce them' (ibidem).

Latent errors' features are: expectations (the institutional and role beliefs about how a task is to be performed and typically take the form of rules, regulations, standard operating procedures, organizational goals, and normative standards); deviations (observable departures from shared expectations) and potential adverse consequences (deviations alone might not immediately lead

to adverse consequences: some factors could act as triggers, and generate undesired outcomes over time. In certain conditions, latent errors could even lead to positive consequences, when rules and procedures are inefficient or specified incorrectly (Reason, 1998)

Inner pathogens are similar to latent errors, but are not the same: in fact, inner pathogens are factors and/or processes which improve performance immediately, but at same time severely damage reliability. The first feature is the same (expectations), but inner pathogens are also characterized by the development of best practices (strengths), and likely long-term adverse consequences.

Such as in a myopic situation, organizational and role expectations determine procedures, rules and norms which are likely to severely damage resilience and reliability, and in turn could lead to adverse consequences over time. Drawing on organizational and psychological literature, it's possible to identify more widespread pathogens, described below.

– *Pooled /generic interdependence.*

As noted in literature (Thompson, 1967) pooled interdependence is positive in terms of efficiency and autonomy; in tightly coupled work systems errors in one part of the system affect the performance of other parts. However, local errors become invisible throughout the system. (Levinthal, March, 1993; Ramanujam, Goodman, 2003, Reason, 1990)

– *Scarce and poor communication*

A key factor determining the dynamics of such a system is its topology of interaction patterns between members (Fang. et al., 2010; Strogatz, 2001; E., Lee, J., Lee, J., Lee. 2006). Common sense suggests that scarce quantitative communication is positive in terms of efficiency (both economic and psychological); furthermore, poor or 'cold' communication (focused exclusively on professional tasks, neglecting personal and private issues) can lead to more 'professional' interpersonal relationships, avoiding and preventing non-professional interference. However, research in HROs (Weick, 1993; Weick, Sutcliffe, 2005) suggests that communication flow among operators in small groups is an important antecedent of resilience, especially when an unexpected, dangerous event happens to a small group. Furthermore, it was found that, despite managers' recommendations, in an emergency it's more important to be with a friend rather than a colleague (Weick, 1993).

– *Routine task*

Well-known procedures ensure efficiency and reliability, but also lead to a steep drop of attention, with negative outcomes facing unexpected events (March, 1991; Weick, 1993). Furthermore, task routines foster cognitive energy-saving, but once more can become a trap in an emergency (Nisbett, Ross, 1991).

– *Low turnover among employees*

Work-force stability is highly desirable for organizations, because it permits them to invest in long-term programs of skill training, and also permits the exploitation of already possessed skills. Employee stability leads to lower stress and enhances organizational memory, attention and familiarity (Ramanujam, Goodman, 2003).

Although, as explained above, low turnover among employees is to the detriment of exploration (March, 1991) due to less importing of best practices, ideas etc. (Fang et al., 2010); furthermore, low turn-over can lead to groupthink (Janis, 1973); low turn-over improves the total amount of

shared knowledge, which in turn leads to knowledge obsolescence (Fang et al., 2010); low turn-over fosters environmental ambiguity, because the level of knowledge (both qualitative and quantitative) about the environment remains the same overtime.

– *Standardization by procedure*

Widespread literature emphasizes the role of routines and procedures for ensuring positive outcomes. In particular, it was found that the presence of formalization and top-down mechanisms of control (Benner, Tushman, 2003; Jansen et al., 2006; Mom, Van den Bosch, Volberda, 2007; Zollo, Winter, 2002) supports exploitation, which makes/produces positive return for the organization. Furthermore, and perhaps more notable, coordination by procedures is a very much appreciated mechanism by managers, because the managers have the perception of full control of the situation.

Despite these positive outcomes, it was found that the presence of decentralization of decision making and coordination by competence and by goal has a positive impact on exploration (Cardinal, 2001; Jansen et al., 2006). Furthermore, coordination by goals has a relevant impact on employees' work motivation (Latham, Locke, 1990), which in turn leads to better performance.

– *High individual level of competence an/or long tenure in the job*

Organizations highly appreciate employees' fidelity. A long-term relationship between a worker and their organization usually leads organizations to be confident in employees' behaviour; and at the same time, a trusting atmosphere usually reduces employees' opportunism (Jensen, Mackling, 1973). Furthermore, long tenure in the job permits workers to develop job-related skills, hence progressively reducing training costs.

However, high level of competence and long tenure in a job can lead to underestimation of task difficulty; can also lead workers to more hazardous behaviour, due to an overconfidence effect; finally, a high level of skills leads to a lower probability of learning from one another (March, 1991).

– *Shared/mutual accountability*

Shared accountability is a comfortable coordination mechanism for organizations. In fact, in this way an organization transfers the responsibility of desired outcomes, and the autonomy to carry out the expected task to a couple of workers (or to a whole group). This delegation mechanism seems to ensure a twofold outcome: the worker's autonomy and self-efficacy improvement and coordination of time saving.

Unfortunately, social cognition (Nisbett, Ross, 1977) shows that in similar situations it's fairly probable that no one carries out the task, because everybody thinks that an other or others are taking care of it. Furthermore, social psychology provides evidence of a phenomenon, widespread in group dynamics, called responsibility diffusion (Wallach et al, 1964): even in an unambiguous situation, no one carries out the task.

– *Extreme job differentiation*

Job specialization is a basic mechanism in organizational behaviour, and also builds on a market grounded on exchange relationships (Smith, 1973), which are necessary since every job makes a partial output that has to be exchanged in the market. This specialization leads to maximum efficiency and skills development, but can also lead the worker to become indispensable. So that, for an organization the wage of the worker increases, and the cost of his replacement also

increases. Furthermore, a problem of reliability arises, due to the fact that the worker is irreplaceable.

Further development and future research

Researchers can transform the nine ongoing exposed inner pathogens in a check-list in order to diagnose reliability level in a small, ephemeral unit. However, after the diagnosis, which therapy could be used? A promising stream of research considers organizational and individual ambidexterity (Bonesso, Gerli, Scapolan, 2014). In particular, because structural ambidexterity is almost impossible to achieve for ephemeral organizations, research should focus on contextual ambidexterity, especially performance management in a specific social context (Gibson, Birkinshaw, 2004). Research should also focus on individual ambidexterity (Bonesso et al., 2014; Gibson, Birkinshaw, 2004), especially individual skills and capabilities which permit the balance between exploitation and exploration in managing an unexpected event.

Keywords: Organizational reliability, Ephemeral units, Inner pathogens.

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Using scenarios to plan the future workforce for the health and social care system in England

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Background

We know that the future is complex and uncertain. Healthcare planners spend much time thinking about how they can forecast future workforce demand and supply. The problem is that many of the driving forces depend on human behaviour. What will be the future health needs of the population? Will people take any notice of public health advice? Will technology transform the way that people deliver services? How will the workforce be organised and work together? Will professionals stay or leave their chosen profession?

The consequences of getting planning wrong within the healthcare system are extremely high. Patient lives may be at risk, morbidity may increase, and the health of the nation decline.

The Centre for Workforce Intelligence (CfWI) has the task of contributing to the planning of future workforce requirements for health, public health and social care in England, which needs to recognise these problems. The National Health Service in the UK is large (over 1.7 million people) and has a budget of more than £109 billion, so understanding the future workforce requirements is critical.

Objectives

The objectives for this project were to develop a practical approach to representing future healthcare uncertainty using scenarios. These scenarios had to be challenging yet plausible and consistent, while being understandable to decision-makers. We also needed a method to quantify them for modelling and simulation.

Research question

Our research question was: How can we create better scenarios for workforce modelling and planning, building on our early work with developing scenarios?

Approach

Our approach is based on not trying to forecast the future, but producing a range of plausible, challenging and yet consistent futures. We use these scenarios to test prospective workforce options provided by decision-makers. Some options may work well across all these futures; we would then say that they are robust against future uncertainty. Others may work badly and we would reject them. There may be an option that works really well against all futures apart from one. We would then have to decide if this option was worth taking in the expectation that the troublesome future was not likely to occur. If we made this choice, we would certainly need to scan for the signs of the problem future so we could mitigate against it.

There are four aspects to our approach, which we have called the Robust Workforce Planning Framework (CfWI, 2014a):

- 1) Horizon scanning to understand the system and what drives future behavior.
- 2) Scenario generate to explore the future and generate challenging scenarios.
- 3) Workforce modelling to simulate different futures and see what they look like.
- 4) Policy analysis to make robust decisions and decide which option works best.

Our process for creating scenarios is consensus-based with a high degree of stakeholder involvement. Although it has been widely used for a range of workforces (Department of Health, 2012; Willis, Woodward, Cave, 2013; CfWI, 2013a, 2013b, 2014d) we felt we could improve it in several areas. In particular the integration with horizon scanning, generating a wider set of scenarios, and quantification for modelling. The areas described below have been successfully trialled and tested in a new project – Horizon 2035 (CfWI, 2014c) – which is modelling the skills needed for the whole health, social care and public health system over the next twenty years.

The starting point is horizon scanning to understand the system and what drives future behaviour. We have developed a web-based tool to collect diverse ideas and perspectives about the future from stakeholders, supplemented by interviews if needed. This has two parts: narrative stories about the future that people find meaningful and important, and their interpretation of their stories against pre-defined factors of interest. This provides a mixture of hard and soft data to help make sense of the future, which can be analysed from a variety of perspectives. For example, we can examine the values of different stakeholder groups, look at visual patterns, or determine which factors about the future people consider to have the greatest impact and uncertainty. We have supplemented this by the use of systems thinking methods, producing and analysing causal loop diagrams to provide a thematic set of factors as input to the scenario workshops.

Following on from horizon scanning we use a participative workshop-based approach to generate scenarios. Critical to this is the ability to generate scenarios that are sufficiently challenging, yet plausible and consistent. It is important to generate a sufficient number of scenarios to span the range of future uncertainty, but not so many that policy makers get confused.

Many scenario methods use a ‘standard’ 2 x 2 matrix approach to generate four scenarios (Wright, Cairns, 2011). We have used this approach widely. However, there are difficulties; only two contextual factors are explicitly considered; and they must be causally independent. This is quite restrictive, especially as the economy is always a critical factor in health workforce. Simplifying the complex healthcare system into two factors often leads to somewhat arbitrary scenario themes, and ‘good versus bad’.

Other approaches generate a larger number of scenarios automatically, by flexing a set of system parameters across their range of uncertainty (Kwakkel, Pruyt, 2013; Lempert; Popper, Bankes, 2003). This might result in hundreds or even thousands of scenarios. Interpreting the results then becomes difficult and may require the use of complex mathematical analysis. At the CfWI, we

consider it important for decision-makers to have complete clarity of our approach, and do not use ‘black-box’ approaches.

We have addressed these problems as follows. We explicitly consider four contextual factors in our scenario workshop, and get participants to decide which combinations are consistent. For example, a scenario with a strong economy and high spending on health research would be more consistent – and plausible – than one with a strong economy and low spending on research. This approach typically generates five or six scenarios. The method essentially nests 2 x 2 matrices within a large matrix (National Park Service, 2013). Although it seems that it might be confusing to workshop participants, it has worked very well in practice.

We also ask workshop participants to consider additional factors, up to eight to ten in total. We then test the resulting scenarios for consistency using cross-impact analysis (Weimer-Jehle, 2006). This confirms the consistency of the workshop scenarios, and has the additional benefit that we can generate additional scenarios if needed from consistent combinations of the wider set of contextual factors. The software ranks the resulting scenarios by degree of consistency, so high consistency scenarios that participants may have missed in the workshop can be included.

Once we have documented the scenarios, and workshop participants have approved them, we need to quantify uncertain factors for modelling. Some factors have future values that are inherently unknowable. For example, the demand for healthcare may vary widely in different futures.

We have extensive experience of the use of online Delphi methods, but these have proved problematic, so we now use a formal elicitation framework (O’Hagan, 2013). For factors that the model outputs are most sensitive to, we hold workshops where experts quantify their opinions as probability distributions. We provide training in the workforce prior to the elicitation. For other less sensitive but still uncertain factors, we use a modified Delphi method that reduces bias by using the same group of trained experts (European Food Safety Authority, 2014).

Findings of the study: We have used scenarios across a number of workforce reviews of different professions including hospital doctors, General Practitioners, dentists and pharmacists (Department of Health, 2012; Willis, Woodward and Cave, 2013; CfWI, 2013a, 2013b, 2014d).

However, we have now made improvements in several areas:

- Online collection of future ideas, and analysis using systems thinking methods to inform scenario generation.
- Production of a greater number of scenarios which are formally tested for internal consistency.
- Improvements to the elicitation of critical yet uncertain parameters.

As the Horizon 2035 project continues, these new methods will support the development of a long-term strategic version for the whole health and care system.

Keywords: *Scenarios planning; Future workforce; Health and social care system; England*

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Organizational future orientation: a socio-psychological approach

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The approaches to studying the organizational future orientation are analyzed (studies in leadership vision, strategic decision making, strategic management, disruptive innovations and corporate foresight). In the strategic research the organizational foresightfulness is viewed as a stable characteristic of corporate culture (Slaughter, 2004; Tsoukas, Shepherd, 2004; Rohrbeck, 2011), and as an ongoing dialog, continuing group debates about possible futures (Schwartz, 1996; van der Heijden, 2005; Mack, 2013; Wilkinson, Kupers, 2013), so the foresight in managerial teams could be considered as a future-oriented form of group reflexivity. Group reflexivity in general can be defined as the extent to which group members overtly reflect upon the group's objectives, strategies and processes, and adapt them to current or anticipated endogenous or environmental circumstances (West, 1996; Schippers et al., 2007). The future-oriented group reflexivity, i.e. orientation for the discussion of future risks and possibilities, is poorly investigated in the psychological research at the team level. Fostering managerial team reflexivity and foresightfulness is especially important for Russia that is characterized by a weak cultural support for long-term planning (Javidan, 2007; Lebedeva, Tatarko, 2011).

Study 1 (N=169) examined the organizational and psychological factors of the managerial team orientation for the discussion of future risks and possibilities.

Sample: N=169, participants of the Executive MBA programs; 51% – males, 49% – females. Method: interviews, followed by content analysis (N = 74; 30% – middle-level managers, 25% – top managers, 45% – owners); survey (N = 95; 53% middle-level managers, 47% – top managers), followed by factor analysis. The factor analysis with Varimax rotation revealed five barriers, that are hindering team ability to overtly reflect on the long-term future (the factors explain 60,5% of the dispersion): 1) low level of team trust and commitment; 2) overload by operative tasks and loss of strategic priorities; 3) overoptimistic belief in everlasting success; 4) high level of political and economic uncertainty; 5) changes in team composition. The five enablers was revealed that are (the factors explain 64,6% of the dispersion): 1) conditions for knowledge sharing and continuous learning (personal development plans, talent management programs etc.); 2) ambitious long-term team objectives supported by evaluation and compensation systems; 3) personal involvement of top-management and stakeholders in the analysis of future risks during organizational crises; 4) team members' trust to top management, organizational plans and rules; 5) strong authoritative leader with a clear future vision. In managers' beliefs team foresightfulness is mainly related to the social integration. The interviews show a very important role played by senior team leaders in promoting group discussion of long-term future. The team mood is also important, but it's role is ambivalent: from the managers'

perspective, group reflexivity can be fostered by an alarmist approach and anxiety, calling for measures to suppress future dangers.

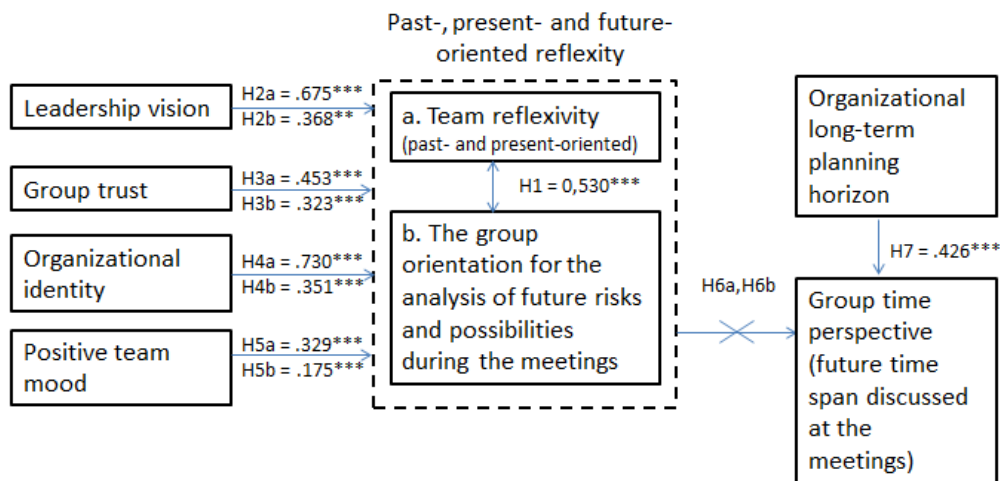
The purpose of the study 2 was to prove the relationship between group reflexivity, orientation on the analysis of long-term future risks and possibilities, leadership vision, group trust, organizational identity; and also to examine the role played by the perceived group mood in managers' attitudes toward collective future. Sample: 52 teams (18 organizations); N=443 (23% – specialists; 48% – middle-level managers; 29% – top managers); 56% – males, 44% – females; mean age - 32 years).

Several measures were used. Some of them were adapted or developed for this study: 1) the group reflexivity scale (e.g. «The methods used by the team to get the job done are often discussed»; Carter, West, 1998); 2) the group foresightfulness, i.e. orientation for the discussion of future risks and possibilities (3 items scale; e.g.: «During the meetings we discuss the long-term risks related to performing our tasks»; «We are scanning the trends that can affect us in the future»; $\alpha = 0,842$); 3) the group trust scale (3 items scale, e.g. «Members of our team trust each other»; $\alpha = 0,866$); 4) the organizational identification questionnaire (Cheney, 1983); 5) the team mood scale (8 items scale; Prigozhin, 2003 (in Russian)); 5) the leader's efforts to form the team vision was measured by a subscale of the Leader Behavior Inventory (Kouzes, Posner, 1997); 6) the perceived team attitudes toward collective future in group discussions were measured: 7) the collective future evaluation (a modification of the Time Attitudes Scale, employing the semantic differential approach; Nuttin, 1980); 8) the organizational planning horizon and future time span discussed at the meetings (a modification of the Temporal Depth Index; Bluedorn, 2004).

We supposed that the team past- and present-oriented reflexivity and group foresightfulness are strongly related (hypothesis 1). Both of them are positively connected with leadership vision (hypotheses 2a and 2b), group trust (hypotheses 3a and 3b), organizational identity (hypotheses 4a and 4b), positive team mood (hypotheses 5a and 5b). It was proposed that future time span discussed at the meetings is extended by group past- and present-oriented reflexivity, foresightfulness and organizational planning horizon (hypotheses 6a, 6b and 7).

Regression analysis has being used that supported most of our hypotheses (see pic. 1). Two our hypotheses were rejected: team reflexivity and forsightfulness don't cause direct effect on the future time span discussed at the meetings. Obviously, the external organizational schedules and the length of business cycles are more strong predictors here.

Figure 1- Regressions summary and hypotheses supported.



As the regression analysis showed (see table 1), the negative mood is blocking group reflexivity, perceived predictability of future and team ability to influence it. These findings comply with the creativity research field whether it has being showed that the negative mood is hampering collective problem solving and knowledge sharing (Amabile et al., 2005; Rhee, 2007; Ashkanasy, Humphrey, 2011).

Table 1- Regression analysis summary for team mood as predictor of the team attitudes toward collective past and future.

Predicted variable	Predictor variable, β		R^2
	Group negative mood (anxiety, panic)	Group positive mood (hope, self-confidence)	
Group reflexivity	- 0,167***	0,329***	0,121
Group orientation for the analysis of future risks and possibilities	- 0,077*	0,175***	0,041
Clarity of team long-term objectives	- 0,231*	0,522***	0,423
Positive evaluation of the collective past	- 0,185***	0,526***	0,351
Positive evaluation of the collective future	- 0,066	0,549***	0,319
Belief in predictability of the collective future	- 0,158*	0,295***	0,130
Belief in team ability to influence its own future	- 0,201***	0,426***	0,251

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; β is standardized

The present study confirmed the relationship between the group retrospective reflexivity and the group orientation for the analysis of future risks and possibilities during the meetings. It implies that a higher level of group attention to the experience and the lessons learned can favorably influence the group proactiveness: no common future without acknowledging the common past. Moreover, it revealed that the leaders can enhance the employees' attentiveness to the organizational future not only by setting clear long-term goals but also through fostering the social integration (trust and organizational identity, enforced by the strategic dialogue and storytelling) and maintaining a positive group mood. We should be careful with applying an alarmist approach to push team to the future discussion.

Three different psychological mechanisms of team members' attitudes toward common future can be supposed: 1) group reflection on the collective future; 2) group identification based on the positive image of the organizational future that is formed by leaders; 3) collective emotional states (anxiety about the future that is triggered by perceived threat to the group existence and affects group time perspective). The prospective group reflexivity enhances the group ability to adapt to changes (strategic flexibility), and the group identification based on the positive image of the future motivates toward attaining the fixed collective objectives (Nestik, 2012; 2013; 2014a, 2014b; 2014c). The collective panic and anxious emotional states are also capable to enhance the organizational future orientation, but in this case the time perspective extension is shortened, the past is opposed to the future and supports employee's positive self-esteem and it isn't used to improve group effectiveness. The anxious states are related to low organizational identity and

low trust. In contrary, the group foresightfulness (i.e. prospective reflexivity) is related to the positive group identity, high trust and commitment.

Keywords: *Organizational future orientation, Time perspective, Corporate foresight, Group reflexivity, Team mood, trust, Organizational identity, Leadership vision.*

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Finance Future Orientation: Microfinance Institutions (MFIs) and the Small Business Entrepreneurs

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Since the start of the financial crisis in 2007, the conventional banking system has restricted credit to both businesses and families, especially to less-privileged classes as such operations are too risky and expensive to be profitable. However, it has been proved that people from that social class are able to offer feasible and promising investment ideas to start profitable and successful businesses (Hollis et al., 1998). They are referred to as micro-entrepreneurs, given the small size of the projects they undertake. Which is the origin of today's "microcredits"; small loans granted to socially disadvantaged classes so that they are able to develop their projects independently. Thus, micro-entrepreneurs, many of whom are unemployed, decide to start their own small businesses or micro-enterprises to improve their own and their families standard of living, a significant improvement especially in the case of women. Therefore, microcredits stand as an alternative that prevents them from relying on predatory lenders whose extremely high interest rates do not allow to start new projects. Thus, the World Bank Report (2007) defines microfinance as "Small loans that help disadvantaged people who wish to start or expand their small business but are not eligible to be granted a regular banking loan. Also called micro lending". These small loans are managed by a new type of financial institutions, often non-profit organisations (NGOs), called Microfinance Institutions (MFIs). This special type of financial institutions are in contact with the local community, are able to gather information about the low-cost borrower and are not only interested in obtaining profit, but also in other aspects such as development, job creation, equality, the situation of women in the labour market and ecological and environmental issues and, therefore, are closely linked to what is known as social entrepreneurship; "The concept of social entrepreneurship is, in practice, recognized as encompassing a wide range of activities; Enterprising individuals devoted to making a difference;

social purpose business ventures dedicated to adding for-profit motivations to the non profit sector;"(Peredo, McLean, 2006).

Objectives

The purpose of this paper is to study the relationship of the so-called microfinance in the entrepreneurial activity of small business entrepreneurs. To do this, the activity of microfinance institutions in Latin America and the Caribbean is analysed, as a higher degree of this kind of activity has been reached in this continent.

Methodology

This study focuses on performing an extensive literature review and analysis. There is a lot of literature which deals with aspects like sustainability/profitability, asset/liability management and/or portfolio quality (Ahlin et al., 2011; Cull et al., 2009; McIntosh and Wydick, 2005; Mersland, 2008) whereas there is little literature on efficiency/productivity of these institutions (Bartual et al., 2013). Thus we will analyze, in 2010 and in a disaggregated way, the total number of Latin America and Caribbean Microfinance Institutions and the influence that each country has on the overall region.

Research question: This study focuses on identifying which are the main factors that are involved. Key Variables: Size and Institutional Characteristics Indicators, Financing Structure Indicators, Outreach Indicators, etc. will be analyzed.

Findings

As an alternative to the conventional banking system, in recent years, microfinance institutions have become increasingly important in developing countries with high levels of poverty and unemployment; especially highlighting their work in Southeast Asia and Latin America. For the last one, it could be argued that MFIs are not only interested in profit, but also in areas such as development, job creation, equality, the situation of women in the labour market and ecological and environmental issues. By analysing the Latin America and the Caribbean regions it has been verified that the proliferation and activity of these institutions is remarkable in countries like Mexico, Peru and Colombia. Variables of size and number of institutions, offices, employment generated, etc. underline the above fact. When looking at the financing structure, it can be seen that the average is 3.5, which shows a reasonable level of leverage for the type of activities they fund. Last but not least, the outreach indicators show that about 14 million people benefit from the activity of these institutions, of which almost 60% of all beneficiaries are women. The average capital amount is of 2,000 dollars, in accordance with the increase in micro-entrepreneurship.

Keywords: *Microfinance Institutions (MFIs), Finance Future Orientation, Small Business Entrepreneurship, Social Innovation.*

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INTERACTIVE MARKETING AND INTERNET OF THINGS

The effect of information technology (IT) on production and manufacturing (reviewing study)

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This paper presents a comprehensive review of the literature, concerning the impact of Information Technology on manufacturing and investigates. In this paper different applications of IT on production and manufacturing are examined, the article is organized in several parts, initially after introduction, it has been stated about IT, and after reviewing literature, the different applications of IT are expressed, at the end conclusion and discussion are presented. The obtained results showed that IT has an effective influence on the various aspects of production and manufacturing. Regarding the growing customer needs and the global competition for surviving and being profitable, developing organizations with IT tools seems inevitable..

Keywords: *Information technology, Manufacturing, amt (advanced manufacturing technology), VF(Virtual Factory), E-manufacturing , Smart manufacturing.*

Applying Data Mining Method for Marketing Purpose in Social Networks (case of Tebyan)

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The internet has become a mainstream in everyday communications and transactions and consequently social networking tools, like Facebook, Twitter, and Google Plus, are beginning to demonstrate their potential as powerful communication and collaboration tools in social, political, and educational arenas. As smart phones and mobile computing devices become less expensive and more powerful, social networks will also become more pervasive and easily available in various fields. Within a very short period of time, social networking sites are developed among deferent users all around the world. Simultaneously, there are some other social networks created locally for some countries, or for professional use like Instagram and LinkedIn.

As social networks have high value to business intelligence, sociological studies, organizational studies, epidemical studies, etc, the growing popularity and diversity of social network applications is one of the main concerns of practitioners and academics. However, these networks are often large and composed of multi-categorical nodes and edges, making it difficult to visualize and reason with conventional methods. Unlike the difficulties of investigation in these networks, there so many advantages and demands on addressee and their interest recognition. Continuous observing of these parameters are vital for networks. How do we increase our social network users, posts, and effectiveness? This is a challenging question for many in social network marketing.

Tebyan is an Iranian local social network and is big enough to be our case in this article. Like some other Iranian social networks, Tebyan has developed their own social network for Iranian and Persian speaking people. They have more than 500,000 user till now.

While Tebyan social network primarily targets cultural issues, Tebyan thinks of its user and addressee developments and needs to recognise its users then sets appropriate marketing strategies. So in this study we aim to demonstrate the group of people who mostly uses this network and then amend the marketing strategy and advertisement focusing for targeted groups to develop this social network more. How consumers may be segmented with respect to their reactions to social network. This segmentation consists of sex, age, educational level, location

(country, state and city), marital status, job; etc. The creation of a target market strategy is integral to developing an effective business strategy. The concept of market segmentation is often cited as pivotal to establishing a target market strategy.

The purposes of this article is market segmentation and correctly identifying the target groups for social network using data mining as a powerful tool in analysis and dig data related to website's users. This survey will help social network defend against useless and even damaging marketing strategies. We aim to analyse the role of deferent grouping and segmentation marketing strategy on the development, attraction and retaining of users. This study seeks to test a positive relationship between network size and marketing scope to the specific group of people.

The amount of data getting generated in any sector at present is enormous. Terabytes of data are generated every day in many organizations especially social networks. To extract hidden predictive information from large volumes of data, data mining (DM) techniques are needed. Organizations are starting to realize the importance of data mining in their strategic planning and successful application of DM techniques can be an enormous payoff for the organizations. We apply different and efficient data mining techniques for segmentation and classification based on social network available data.

Keywords: *Data Mining, Social Network, Marketing, Segmentation, Marketing Strategy.*

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Situation-aware DSS framework for Interactive Marketing

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In an increasingly dynamic context, firms are considering the relevance to interact directly with different actors, for creating and sustaining competitive advantage (Sawhney, et al., 2005). More specifically, firms are more oriented to engage and interact with customers in the exchange of ideas and knowledge (Sawhney, et al., 2005). In this perspective, customers change their role from passive recipient of information flow concerning products and services, developed principally by companies, to suitable actors that help to firms for defining new ideas and developing new products/services.

Therefore, in this changing context, the Interactive Marketing aims at engaging customer in an intensive and persistent two-way communication over long period of time (Mulhern, 2010) to

explore new ideas and new products, since this interaction leads to continuous feedback on specific problems and answers or anticipates customers' needs and preferences. The main advantages of Interactive Marketing consist to precisely communicate to customers (Mulhern, 2010), with respect to the traditional marketing mechanisms, and, mainly, in providing the great opportunity to gather a huge amount of data, from consumers' feedback, that can be exploited for generating, for instance, personalized offerings, recommendations on products and services which better fit the specific customers' needs and so on (Ding, et al., 2012).

In the last years, Interactive Marketing activities have undergone a remarkable growth thanks to the evolution of new information and communication technologies. In particular, Internet and the Web (especially with the advent of Web 2.0) represent two of the main assets for companies and customers in order to communicate and share information and opinions about products and services.

On the other hand, the evolution of the Internet is leading to a novel paradigm which foresees the pervasive presence around us of a variety of things or objects – such as sensors, actuators, mobile phones, etc. – and their virtual representations, which are able to interact with each other and cooperate with their neighbours to reach common goals: the Internet of Things (IoT) (Atzori, et al., 2010). Such objects may link to information about them, or may transmit real-time sensor data about their state or other useful properties associated with the object.

In the Internet of Things vision, individual objects of daily life, such as cars, roadways, pacemakers, refrigerators and so on, can be equipped, for instance, with sensors, which can track useful information about these objects. Since these objects can sense the environment and communicate, they have become tools for understanding complexity, and may often enable autonomic responses to challenging scenarios without humans' intervention (Aggarwal, et al., 2013). It is expected that by 2025 Internet nodes may reside in everyday things, leading to a widespread diffusion of the Internet of Things (IoT) that could contribute invaluablely to economic development (National Intelligence Council, April 2008) (Atzori, et al., 2010).

Being based on standard Internet protocols, IoT represents a suitable solution to gather data from heterogeneous sensors in order to enable fusion and provision of relevant and contextualised information in order to also support complex decision-making processes in several and heterogeneous application domains like, for instance, Commerce, Emergency Management, Security, e-Healthcare (De Maio, et al., 2011). Thus, suitable models and methodologies to exploit data coming from IoT to sustain modern Decision Support Systems (DSSs) are needed.

In this scenario, Situation Awareness represents a powerful paradigm enabling the aforementioned capabilities. Situation Awareness has been defined by Endsley as “the perception of the elements in an environment within a volume of time and space, the comprehension of their meaning, and a projection of their status in the near future” (Endsley, 1995). One of the main tasks in Situation Awareness is the automatic identification of the occurring situation that is accomplished by means of several approaches which make use of heterogeneous Semantic and Computational Intelligence techniques (Benincasa, et al., 2015).

In the context of Interactive Marketing, the synergy of Internet of Things and Situation Awareness could represent a fundamental asset to propose, for instance, real-time tailored advertisements, special offerings for individuals or specific group of users which are generated after decision processes (automatic, semi-automatic or non-automatic), taking care also of complex situations inferred by considering lower level information like customers' interests ad behaviours, stock availabilities, existing marketing strategies and so on. The analysis of this information could be performed by means of techniques like, for instance, Fuzzy Cognitive Maps

(Jones, et al., 2011) or Dempster-Shafer Theory of Evidence (McKeever, et al., 2009). Different approaches based, for instance, on Ontologies (e.g. SAW) are used to recognize occurring situations by means of inference operations accomplished with both ontology-based and rule-based techniques.

Let us consider a shopping mall powered by several sensors, like NFC Tags or proximity sensors, which are attached to specific products and shelves into the stores of the shopping mall. Situation Awareness approaches can be used to analyse the data gathered by the aforementioned sensors and, thus, to understand a measure of interest of the customers with respect to specific products or categories of products in fixed time slices. These high-level information can be exploited to define (or adjust) personalised interactive marketing campaigns (e.g. executed by sending coupons or offerings to individuals or groups of customers). Moreover, information coming from a subset of all considered time slices can be used to support the definition of future marketing campaigns.

The main objective of this work is to define a DSS (Cioca M., Cioca L.I., 2010) framework for Interactive Marketing in the context of blended commerce that is based on Internet of Things and Situation Awareness. In particular, identifying and taking care of the occurring situation in a commerce environment enables more suitable forms of adaptation of the marketing strategies. The proposed framework supports three types of decisions with respect to different marketing scenarios:

1. Short-term Interactive Marketing that provides immediate feedback to individual customers when they interact with the enhanced environment.
2. Medium-term Interactive Marketing that provides end-slice feedback to individual customers or group of customers after considering events and actions within a specific time slice.
3. Long-term marketing that provides the population of a suitable dashboard for the decision makers who are sustained by information collected in several time slices (typically days, weeks or months) in order to adapt existing marketing strategies (for the whole mall, brands, categories of products or products) or define new ones.

Keyword: *Internet of Things, Situation Awareness, Decision Support System, Interactive Marketing.*

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Innovation in the service industry: a focus on the telecommunication sector

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Theories on innovation have been developed within the huge field of contributions on innovation in the manufacturing industry (Audretsch, 1995; Becker, Dietz, 2004). Looking at the service industry, there is a lack of contributions on the role of innovation in enhancing firms' offer.

A significant contribution on innovation in the service industry refers to Barras (1986) and his “reverse product cycle”, shedding light on the technological dimension of innovation. Further studies on the theme open the boundaries of the research, identifying other fields of study on innovation in the service industry. Within them, the marketing and the relationship with the customers gain increasing attention from the scholars.

The aim of this paper is to investigate the role of innovation in favoring the creation of a closer relationship between the firm and its customers through the use of the web and its tools, considering the importance they are gaining in the last years. We focus on the telecommunication sector, studying firms' initiatives in identifying web tools that are able to support this process.

Theoretical framework and research question: In order to study the innovation in the service industry and the role of this phenomenon in focusing the attention on the customer and his key role in producing new innovation, the theoretical framework is concentrated on two streams of research, that are the open and the user innovation.

Open innovation emphasizes the role of the interactions between external and internal ideas in creating value (Chesbrough, 2007), while user innovation focuses on the role of users (individuals as well as firms – Von Hippel, 2005) as leading innovators since their skills and competences have a key role in the creation of innovation.

Translating these reflections into the telecommunication sector, the competitive scenario imposes firms to change their business models, searching for new ideas that can come from the outside

world and assuming new internal processes and technologies to improve their competitive position (Chesbrough, 2007).

Hence, firms can develop and implement innovative ideas on the basis of the opinions and comments the costumers express using the online communities.

A community can be defined as an organization, which comprehends individuals with diverse backgrounds and preferences: their interaction generates fresh and complementary resources, knowledge and competencies (Bossink, 2002).

Therefore, customers can actively contribute to firms' innovation processes through the sharing of their opinions and ideas. The so-generated innovation can lead to a better performance and value creation, not only for the firms but for the customers themselves, since the service/product is built with the purpose of answering to the needs of the demand (democratized innovation – von Hippel, 2005).

In the telecommunication sector, van Cuilenburg and Slaa (1995) provide a definition of process and product innovation that is useful to reach the objectives of this study, stating that process innovation refers to the improvement of efficiency in production, while product innovation refers to the availability of new choices and opportunities of information and communication for customers.

According to the aim of this paper, we focus on the product innovation, investigating about how the customer can favor the creation and the development of new products becoming part of the co-creation process.

We then conduct our analysis trying to answer to the main research question, that is “How and to what extent are the firms able to use web tools in order to favor the customer involvement in the creation process?”

We therefore investigate about the telecommunication sector, looking for firms' initiatives of customers' involvement through web tools.

As previously said, in order to obtain sustained advantage for a company operating in the field of telecommunications, it is important to constantly innovate service offerings, possibly up to individual customers (Kristensson et al., 2008). To achieve this goal, it is desirable to involve customers in the innovation process so as to make them co-creators of the value, which will be provided to them in the immediate future.

In order to study the degree of innovation, recalling some works on innovation in other sectors (Della Corte, 2014), we propose some variables that explain the level of innovation a firm can show:

Responsiveness to consumer. In the telecommunication industry, quality is a key factor in influencing customer satisfaction. In the field of marketing activities, firms can get a deep sense of customers' needs and expectations in order to align their products/services quickly. The key success factor in the implementation of innovation of telecommunications services is information, with specific reference to the wishes and requirements of the customers as well as to the form of the competition offer. The Customer Relationship Management (CRM) activities include the understanding of customer satisfaction or dissatisfaction, matching their expectations and answering to their compliances, enhancing the service quality and the customer care (Akroush, 2011). The innovation can be introduced both at the induced and the organic level of the service creation process, with the purpose to reach a greater comprehension of customers' needs and create a mutual value for firms and consumers (Vargo, Lusch, 2004).

Customer involvement. At this second step, the costumers are directly involved in the process of service creation: the firms enquire about their necessities and preferences and incite for

innovative proposal and initiatives that can improve the offer. Customer involvement in the innovation process permits the creation of more customized services that encounter the target expectations, dedicated offers and activities, which enrich the demand satisfaction and retention. Media and social innovation. The experiential component of the service fruition makes the media and social innovation tools crucial to guarantee the consumer's enjoyment and contentment. This dimension represents the highest degree of engagement of customers.

At the first stage (responsiveness), firms establish their propositions of value and receive feedback after the consumption phase; at the second stage (customer involvement), there is the co-creation between the firm and its customers through the participation at the production phase; at the third stage (media and social innovation), since the customer share his ideas, needs and suggestions, he almost becomes a "producer" and makes the firm able to create highly customized products and services. This is the case of crowdsourcing activities, in which users create network and share knowledge through the web. Firms can use this collective intelligence opening an online contest, a sort of competition between freelancer working for a specific project, product launch, etc. Hence, firms looking for intellectual capital and professionalism on the web can use the networked knowledge to carry out important marketing strategies (Della Corte et al., 2013).

Findings of the study: With reference to the telecommunication sector, it seems that firms do not make full use of the web tools to enhance their relationships with the customers. The empirical phase has focused on the cases of Telecom and Vodafone as two of the leaders in the TLC mobile sector.

For what concerns the responsiveness, the web tools represent a very useful mean for firms to obtain information about customer satisfaction or evolution in their needs. Otherwise, they are used from users to express their complaints, so firms have to concentrate their efforts in managing customers' dissatisfaction. Looking at the social activities on Facebook, for example, it is clear that customers use the Telecom and Vodafone fan pages as a customer care tool, asking for solutions and obtaining responses or expressing their complaints. Vodafone, in particular, received awards in the "Management of Year in a large company customer service", "Team of the Year: Complaint Management" and the "Innovation in customer service" for Usage Control. It means that in order to improve the service quality and strategically focus their objectives, telecommunications companies can use these tools to investigate the degree of customers' sensitivity and expectations, in order to improve responsiveness.

As regards customer involvement in the innovation process, it requires commitment to the relationship from both customer and supplier. Users can be instructed to elaborate upon the provided tools in their own settings of use to meet their own needs. Telecommunication companies can use this method to create a "needs-based" and truly personalized approach in the service creation (Magnusson et al., 2003).

Telecom and Vodafone, in fact, build a constant relation with the customers by creating entertainment activities on the social: funny questions and posts about customers' everyday life create one to one relationships with the users and increase the brand attachment. Furthermore, these relationships help firms in better understanding customers' behaviors and improving their business processes in a co-creation approach.

Looking at the media and social innovation, this two companies make strong efforts in introducing innovative activities in their business models: Vodafone has activated a collaboration with Crowdtch in setting up a Panel Community for its customers, obtaining useful information about users' perceptions and feelings and sharing ideas and solutions with them to create new

products and campaigns. Similarly, Telecom develops new product ideas through its Telekom Creation Center and Telekom Innovation Forum in which customers are integrated actively through the evaluation of the latest developments and prototypes and participation to interdisciplinary workshops: the best ideas are selected and then tested. This process results in new, customer-centric products and services – under the motto “from customers for customers”. These findings can inspire telecommunication firms, as well as service firms, to improve their relationships with customers through the opportunities offered by the web.

Keywords: *Open innovation; user innovation; interactive marketing; telecommunication sector.*

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Retail stores openings as a market entry strategy for SMEs. Empirical evidence in the Italian fashion industry

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The aim of this paper is to present some reflections on a phenomenon that seems to be unexplored in the international management literature: the international expansion of manufacturing small and medium sized enterprises (SMEs) through the opening of retail outlets in foreign countries. The literature on international management has often examined the exportation of SMEs' products as an important phenomenon in international marketing, also in consideration of the major role this type of enterprise plays in many advanced economies (Ruzzier et al., 2006). Traditionally, such work concerns mainly the setting up of operations or, in any case, direct investment abroad (such as establishing retail outlets) with particular reference to large-scale and multinational enterprises (Calvet, 1981). The subject of the present paper concerns a more general theoretical framework aiming to analyze the relations between firm size and the processes of internationalization. This theme has enjoyed widespread study in the literature, where it has previously been shown that good performance in international markets is not necessarily the exclusive prerogative of large enterprise. To the contrary, SMEs can operate effectively in international markets, even though there are differences between SMEs and large enterprises that are not entirely attributable to size, but rather to a series of peculiar characters of the SMEs themselves (Bonaccorsi, 1992).

In the following we shall attempt to delve into a specific aspect of the relation between firm size and internationalization that seems to have had garnered less attention in the literature, in particular the retail growth of manufacturing SMEs. Indeed, despite the by-now many years of literature contributions aiming to shed light on various aspects of the internationalization of SMEs, little attention has been focused on the retail development of small and medium enterprises, especially with regard to the manufacturing sector. As underscored by Hutchinson et al. (2009), of the literature that has dealt with the internationalization of retail businesses, most studies have focused mainly on the foreign development of large, rather than small, retailers.

Thus, the research questions we intend to pose and advance some reflections on in terms of theoretical implications and research are the following:

- a) does the expansion to foreign countries through the opening of retail outlets also concern SMEs?

- b) if so, what are the reasons that prompt manufacturing SMEs to internationalize through retailing?
- c) what are the conditions that enable this type of enterprise to operate effectively?

These research questions stem from empirical observations of the expansion into foreign markets of SMEs (primarily in apparel) in the Italian fashion sector (Runfola, Guercini, 2013; Aiello, Guercini, 2010; Guercini, Runfola, 2010). Such internationalization process has already been studied by the authors, resulting in findings that highlight the advisability of formulating a theoretical framework for this phenomenon, which seems to have attracted little attention in the international business literature, where the garment making industry is considered rather traditional (Child, Hsieh, 2014; Jones, 2002). For instance, in a recent paper on SMEs and internationalization processes in terms of decision-making and knowledge use, Child and Hsieh (2014) categorize clothing manufacturers as so-called traditional SMEs. Indeed, according to the authors, garment makers “adopt a reactive approach to deciding on internationalization”, where “the trigger may be a critical incident such as the decision by a major customer to internationalize or a major order from abroad, developments to which they feel obliged to respond” (Child, Hsieh, 2014). The assumed correspondence between a “small” enterprise and “reactive” enterprise underlying such perspective seems to be a matter for substantial debate. Actually, the phenomenon of internationalization of garment makers in the Italian fashion system seems to involve a decision-making process with regards to internationalization that is not merely “reactive” to a trigger, but that stems from a deliberate choice to expand to foreign markets (Mintzberg, 1985). Such empirical evidence raises some interesting research questions with regard to both the manner of foreign expansion (retail), as well as the sector in which such decisions to expand are made (fashion system), and that seem to outline a different, and peculiar, approach to internationalization.

Regarding the first research question—namely a) does the expansion to foreign countries through retail outlets also concern SMEs?—, the analysis reveals that not only large, but also small manufacturing enterprises can pursue growth through the establishment of a sales network in international markets.

With reference to the second research question – that is, if so, what are the reasons that prompt manufacturing SMEs to internationalize through retailing? – as highlighted in the literature, SMEs suffer from a lack of a whole series of both managerial and operational resources; such lack would surely render the implementation of internationalization initiatives such as those observed more complex. For SMEs, establishing a retail presence in fact requires overcoming considerable operational, managerial and financial obstacles. However, lacking any case study analysis and/or survey of a sample of small enterprises, the findings of this paper do not allow for understanding in detail the reasons underlying the decisions of SMEs to enter foreign markets through this sort of strategy. This said, it is nonetheless possible to furnish some theoretical reflections stemming from the empirical evidence, which seems to point to a widespread ongoing process of internationalization of the Italian fashion industry, especially considering the number of enterprises and brands involved. It seems that such a finding may be attributed to an attempt on the part of enterprises in this sector to respond to a structural crisis in the national system. The opening of retail outlets thus seems to represent a new way for enterprises to establish a presence in the foreign markets deemed suitable during this crisis stage in the fashion industry and western markets in general. The search for greater proximity to the final consumer provides for a greater capacity to disseminate the business brand, even when it does not enjoy the high level positioning characteristic of luxury goods. Contrary to appearances, the opening of retail outlets may thus be

a way for enterprises to break into new markets, despite their being culturally and geographically distant, as are the emerging markets, for instance. This may be linked to the possibilities that establishing a retail presence abroad offers in terms of knowledge and skills acquisition. This is a particularly ambitious growth strategy the part of small and medium enterprises, as it involves the need not only to acquire new skills, in distribution, for example, but also to operate in a new, unfamiliar geographical and cultural setting.

With reference to the third research question – i.e., c) what are the conditions that enable this type of enterprise to operate effectively? – although the analysis carried out fails to furnish any specific indications, it is nevertheless possible to formulate some hypotheses. Firstly, it seems safe to assume that small and medium enterprises choose carefully the countries where they intend to open stores, given that the costs involved with each single choice are quite high and it is impossible to make investments according to solely long-term considerations. This seems to explain SMEs' predilection for more mature markets and their scarce regard for at least some of the emerging markets.

The study presented herein points to the opening of retail stores as a new means by which small manufacturing enterprises seek to pursue a policy of internationalization. It will be interesting to see, in today's competitive global context, whether such strategy can represent a previously unexplored way to guarantee an alternative form of success in foreign markets and gain potentially important advantages in the competition between SMEs and large manufacturing enterprises on the international scene.

Keywords: *Retail stores openings; market entry strategy; SMEs; Italian fashion industry*

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CORPORATE SOCIAL RESPONSIBILITY

Mandated Corporate Social Responsibility (mCSR) in India: Implication in context of Hard Legislation

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Introduction

The various definitions of Corporate Social Responsibility (CSR) are concerned with relationship between firms and society, but interpreting nature of this relationship has been influenced by passing trends of society's changing expectations (Pinkston & Carroll, 1996). CSR can be defined as the actions of a firm that appear to advance some social good, beyond the immediate interest of the firm and legal requirement (McWilliams, Siegel, 2001). While business insists that CSR be a voluntary commitment but other societal stakeholders like government, NGOs and civil societies, trade unions and consumers are increasingly putting on a range of responsibilities on the shoulder of business.

Objective

A notable development of past decade has been increasing role of government as a protagonist to drive CSR (Albareda et al, 2008; Zadek, 2002). The role may span a continuum of hard regulation by enacting laws to make CSR compulsory to soft regulation, by encouraging CSR through ministerial leadership and closer public-private partnerships to deliver social well-being and subsidizing CSR activities (Moon, 2004). We label this as mandated CSR (mCSR). We propose that the conceptualization of CSR should undergo a change by accepting the increasing legislation in an area that was expected to be discretionary responsibility of the business. Drawing from concept of Carroll (1991), Lantos (2001) and Jamali (2007), CSR may be conceptualized as social voluntary responsibility (with distinction between altruistic, strategic and mandated), while economic, legal and ethical responsibility be termed as corporate responsibility.

Research question

Across the world, developing countries, that face challenges of low social development, income differences and weak institutional framework, have explicitly sought engagement with business in meeting those, through various public policy interventions, including mandates (UNDES, 2007). We discuss if mCSR may be problematic due to clashing intent of stakeholder and agency theory, being further mediated by national business system, and social and cultural contexts. We take example from India which is probably the first country to legislate, in August 2013, mandatory spending by private sector companies, of certain scale and size, on activities deemed beneficial for the society (Indonesian mCSR legislation of 2007 is much limited in scope). The

CSR funds have to be spent on social development activities like eradicating poverty, promoting health, education, skill development, women empowerment, environmental sustainability, etc., preferably in local communities. The legislation results in a sizeable mCSR budget for corporations – estimated at \$2 billion per year (The Economic Times, 2013).

Discussion:

Will mCSR be effective?

The relationship between mandatory norm and company compliance is complex (Waagstein, 2011); and they necessarily do not coincide. The challenge of mCSR lay not in intent but in appropriate implementation that is likely to impact the intent. mCSR accepts that apart from shareholders, there are other stakeholders to the business as well, and company is beholden to look after them (Freeman, 1984). The agency theory argues that shareholders (principals) engage managers (agents) to run the company on their behalf; Board of Directors act as representative of the principals to hire (and fire) and actively monitor the managers who shoulder risk of guaranteeing outcome (profit) to the principals against appropriate incentivizing (Eisenhardt, 1989). Stakeholder theory argues that all stakeholders have intrinsic value. Based on agency theory managers are likely to attend to those stakeholders who have power to reward and/or punish them in their quest to maximize their incentives (Mitchell et al., 1997). These could take forms of patronage extended to local political and social elites - by helping institutions and causes they are interested in, or supporting NGOs and civil societies that tend to make maximum noise. Thus, mCSR funds can actually go into buying support of powerful stakeholder to the business; in guise of espousing genuine cause. Eg, tobacco companies prevent the introduction of punitive legislations by using CSR as a tool (Fooks et al, 2013). mCSR does not provide any “principled criterion for decision making” (Jensen, 2010: 36), so managers are likely to formulate, adopt and implement those CSR projects which add on to their personal glory or are closer to their personal interest in form of psychological egoism or add to their reputation as good global citizen in eyes of various stakeholders (Hemingway, Maclagan, 2004). For example, Barnea and Rubin (2010) found that managers induce companies to over-invest in CSR when they bear little of the cost of doing so. Managers, being the most important stakeholder in a firm (Williamson, 1985) will have too much power to distribute CSR fund (Jensen, 2010) without being held accountable for the impact that the expenditure is creating towards social benefit, or worse still, use discretion over CSR to cement their respective position in the company with help of stakeholder backing to the overall detriment of shareholder (Cespa, Cestone, 2007).

Will mandatory CSR increase company cost?

Cost of managing mCSR will need investment in appropriate people and processes, as well as in oversight; and company may be loath to take on the challenge of this extra cost of time, effort and resources. For example, trying to find out what are the needs of local community is a long-drawn out endeavor; and “is inherently constrained by the companies’ lack of developmental expertise and the technical/managerial approaches” dominantly adopted; thus it is highly likely that what passes as developmental needs are demands of locally influential persons (Frynas, 2005). In an analysis of the management of charitable giving in large UK companies, it was found that there is considerable inertia in the processes by which the level of giving is determined (Brammer et al, 2006). Thus, with mCSR, the company may resort to check-book philanthropy where one issues checks to various delivery partners to support sundry good causes. This low-cost emphasis on spending CSR fund is likely to create patronage-distributor tendencies towards various claimants

for a share in the pie. Also, emphasis on spending would represent an end of process, rather than an ongoing engagement that can be “further developed and refined” (Waagstein, 2011), leading to short-term expediency. This can lead to fragmented, defensive approach towards CSR, with focused intention on spending money.

Will mCSR result in competitive disadvantage?

Companies which fall under the ambit of legislation may find it tougher to source money from marketplace. Imposing legal obligations may limit voluntary initiatives; as well as place companies on defensive and discourage them from embracing that responsibility. Eg, R&D efforts in development of innovative solutions like eco-efficient products or services (Halme, Laurila, 2009). Thus, mCSR may lead to scaling back of strategic initiatives and put companies at competitive disadvantage. Thus, on one hand agency theory leads to lackadaisical approach to CSR, and legal obligation to do good thwarts the tenets of stakeholder theory.

Likely ameliorative measures for intent of mCSR to succeed

The stakeholder theory and agency theory “*differ along numerous dimensions including assumptions about human behavior, levels of analysis, theories of motivation and compliance, and have strikingly different prescriptions for practice*” (Shankman, 1999). There is a healthy debate around theories both complementary and competitive to the stakeholder theory (Laplume et al, 2008). As business starts providing welfare state services, boundary between role of government and business gets blurred. We argue that Board’s very close attention to creation of appropriate CSR policy, and oversight regarding its implementation will be buoyed by right “upper echelon” at the top (Hambrick, Mason, 1984), and by rigorous vigil by civil societies with appropriate generally accepted rule-driven measurement system of societal-impact. The challenge of corporate responsibility – whether motivation comes from heart or through a mandate - is that the outcomes must be achieved in the most efficient, cost-effective and significant way (Leisinger (2007).

Future research agenda

mCSR legislation allows Indian government to harness funds from corporate in a systematic manner to ameliorate diverse challenges of the country. Assigning a mandatory nature, resolves the problems related to diversity of content of CSR and provides a greater degree of certainty than the practice of voluntary initiatives. This approach to institutionalizing CSR in form of legal obligations is likely to become a template for other countries with pressing developmental needs. However challenges remain. Eg, mCSR has been implemented in Indian public sector enterprises since 2010, but for the year 2011-12, largest ten companies managed to spend less than half the mandated budget of \$211 million. The battle of getting business to spend for good of society may be won through mCSR, but the war to make an impact in the society through this means is yet to begin.

Keywords: Mandated Corporate Social Responsibility (mCSR); Legislation

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Exploring trends in MNCs’ CSR communication strategy: a longitudinal analysis of CSR reports

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Purpose

This paper aims at exploring recent trends in CSR communication strategy of MNCs by conducting a longitudinal study of CSR reports through a content analysis. It offers a detailed study of the development of the social and environmental disclosure strategy of MNCs and of the factors driving the development of such disclosure.

CSR communication and the disclosure report are the focus of an increasing amount of attention by MNCs managers and researchers (Podnar, 2008; Du et al., 2010).

Communication is a pivotal part of CSR policy (Morsing, 2006; 2008). It is an important driver of competition and provides a corporate marketing tool enabling a strong corporate image and reputation (Hooghiemstra, 2000), the social legitimacy (Morsing, 2006), and the favours of consumers and other stakeholders (Podnar, 2008).

Morsing (2006) conceptualized CSR communication “as designed and distributed by the company itself about its CSR efforts” (p. 171), and Van de Ven (2008) identified three approaches to CSR communication. These latter include: 1. focusing on the basic requirements of conducting a responsible business to obtain and maintain a license to operate by the society; 2. making an explicit promise to the stakeholders and the general public that the corporations excel with respect to their CSR endeavours; 3. communicating the differentiation of products or services on the basis of an environmental or social quality.

Voluntary disclosure – used to provide formally report about CSR strategy in exceeds to more general information (Hou Reber, 2011) – represents a key complement of CSR Communication

Strategy. Even if social web sites and ad hoc advertising campaigns seem to acquire an increasing MNCs' interest, the social and environmental reports are demonstrated to still play the prominent role in CSR communication strategy (Van de Ven, 2008). They represent a free choice by company managements to justify their existence as moral agent (Gossling, Vocht, 2007) and provide evidence of MNCs performances of their social and environmental commitment.

Firms have incentives to provide voluntary disclosures. As suggested by European Commission "Disclosure of social and environmental information" disclosure strategy can facilitate engagement with stakeholders and the identification of material sustainability risks. It is also an important element of accountability and can contribute to building public trust in enterprises.

The Fourth Directive on annual accounts 2003/51/EC requires enterprises to disclose in their annual reports environmental and employee-related information to the extent necessary for an understanding of the company's development, performance or position.

Besides, thanks to the source CorporateRegister.com, it is estimated that about 2,500 European companies publish CSR or sustainability reports, directly leading EU in a position of global leadership; by the way the EU declares that it "is still only a small fraction of the 42,000 large companies operating in the EU, and promotes the social and environmental information among SMEs too".

Method

We conduct a temporal analysis of the recent trends in MNCs disclosure strategy by using a case study of the firm's operating in automobile sectors. In this industry issues such as pollution, waste resource depletion, product quality and safety, the rights and status of workers, and the power of larger corporation have become the focus of an increasing attention and concern (McKinsey & Company, Inc . 2013).

In order to analyze companies' social and environmental disclosure and understand their role in shaping the CSR communication strategy we will conduct a content analysis of Firms report published during the last five years (2009-2013) As Weber notes (1990), content analysis classifies textual material reducing it to more relevant, manageable bits of data. Our analysis use the NVivo Software in identifying and quantifying certain words or contents in documents to grasp their contextual use, and to discover underlying meanings of the words or the content (Hsieh and Shannon, 2005). More in detail we will perform an investigation based on two steps: first of all a content analysis based on frequencies, by taking into account all the documents we selected and to consider the 'stemmed words'. In this way it will be possible to create semantic areas and to select the most relevant issues through an abductive approach (Dubois and Gadde 2002), as we will combine the results emerging through the software with the knowledge we acquired thanks to our literature review. The semantic areas we will create can be considered as 'nodes' for the analysis through NVivo, leading to the second part of our investigation, namely the cluster analysis. It will be performed by linking the emerged nodes to infer on the relationships among them. The relevance of the emerging evidences will be considered by looking at the Jaccard's proximity index, as it is the most used among the indices proposed in the software.

Results

The paper develops how CSR communication strategy is proposed through firms' CSR documents and reports and how this strategy evolves towards addressing the interests and issues

of the widest firm's stakeholder's network. The comparison of the results in the different years will be useful to describe how firms have performed their communication strategy in the chosen range of time.

Firstly the results documented the tendency toward an improving quality of MNCs' reporting process. All reports include an increasing number of pages; with a more structured level of presentation identified by increasing topics linked to CSR: environment, community relations, diversity, employee relations, human rights, supply chains, government.

By looking at the relationships emerging in the range of keywords all the more recent reports guard a company's reputation and identity by engaging with the wider stakeholders set. The evidences display the importance to responsibility not only towards customers, shareholders or local communities but also suppliers, government, NGOs, policy makers. This issue is considered as the most relevant ones when communicating firms' approach to corporate sustainability. In this sense the terms of space devoted to environmental disclosures, as opposed to information on employee relations, community impacts, and supply chain concerns – social issues associated with the automotive industry – are not the most prominent on average, as in the case of the most dated reports.

Also what becomes more apparent is the increasing level of standardized information in terms of GRI guidelines or other internationally recognized guidelines. In terms of what types of CSR information automotive firms disclose in their more recent reports, our analysis indicates that these companies, similar to firms from other industries, tend to increasing focus on providing more relevant performance data that on simple discussing programs and initiatives. Mainly common to all of these investigations is that CSR disclosure appears to be not only much more about reducing exposures to social concerns than to giving more space into providing meaningful assessments of corporate social and environmental performance.

Implications for researchers and practitioners These findings suggest that reporting within the automotive industry appears to be about increasing social and environmental accountability. Companies become more experienced with standalone reporting are moving toward more transparent disclosures of their social and environmental impacts.

These results offer the possibility to ponder on three main consequences of this phenomenon.

Firstly as a number of authors debated (Hou, Reber, 2011), as long as the reporting remains within a voluntary regime, it will never be a tool of accountability and as such, there is the need to have more confidence that reports will reflect the actual operations of firms (Swaen, Vanhamme, 2005). This is the main responsibility for CSR practitioners, that is to assure the better coherence of CSR communication strategy alongside the different channels (report, web content, advertising campaigns) as well as to test the gap between CSR claims and actual responsibility firm' practices.

The second concerns the international configuration of MNCs which can influence the communication effect of CSR reports. The global context of automotive industry points out the need to better consider the differences of institutional contexts in which they benchmark with local rules and practices to gain social acceptance and legitimize their role as moral agent. The issues of country effects on MNCs legitimacy need to be further investigated. Some governments – as well as other institutions – in introducing different accreditation mechanisms, guidelines and standards for CSR practices and reporting, are less interested in the attempt to mandate corporate social responsibility and CSR reporting, and more into promote standards to hold companies accountable for their actions.

Finally and strictly tied to the previous issue there is the need to better consider the communication target of MNCs report. Communication is a mediated tool for people engaging in relationships with similar/dissimilar and familiar/unfamiliar people or organizations (Pomeroy, Dolnicar, 2009).

So people will process information in a more abstract manner if people are culturally distant, and particularly relevant to stakeholders' perceptions is their cognitive and social distance. Similarity or dissimilarity thus reflects judgments about whether stakeholders and companies share certain values, and can give a certain meaning and interpretation to CSR report. It is believed that the prominence is more on the stakeholders' evaluation of MNC' and the recent interest to external endorsements (Perks et al., 2013) involving unbiased sources could become an integral part of many organizations' advertising strategies.

Limitations and further research

This paper offers a detailed study of the development of the social and environmental reporting strategy in automotive industry. The focus is on the disclosure strategy of MNCs and of the factors driving the development of such disclosure.

A new step of the analysis will be done to perform a deeper investigation based on the documents we already clustered and in mixing clustering and factorial techniques.

Keywords: *CSR communication, disclosure strategy, CSR reports.*

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2014 Survey on University of Maribor as a sustainable and socially responsible University

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Sustainability and social responsibility are, officially and in reality, preconditions for the humankind to survive, but not all people know and accept this fact. Awareness is a precondition for action. Insight into awareness and facts is a precondition for impact over awareness. The University of Maribor (UM) is trying to make its contribution, which will be discussed here from the viewpoint of making a survey as a first step in making the political statements a practiced reality. UM's documents calling it the sustainable and socially responsible University of Maribor (SSRUM) were passed in 2012-2014, including an official action plan for 2014-2020. Perhaps UM's students and employees know or do not know enough about SSRUM and can/will or not join the needed actions. The survey that we are presenting here might help.

Keywords: *European Union; ISO 26000; Slovenia; Social responsibility; Survey; Sustainability; Sustainable and socially responsible University of Maribor (SSRUM); University of Maribor (UM).*

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The Relationship between an Organization and its Local Area's Stakeholders: An Analysis based on Social Reports by Italian Universities

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New technologies, environmental issues, and, using a broader perspective, the economic crisis we all have endured in the last few years can all be considered phenomena showing that the relationship between organizations and the local area they insist on cannot be analyzed looking only at the economic impacts, even when considering the indirect ones, but have to take into account the other effects as well.

This more general effect is even more noticeable when you look at big organizations. These organizations do not affect society only through their goods, and services, but they impact on several classes of social actors as a consequence of the actions they carry on in order to reach for their own objectives. Focusing on these, bigger, organizations you can easily see as their impacts on the society are really multi-level constructs with effects manifesting not only on an individual level (the micro-level) but at a community one (the meso level) and at a regional level as well (the macro level).

Universities can be seen as a typical example of these big, complex, organizations; moreover the multi-faceted effect universities have on society has been widely acknowledged in defining their own mission on three main directions.

In fact if once universities activities revolved around two main streams, or missions if you prefer a US-based label, in the last twenty years they have been given a third mission to accomplish. University's first mission has always been to educate young generations and to diffuse technical and professional competences. Their second mission is to focus on research activities, both basic and applied, in order to create new knowledge that can be later used to create new products to help humanity go forward by the university or by some other social actors, the third mission.

The third mission these organization have is needed to make them an active player in the social development processes in the local area sustaining the creation of new economic activities and helping the social and cultural development as well.

Obviously the third mission depends on the human resources the university can rely upon and its social side asks universities to have a longer run perspective in order to help in creating a

common set of resources in the local area through knowledge, skill and competences, diffusion processes. So these organizations can effectively pursue all three missions only when they are able to create stable and fruitful relationships with other actors in the local area.

The multifaceted relationship of an organization with the various other actors in the society has today a central role in strategic management research (Dyer, Singh, 1998) and they have been acknowledged as one of the factors effective managers should take into account in defining the organization new courses of actions (Borgatti, Foster, 2003). This view is usually referred to as stakeholder management theory (Freeman 1984; Donaldson, Preston, 1995) and it asks managers to look at the organization's stakeholders – I.e. those groups or individuals who can affect or be affected by the achievement of the organization's objectives (Freeman, 1984).

According to this theory the organization is seen as only one actors of a broader, and more complex as well, web of stable and mutually influencing relationships where economic, social and cultural effects are tightly connected and where the links between the various actors can amplify the positive effects, and the negative ones too, the organization activities has upon each single actors (Ekeh, 1974; Wick, Harrison, 2013).

A deeper understanding of the characteristics of the web of relationships binding the organization to its own stakeholders can be reached using an holistic perspective as the one used in system thinking (Boardman, Sauser, 2008). Using a systemic perspective to analyze the effects of an organization on a given local area let us focus, at the same time, on the whole system and on the relationship between its parts and to take into account the various resource flows between the actors lined by each single relationships and how they can cause each actor to change. It is a multi-level analysis that tries to understand how the various analytical levels (micro, meso and macro as well) do interact between themselves.

In this paper we propose to use university social reports to analyze the effects universities have on their various local area's stakeholders. We have decided to use root our analysis on these reports as they are written to report on all the various impacts a given organization has on the society according to an holistic perspective that goes beyond the mere economical perspective in order to look in the environmental and on the social dimensions too. In these way these reports can help in understanding the real complexity behind each university activities.

Moreover using these documents let us assess not only how the various stakeholders are affected by the university's activities but even if they are actively involved in them.

Our research objectives are twofold. Our first objective is to understand the main, most diffused, standards of social reporting these class of organizations uses to define their own impacts on the local area, defining their main common characteristics, and to assess if they have changed over the years in order to follow both the enviromental changes and the new revisions each standard has defined in these periods (for more information see Global Reporting Initiative and/or the GBS Association). Our second objective is to get an holistic perspective on the structure of the various impacts each university has observed; in order to reach this objective we'll use systemigrams in order to define the various structures following the model overlay methodology (Checkland, 1999) in order to comprehend how these models do compare between them and if we can use them to obtain new common root definitions.

Keywords: *Local area's stakeholders; Social reports; Italian Universities*

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Child labor and business ethics: The approach of apparel companies

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In the age of globalization the issue of business ethics, defined as “*the theory and practice of the responsibility, ethics, and legitimacy of corporations in a globalized society*” (Rendtorff, 2012), is particularly relevant because of the thick network of relationships organized by the companies all over the world. From this point of view responsible initiatives cannot be limited to a philanthropy orientation but they have to be characterized by the application of ethical principles starting from the selection of suppliers to the relationship with customers and consumers, including all the stakeholders (Goodpaster, 1991). One of the most critical aspects to analyze in terms of ethical choices is related to suppliers chain, which represents a particularly delicate issue, especially considering the tendency of the western companies to choose low cost countries suppliers as source to achieve a competitive advantage (Baldassarre, 2012). Obviously this policy implies ethical questions because of the different conditions of work in those countries in particular in reference to workers’ rights in terms of health and safety (Kiggundu, 2002). A policy based on an accurate selection of suppliers is possible when companies are well aware about their impact on society and, furthermore, about their reputational risks which they would jeopardize in the case of ethical-type mistakes: the ethical choice has, therefore, consequences both from a moral and an economic perspective. From this viewpoint companies can certify their ethical commitment through the request and the attainment of some certifications such as SA8000 (Gilbert, Rasche, 2007) and OHSAS 18001 (Zwetsloot, 2003), which can represent important communication tools with the stakeholders, as well as another kind of tool that companies could use to show their inspiring ethical principles, the Code of conduct (Adams et al. 2001).

In this research the focus is on a particularly thorny question which is child labour (Basu, 1999). According to the International Labour Organization this is a phenomenon widespread in particular in Asia and Sub-Saharan Africa (ILO-IPEC, 2013) and some European and North-American companies have been accused of exploitation of juvenile labor in the past, for example Nike in reference to soccer ball production in Pakistan (Beer, 2010).

Starting from this foreword, this research shoots for analysing the approach of the largest companies to this issue, in particular examining their code of conduct: specifically the focus is on the largest apparel companies, often in the eye of the storm for ethical controversies, in particular for the lack of respect for workers’ rights. In order to better comprehend the orientation about this

problem, four companies have been selected from the Forbes largest companies ranking: in particular the researchers have investigated the code of conduct of two apparel and footwear retails (the Spanish Inditex, owner of the brand Zara, and the Swedish H&M) and two apparel and accessories companies (the American Nike and the German Adidas). The main research question is: what is the approach of apparel companies to child labor? Are there moral and economical implications?

After the researchers have verified that all the four selected companies publish a code of conduct, they have verified, through a content analysis of this document, the existence of references about the policy adopted against suppliers who exploit child labor. In the following table there are the main findings.

Table 1: Summary of findings

<i>Company</i>	<i>Limit of age</i>	<i>References to international standards</i>	<i>Other features</i>
<i>Inditex</i>	<i>16 (or a superior limit if provided for by national laws)</i>		<i>16 to 18 aged boys and grls are considered young workers: they cannot work during night hours and in dangerous conditions</i>
<i>H&M</i>	<i>14-15 (or a superior limit if provided for by national laws)</i>	<i>UN Convention on the Rights of the Child and International Labor Organization standard</i>	<i>Acknowledgement that until the age of 18 a person is considered a child (UN convention) and acknowledgement of children's right to be protected from economic exploitation</i>
<i>Nike</i>	<i>16 (or a superior limit considering the national law)</i>		<i>Until the age of 18 they cannot work in dangerous conditions</i>
<i>Adidas</i>			<i>No references to child labor</i>

Source: Authors' own elaboration

H&M is the company which provides more information, also making references to important International standards unlike the other selected businesses. The most unexpected finding is relative to Adidas because of the absolute lack of references to child labor, in spite of the publication of a code of conduct, and the modest quantity of information provided in general by those companies. The situation is not changed compared to a decade ago: as a matter of fact Kolk and van Tulder (2002), in a similar study, showed that the limits of age were substantially the same, so during these years there were no improvements.

From a communicational point of view these codes of conduct can represent good tools but not sufficient to show the concrete approach of companies: the lack of transparency could be very negative for those companies which decide to represent a false reality. Information about child labor, moreover, demonstrates that this is a widespread phenomenon and, in any case, involves also minors considered children by the UN, implying ethical problems. The moral issue can have also a negative impact on companies' reputation and this can cause actions of boycott by consumers.

Keywords: *Child labor; Business ethics; Apparel companies*

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Corporate Ethics within an Integrated Model of the Organization as a Cognitive System of Efficient Transformation

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The objective of this study is to show how individual ethical behavior, at all levels of the organization, is both a pre-condition for the success of Corporate Social Responsibility (CSR) initiatives and one of the conditions for the existence of the corporate system, when the latter is understood as a long-lasting organization composed of individuals, or as an institution, which, in order to achieve its internal objectives, produces outcomes evaluated by the outside stakeholders. In the past, the generally accepted view on morality and business was that they do not mix. To act morally was to act weakly, and in the business arena this means that companies were dead companies. The situation now is changing. In today's business arena, companies are finding that immoral behavior can prove dangerous. After the scandals on Wall Street in the 1980s and the massive corporate scandals of the past 10 years, business ethics are becoming more and more important (Street, Street, 2006).

We consider business ethics to be the moral principles that guide the way a business behaves toward its internal and external stakeholders. The same principles that determine an individual's actions also apply to business (van der Merwe, Berthon, Pitt, 2003). Business ethics has now become an important component of CSR. Over the past decade, CSR has emerged from its philanthropic foundations and broadened with respect to its narrow association with instrumentalism. It has shifted from a “corporate-centred” to a “corporate-oriented” concept extended to “new accountability” principles (McBarnet, Voiculescu, Campbell, 2007), and it has become an important part of new governance systems. CSR now involves government, business and civil society (Scherer and Palazzo, 2007) and is necessarily connected with business ethics.

This study undertakes a theoretical analysis which, shifting from a general conceptual framework on the topic, analyses ethics in the context of CSR and the conditions for the firm's existence while taking into consideration the literature of reference (Evan, Freeman, 1988; Bowie, 1991; Clarkson, 1995; Windsor, 2002; Phillips, 2003; Werhane, 2007; Goodstein, Wicks, 2007).

This study starts from a view of the firm as an organization that, by interacting with the environment in various degrees, produces goods and services, economic value, employment, social welfare, etc., acting in a framework of local, national and transnational ethical systems (which often are not coherent) that cannot be ignored and, above all, opposed as regards both the firm-environment and internal organizational relationships.

In order to properly carry out this analysis two theoretical approaches are examined.

In the first approach the firm is viewed as a social or “cognitive” social-technical system that is open regarding exchanges with the environment, from which it is separated by a boundary and to which it is structurally coupled through input, output and outcome flows (Mella, 2014). The systems approach adopted allows the firm-environment relationship to be explained: the firm’s economic system is viewed as a particular moment in the socio-economic system, which is made up of all those holding internal economic interests in the firm, which in turn represents a moment for a larger social system. Every system has its own operating logic that in the first instance and in the short run tends to satisfy its own conditions for existence. The tendency for an open system to maintain its structural project despite variations in its components defines its teleonomy; that is, the project, shared and positively valued by the stakeholders, which allows the system to remain vital in the environment of which it is a part. We can distinguish between exogenous and endogenous teleonomy. The former can be considered as the tendency of the firm to remain in existence due to the fact the environment appreciates its outcomes and considers it useful. The firm’s outcome that is appreciated by the environment and its ethical behavior represent fundamental conditions of vitality for the institution. Endogenous teleonomy expresses the systems tendency to remain vital by maintaining the efficiency and productivity of its structure.

Open systems are also dynamic “cognitive” systems that evolve in space and over time by modifying their states in relation to the internal knowledge of the external states of the environment. Teleonomic behavior leads the system to control its states based on its cognitive capacity to perceive or foresee environmental changes in order to continually adapt to the changed conditions, even going so far as to change its original structure.

The paper also deals with a second theoretical approach. The organization, as an open system and under its conditions of teleonomy, is observed as a “cognitive” system, based on the Model of the Organization as an Efficient System of Transformation, or MOEST (Mella, 2014; Mella, 2005). The organization continues to exist only by efficiently carrying out the following five types of transformation:

1. The productive transformation; this is a transformation of utility: volumes of factors of production having a given utility are transformed into volumes of products able to provide a greater utility based on rules of efficiency aimed at maximizing productivity and quality.
2. The economic transformation; this is a transformation of values: firms try to maximize economic efficiency through market choices that yield the maximum gap between revenue and cost of production, and thus the maximum operating result.
3. The financial transformation, through which the firm finances its economic processes with risk capital and debt capital, thereby raising the invested capital that optimizes the operating leverage, taking account of the cost of capital and its yield.
4. The managerial transformation, through which the operating objectives and the internal and external information are transformed into decisions aimed at maximizing efficiency (Mella, 2014) Davenport, 1993; Lax, Sebenius, 1986). The heart of this transformation is an effective and efficient control system that operates in an ethical manner.

5. The entrepreneurial transformation, through with the information gained from the external and internal environments are transformed into models of knowledge from which strategies are derived; that is, “actions” to modify the firm’s strategic position and allow it to produce a strategic path to remain vital for an indefinite period of time.

The first three are technical-instrumental transformations that serve the firm in its interactions with the environment by producing output and outcomes. The fourth and fifth are cognitive transformations, through which the organization decides on its interactions with the economic, social and political environments, and inevitably, in part through human and communication flows, produces knowledge, trust and reputation (Prahalad, Bettis,1986; Harrison, St. John, 1998).

This is a functional model of the organization-firm as a “cognitive” system, and it is complementary to Stafford Beer’s model (Beer, 1979, 1981), universally known as the Viable System Model, or VSM (Beer, 1979, 1981), which proposes to be a structural model.

The aim of any organization-firm is to create value for the organization itself and for the different categories of stakeholders who have an interest in it and are socially recognized. The systemic creation of value entails the respect of the condition of economic equilibrium over time. The behavior of an organization must therefore be placed in context and interpreted with reference to a vaster time frame, where organizations and territory are viewed within a framework of interactions and of reciprocal and continual interdependencies. In this sense they become actors, engines that are responsible for the environment’s development (Wilson, 1999), capable of producing environmental and social value and of avoiding the production of negative environmental and social value that takes the form of damage to the environment.

It is precisely with regard to the evaluation of this capacity for a positive interaction with the environment, to the tendency for the entrepreneurial transformation not to focus only on the firm’s economic growth but also to produce an environmentally-sustainable internal growth that remains within the recognized ethical boundaries, that the reputation of the firm as a social actor is formed and strengthened (Gazzola, 2007).

Therefore we must consider the firm not only as an internal system of instrumental transformations but also with regard to the internal socio-economic environment, as a subsystem of a vaster social system, without ever ignoring or underestimating the need for the overall system of transformation to obtain satisfactory flows of economic production that allow it to achieve and maintain in the strictest sense the conditions of efficiency for the system of MOEST transformations. Thus, an adequate level of operating results is also a condition for allowing the financial transformation to remain efficient, thereby producing returns on equity capital (roe) and debt (rod) judged to be fair by investors, taking into account the risk they are willing to bear.

In the same manner the organization-firm must act to satisfy the conditions of existence of its social structure, since only the continuity and development of the individuals that comprise it can allow it to produce ethical behavior and to maintain its equilibrium as a long-lasting institution.

From a similar perspective, in evaluating the activities of an organization as a social, cognitive system of efficient transformation various factors arise which are also linked to the organization’s ethical-social behavior as such and to its members in their role as recipients of information and actors in the processes. These considerations take the analysis beyond a strict examination of economic and industrial performance (Sciarelli, Tani, 2013).

Thus, through the two theoretical approaches adopted this study seeks to present the firm as a cognitive system of efficient transformation and to demonstrate that the analysis of the performance of the systems of entrepreneurial transformation are indispensable for directing the

firm's activity toward the creation of value for itself and its stakeholders, thereby ensuring conditions of economic and financial equilibrium and favoring the consideration of ethical and social aspects as part of the strategic objectives of the firm.

Keywords: *Corporate Ethics; Cognitive System; Efficient Transformation*

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Some aspects of (attempted) fraud via e-mail

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From the historical point of view mail can be considered as product of human needs for communication. Generally speaking, communication can be perceived as interaction between two or more elements oriented towards each other. Theory of communicational systems usually defines communication as bipolar relationship between emitter and receiver of matter exchanged during the communication. Usually the matter is presented by data or information which emitter and receiver send to each other in a form, usually named message.

Theory of information defines the whole process as communication channel. From this aspect such communication can be observed as generator of changes in a society. Probably from the very beginning a need for organised transmission of messages originates and equates organisations and messages on the level of synonyms so both institutions are defined as post. Post as communication in principle indicated private relationship between emitters and receivers, while transmitter – post as organisation had to insure privacy.

As organisation, post emerges at institutionally highest level of social constitution at the state level. Since the communication between two persons is their personal matter in all elements that define it, post necessarily should regain all specificities that ensure private relationship between emitter and receiver.

Traditional process and organisation of post and post traffic are still under state governance. Regulation of post traffic is determined by related law of post traffic. This one is defined in Republic of Croatia as Law of post, while in Bosnia and Herzegovina it is named as Law of post traffic. Laws differ in smaller details and they prescribe conditions and ways of organizing the post traffic. Law includes sanctioning of irregularities by determining shapes of indemnification of eventually damaged party and sanctioning of offender. Both mentioned laws define forms of post packages and security conditions of their transfer.

Since mode of transferring electronic mail is connected to communicational infrastructure, regulation of electronic mail is usually determined at state level, but usually under the power of state agencies such as agency for telecommunication or electronic media. Within frames of those laws, electronic mail can also be defined.

Namely, the subject of consideration in this paper is electronic mail, but authors also tried to appoint certain hypothesis starting with their own perspectives. That way problem is observed from organisational point of view, as post traffic is concerned, legal regulation of the same and basic information terms and relationships. Similarly, the following hypotheses have been defined:

1. Electronic mail is form of communication in which senders aren't always familiar or are wrongly presented, by which they are in offence.
2. Sender doesn't have to have legally right motivations for sending the mail so he can do damage to receiver, on purpose or vice versa.
3. Sanctioning of offences or inappropriate behaviour within frames of electronic mail is usually more damaging then in case of classic post and other forms of communication.
4. Motivations for inappropriate activities in electronic mail can be classified but there is no common classification.
5. Criterion of classification is determined by research goal and is simultaneously goal of research.

Data relevant to research are:

1. Data (generally) (Note: Data was collected over a period of four years only on author's private/official e-mail.
2. Eventual personal data of sender
3. Domain and sub-domain, location
4. General location of sender
5. Motive of a sender; Overview of data and reasons of the research; Defining the hypothesis. The analysis of communication between sender and receiver of electronic mail, for purposes of this paper, assumed following conditions and relationships:
 - Sender and receiver are participants in communication of a common-post type, but in a specific environment
 - Environment is a combination of a real and virtual milieu, with real environment partially included in the process
 - Sender and receiver are voluntary participants of communication so they can end it any time they want to
 - Sender and a receiver do not have to know each other at the beginning of a communication
 - Motive of communication at the very beginning isn't familiar to both parties of communication
 - Communication is timely discontinued, but as a process it had its duration time which isn't defined at the beginning of a communication
 - Eventual consequences, unfavourable for sender and receiver can be presumed but not familiar
6. Day when post has been sent. Period of sending mail
7. General definition of post content
8. Possible action of the receiver

Personal data of sender are usually wrong that is incorrect. Wrong identification is consequence of fact that senders are aware either of impossibility either unwillingness of receiver to spend certain amount of time to research reliable and safe data. Since majority of senders ask feedback information and making the contact with receiver, certain data of motive and purpose of sender cannot as possible feedback message be checked in way to define whether sender is malicious or not.

Inapt communication in form of steal and deceptions over the internet and e-mail are today a part of everyday life. So far, this refers only to that part of population which has an opportunity to use internet and electronic mail. It has already been mentioned that this type of communication recognizes three basic members and/or elements: sender, transmitter and receiver. Due to proper treatment of participants and objects transmitted in that same communication, it is necessary to profile them.

All irregularities do not have to be intentional and regularly they are a consequence of ignorance and lack of information. If they are planned, then it is certain the one who initiates disputable processes has skills required to produce them. If the final result of inappropriate electronic mail is deception or steal, the initiator is a felon who needs to be sanctioned. If these initiations happen in work place, it puts the additional legal weight and requires strict treatment and sanctioning.

Receiver who doesn't know all techniques and methods a felon can use by initiation, that is, consent to the process of deception, bears a part of responsibility. The third part, which isn't irrelevant at all, is eventual irresponsibility of service provider or, to put it in traditional language, post operator.

From the legal aspect, profiling the operator is the simplest solution since the global nature provides more advantages than disadvantages. Finer profiling of sender and receiver requires psychologist that exceeds frames of this paper

Legal treatment of traditional post traffic has its history and long and good theory and practice. Constituting factual and material condition in such circumstances doesn't have to be a problem, though extreme specificities are possible. Post communication includes usually two mail participants though those two don't necessarily have to be the individuals. Traditional mail doesn't recognize circular letters and their possibilities. However, when frontiers of the real world are replaced with virtual surroundings, possibilities of circular communication become boundless. Then even the minor financial investment – a result of deception can reach value beyond common sense. This is a moment in which electronic mail thoroughly moves away from norms that rule traditional post traffic. It should therefore find ways of respecting the procedure. In traditional frames one can always find material evidence of attempt and eventual realisation of deception that can be used in a possible plea.

Keywords: E-mail; Fraud

Sustainable development to steered stakeholder engagement

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Objectives

Studies on the development of sustainable behaviors, of institutional and economic actors, seem to be characterized by two elements.

The first concerns the need of a collaborative approach that embraces the perspective of stakeholder engagement. This element have had a strong application in business literature which has dealt with the implementation of sustainability strategies in terms of firm, network and local system.

Another element, which is emerging in the proposals for the implementation of sustainability projects, that involve businesses too, is the interest towards governed forms of cooperation, forms in which there is a commitment of a group of important actors from different origins to a common agenda for the development of sustainability projects.

This paper analyses the possibility to implement a steered collaboration for dealing with a complex sustainability problem and for enabling a process that could actually lead to the development of initiatives in the interest of all and for the common welfare.

The engagement for sustainability projects

Recently stakeholder engagement is becoming the preferred approach to implement sustainability pathways. This perspective asserts a core value: the position of responsibility required of firms and stakeholders in order to engage in the sharing of information, in the construction of a dialogue and in an ongoing commitment to solve problems together (Svendsen, Laberge, 2005).

The relational aspect is a key element, the creation and subsequent consolidation of the social capital of the company is strategic, because it represents the "glue" that holds together the social relations (Putman, 2000; Ayios et al. , 2013).

Acting responsibly means supporting investments and costs, as well as forming appropriate skills, which are often unaffordable actions for a single actor, especially for a small and medium size firm. Many are the studies in which it is suggested to implement strategies for corporate social responsibility (CSR) based on a cooperation between companies and institutions, either local or national, partly because the wide participation of more actors will enable the development of larger projects. This will allow these actors to enjoy the benefits deriving from them, both inside—for the companies belonging to them—and outside—for the beneficiaries of projects. The expanded involvement stimulates the exchange of skills, but also of instances and needs; it legitimates projects and provides them with the necessary conditions to be developed and

effectively achieve the estimated results. They are the conditions that are defined by some authors as a relational state (Albareda et al., 2004), or by others, from a different perspective, collaborative governance (Zadek, 2006), or even corporate responsibility and responsible competitiveness clusters (Zadek et al. 2003). Moreover it was noted that the intensity of the "mechanism of contamination" between different actors belonging to the network and the "modalities of communication" affect the ability of the individual components to implement structured systems of sustainability and influence the degree of social responsibility of other actors in the network (Caroli, Tantalo, 2011).

A particular line of research analyzes the collaboration among the actors in the supply chain in terms of sustainability: logistics social responsibility, purchasing social responsibility (Carter, Jennings, 2002), as well as sustainable supply chain management (Teuscher et al., 2006) are some approaches that emphasize the effectiveness of the adoption of CSR practices in a collaborative approach to management, aimed at involvement of stakeholders at different stages of the implementation process (Vurro et al., 2009). The supplier plays a strategic role in the implementation and success of the strategy of corporate social responsibility (Murphy, Poist, 2002; De Chiara, Russo, Spena, 2011); moreover it is considered a best practice to develop CSR strategies in consultation with the main suppliers and other stakeholders in the community of a firm.

Collaborating with stakeholders to pursue sustainable behavior triggers the participatory process that allows to reach the formulation of shared objectives and actions, so that—first of all with regard to the actors of the supply chain—liabilities, costs and benefits are well balanced throughout the production chain. Also by expanding the range to include in the participatory process the market, the institutions and the entire community, a joint and shared action can be achieved by all stakeholders with the aim to pursue sustainability projects directed to a common goal.

Therefore we can say that the development of sustainable strategies is more and more a collaborative process, it is a co-sustainability, which shows itself in different ways. First of all, through a pattern of behavior common to most economic actors, inspired by sustainability, that is to say to those cardinal principles of environmental protection and human rights, as well as declined in the international codes of conduct (Green Paper of EC, Guidelines of OECD) designed and implemented within B2B relationships, or network of companies belonging to the same chain or chains that are intertwined in the production of semi-finished and / or finished products. Among the participating actors this model is supported by the exchange of knowledge and skills, that not only stimulates the members of the network to the research and implementation of better solutions, but it will especially avoid dystonias in actors' behaviors that would undermine the effectiveness of the project and achievement of the goal of sustainability. In fact, the credibility of a sustainability project in relation to a product/service or process regards its impact in terms of an actual effect on the whole community. Therefore, a wide participation, such as those involved in the supply chain, will prevent the reduction or cancellation of a company's impactful actions by the unethical behavior of other actors belonging to the same chain.

Another way to development sustainable projects is the collaborative behavior which allows a wide participation of stakeholders—including also the institutions and the community—will really foster high-impact initiatives, it will allow to share objectives and actions to be implemented with the ultimate aim of achieving a really common good. The institutions have an important role to balance the distinguishing of different actors of the network so that it constitutes an effective resource for development. The local institutions engagement is essential: "local

solutions of civic-engagement and self-regulation are playing an increasing role in guaranteeing successful interaction in everyday-life” (Spence, Schmidpeter, 2003). Therefore, next to the work of companies to connect with other economic actors and institutions taking advantage from their social capital, there is the work of institutions in order to develop policies and services for companies, to value the networks and their knowledge, to value territory’ aptitudes and inclinations, to create the conditions so as even the small-size companies can increase their contribution to the common good (Iannone, 2007).

The “steered” collaboration

Together to the engagement, another variable seems to lay down in order to make possible a sustainability project, that is an structure, an “oversight room”, that focuses on the relationships between organizations and the progress toward shared objectives.

If the goal is to consolidate the pair of economic and social competitiveness and to act in a responsible manner, then the burden of a single actor is, to say the least, untenable and the participation of more individuals with specific instances, included the local institutions, becomes an almost obligatory way. But the wide participation of these different actors requires a more structured process to govern roles, functions and contributions of participants.

One of the approaches which stresses the need of these conditions is the collective impact perspective. This perspective underlines that “large-scale social change requires broad cross-sector coordination”, a commitment of a group of important actors from different sectors to a common agenda to solve a specific social problem (Kania, Kramer, 2011). This perspective stresses that the traditional collaborations types, such as Funder Collaborative, Public-Private Partnerships, Multi-Stakeholder Initiatives, Social Sector Networks Organizations, have failed in the attempt to solve complex social problems. The collective impact is a type of collaboration which solicits a separate organization(s) with staff and a specific set of skills, a structured process to create a common agenda, shared tools, a continuous communication and mutually reinforcing activities among all members (see table 1).

Tab. 1: Five conditions of collective success

<i>Common Agenda</i>	<i>All participants have a shared vision for change.</i>
<i>Shared Measurement</i>	<i>Collecting data and measuring results consistently across all participants ensures that efforts remain aligned.</i>
<i>Mutually Reinforcing Activities</i>	<i>Participant activities must be differentiated while still being coordinated through a mutually reinforcing plan of action.</i>
<i>Continuous Communication</i>	<i>Consistent and open communication build trust, assure mutual objectives, and create common motivation.</i>
<i>Backbone Support</i>	<i>A separate organization(s) with staff and a specific set of skills to serve as the backbone for the entire initiative and coordinate participating organizations and agencies.</i>

Source: adapted from Kania and Kramer, 2011

Wide participation to different stakeholder, but above all changing members’ behaviours, are important for the success of this kind of collaboration: it “is not merely a matter of encouraging more collaboration or public-private partnerships. It requires a systemic approach to social impact

that focuses on the relationships between organizations and the progress toward shared objectives (ibidem, p. 39). “The expectation that collaboration can occur without a supporting infrastructure is one of the most frequent reasons why it fails” (ibidem, p.41).

Surely not all social problems demand a solution through the collective impact approach, but the presence of “adaptive problems”, recognized as complex problems (e.g. reforming public education, environmental pollution, healthy of community, ect.), makes no companies able to produce the necessary change.

The empirical research

The case of the territory recently defined as “land of fires” in Campania, Italy, could be good example in which apply the perspective of collective impact.

The empirical study starts from the results that have been reached in an earlier work (De Chiara, 2012) that placed the territory at the centre of the SMEs’ competitiveness that produce dairy products, in particular of buffalo business, located in the territory of the Agro Caleno in the province of Caserta (Campania), area which belongs to the “land of fires” .

A succession of crises of environmental and health nature have characterized this area, creating serious difficulties for the structural stability of many businesses characterized by many DOP productions, and to the entire community.

The analysis conducted is a qualitative one, with documentary research and direct survey on firms and on local municipalities of the investigated area.

The new research shows the strong strategic importance of the decision to set up a network among the actors of this supply chain and the local institutions to deal with the consequences produced by the environmental issue. But, although there is a good level of cooperation, the network has not produced the estimated results. Besides, although a series of interventions at regional and national level have been issued to address the problem, firms declare that the attention of the national and local institutions is focused on the implementation of plans aimed at the reclamation of the territory affected by the crisis. These interventions are not membership of businesses located in the area because they consider such activities prohibitively expensive and inadequate for the resolution of the matter.

These facts corroborate the opinion that for producing a consistent and effective result toward the solution of a complex problem, such as environmental pollution, it is not only required a cross-sector public and private partnerships, but rather it is necessary to initiate a systematic approach focused on the relationships between different stakeholders and the progress towards shared goals in the perspective of collective impact, that is: a common agenda, shared measurement, continuous communication and mutually reinforcing activities.

Keywords: sustainability; stakeholder engagement; social capital; collective impact; complex problems.

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**CORPORATE GOVERNANCE AND VENTURE CAPITAL FOR
SME IN THE GLOBAL CONTEXT**

Assessing IT competences of boards of directors: perceptions of Malaysian CIOs

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Information technology (IT) systems are becoming increasingly indispensable for organisations in their daily operations. Organisations therefore invest considerable capital in IT assets to support the IT needs of employees and other stakeholders. As the contemporary global business environment becomes increasingly reliant on IT, the need for IT to be governed effectively and efficiently grows. Boards play a critical role in the governance of organisations, yet despite the continued call for improved IT governance, there has been little research into how boards actually govern IT. Current research indicates boards appear to struggle to understand the state of IT within their companies and/or they lack appropriate IT skills in discussing IT issues.

This study therefore assesses IT competences of boards using a model developed from a review of IT competence frameworks in three domains, namely IT organisations/associations, professional accounting associations and academic research. The model is then tested, using Malaysia as a case study to evaluate the level of Board IT competence. Malaysia was chosen in light of the attention drawn to corporate governance in the 9th Malaysia Plan report.

A survey instrument extracted from the competences model lists 33 current critical IT issues facing boards. It then asked chief information officers (CIOs) of companies, to evaluate the importance of each issue and the level of competence the board has to deal with them. The results appear to show that there is a gap between the importance of issues and the level of IT competence boards currently hold based on what CIOs consider appropriate within a company. The findings will contribute to the research base on board IT competences from a Malaysian perspective thus highlighting areas for further improvement. If successful, the model can then be used to evaluate the state of IT governance in other international domains.

Keywords: IT competence, boards of directors, IT governance, CIOs, Malaysia.

Shareholder Rights Directive and General Meetings: Towards Real Public Companies in Italian Market? The Telecom S.p.a. Case

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The objective of the study is to analyse whether, as consequence of the implementation of the Shareholder Rights Directive (2007/36/EC, 2007), the ownership structure of Italian listed companies has been changing and this typical insider financial system is becoming – at least potentially - more open to market (Berglöf, 1997; Franks, Mayer, 1995; OECD, 1995).

The research starts by presenting the main new provisions introduced in Italy by way of implementation of the Shareholder Rights Directive and by explaining how they have changed the previous regime. The threshold required to call a special meeting has been reduced (halved from 1/10 to 1/20 of the share capital); share deposit to vote has been prohibited and, symmetrically, the record date has been introduced; proxy voting and its solicitation have been deregulated (by abolishing the legal reserve in favour of financial intermediaries required since 1998 - when proxy solicitation was firstly regulated – and relaxing authorization procedure). It is interesting to note that the new provisions consisted of a set of mainly procedural rules.

The second part is the study of the consequences produced by these new rules on general meetings of Italian listed companies. Is attendance of gms actually increased? Who are the shareholders who attend gms and how attendance has been changing for each category of them? Relevant data will be presented. However, findings can already be summarised by stating that, since 2010, the once lifeless Italian general meetings have been vigorously shaken-up just because of the amendment of merely procedural provisions. In particular, comparing thresholds reached in 2009 (before the new legislation was in force) and in 2014, attendance and voting of foreign institutional investors have been more than doubled while attendance and voting of core shareholders have been decreasing.

The third part of the study will analyse the consequences of the increase of voting power exercised by foreign institutional investors on the ownership structure of Italian companies. From the above mentioned data, can we infer a change in the ownership structure of Italian issuers where there is a de facto control? It is obvious, by contrast, that if core shareholders own the majority of share capital no possible influence can derive from the increased voting power of minority shareholders. It will be shown that, at least potentially, the new procedural rules may increase competitiveness of Italian companies in situations of de facto control and ease the possibility of having real public companies. The case study founding this thesis will refer to Telecom s.p.a. “saga” by showing data referred to the 2011 and 2013 general meetings.

Keywords: *Shareholder Rights; Public Companies; Italian Market; Telecom S.p.a.*

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Time-Driven Activity Based Budgeting and its implementation in a manufacturing company

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Traditional accounting methods have failed for the complex and competitive work environment when strategic information is required. Strategic objectives for management decision-making process are of vital importance for organizations. The strategic management must have appropriate answers to questions: why? how? When? Where? and who? Management is vital in the process of granting the right decisions when managerial accounting tools are expected to provide innovative. Traditional systems are widely used by nearly three-quarters of the cost of manufacturing companies. Standard processes, similar and limited production lines, the production of high direct costs will be more accurate than the use of parts of the traditional cost systems in the literature. However, direct costs, overhead expenses, in turn, decreases the burden of increasingly sophisticated production facilities, a situation that led the researchers to look for the cost of traditional systems of alternative techniques. As a result activity based costing systems have been developed. It helps to explain the differences caused by excess capacity "Time Driven Activity Based Cost System" have been used. Time- driven activity-based budgeting method, which uses data based on time-driven activity-based costing method. This method helps to take decisions for future related demands in fast, more accurate manner. This method uses the company resources more effectively.

This study was carried out in order to find out the applicability of time-driven activity based budgeting method at manufacturing companies in Turkey. The results obtained from the application of time - driven activity based budgeting system can be summarized briefly as follows. Company makes the application through different processes and different products are sold to different customers. For this reason, resource consumption levels of the products vary. Be taken into account in determining the cost of time consumed in the product gives more accurate results. Down to the cost of the follow-up activities with the factory Time-Driven Activity Based Costing it is possible to do. Just when you need to update the equation will be determined and put in place are sufficient. Time based on the time allocated to the activity-based costing for clients with domestic and overseas customers, taking into account the profitability of the plant for the possibility of comparison arises. Employees to take account of the time spent in vain another advantage of this method is observed. From the results of using this method of time - driven activity based costing is thought to be an accurate method for determining product costs.

Taking into account the time spent by operating activities and free time cost calculations do not add a new method of operation. The "Time-Driven Activity Based Costing System" is considered

to use to obtain more accurate information. It is thought to affect a positive outcome of the analysis of the new method. The results of the study show that the Time- Driven Activity Based Budgeting is a new, useful instrument for companies of various sizes. This method can be implemented in Turkish companies for running the company in an effective way.

Keywords: Time-Driven Activity Based Costing, Time-Driven Activity Based Budgeting, Management Decision-Making Process.

Is good corporate governance practice the panacea to small-to-medium businesses operating in the South African retail sector?

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Purpose

The small, micro and medium business enterprises (SMMEs) sector is universally acclaimed for fostering economic growth in many economies. The health of this sector is largely premised on the observance of good corporate governance tenets. The purpose of this paper is to determine whether good corporate governance practice has been firmly embedded in the small-to-medium enterprise (SMEs) sector in South Africa. In this study we interrogate the influence of good internal control systems, with a special focus on cash flow management practices on the survival or growth of the SMEs.

Design/Approach/Methodology

This paper utilised qualitative research methods and employed the survey technique amongst the SMMES operating in the retail sector of Pretoria in South Africa.

Findings

We find evidence that good corporate governance practices enhance cash flow management processes. This is extremely important to the survival of a business, particularly small businesses, and poor corporate governance practices lead to weak cash flow management systems, which can thus lead to small business failure. We also proffer policy advice as to the remedial actions needed to safeguard this sector.

Keywords: Corporate Governance, Cash flow, Small Business, Economy, Financial Management, South Africa.

Corporate Governance Practices of the Insurance Industry in South Africa

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Purpose

The insurance sector plays a critical role in any economy by its very mechanism of risk transfer and savings mobilisation. It thus performs a critical role in intermediation by fostering the liquidity of the financial markets. This in turn ensures that capital is transferred from surplus units to deficient units of the economy who are in need of funds for the undertaking of capital projects and thereby spurring productivity. In the aftermath of the 2007 to 2009 the insurance industry image was tainted. As such, the observance of good corporate governance tenets has now more than ever before become quintessential and also a prescription by regulators. The purpose of this paper is to explore the corporate governance practices (both internal control as well as regulatory measures) that are prevalent in the South African Insurance industry.

Design/Approach/Methodology

This paper utilised qualitative research methods and lend itself to document analysis of company reports that the insurance companies submit, as well as the Acts and industry codes that governs the insurance industry in South Africa. The Atlas.ti software was used to analyse the documents.

Findings

We find evidence that insurers are at various stages of embedding good corporate governance practices. In the aftermath of the financial crisis, the insurance companies by and large have strengthened their internal control systems. They have also complied with regulatory directives and are grappling with the implementation of Treating Customers Fairly (TCF) as well as Solvency Assessment Measurement (SAM) which are market conduct and prudential regulations respectively. Further they also subscribe to the King I, King II and King III frameworks of corporate governance. However we wish to caution against “over regulating” this sector as this could stifle innovation.

Keywords: Corporate Governance, Insurance Companies, Regulation, Internal Control, South Africa.

System Approach in Global Perspective: the New Economy and Re-Industrialization (the path towards system thinking in social and economic development of European countries and Russia in 21st century)

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We can define several periods of socio-economic history: a “big industrialization” that has begun in the end of 19th century and continue up to the middle of 20th century; and de-industrialization that has started in the middle of 1970s, just after the oil crises. The essence of the process of the de-industrialization is gradual shift from industrial assets and real sector of economy to financial and virtual assets. This process causes the outflow of capital to the industry sectors with fast and high turnover (e.g. trade and services, finance, telecommunications, IT and etc.).

In this work we’ll study the main reasons for capital outflow and the necessity of return to real economy. We’ll see what the system approach is and how it could provide the sustainable development. We’ll define the main methods and directions for solving the problem of sustainable development. This and other questions we’ll consider in this paper.

The main objective of our research is to prove that existing economic model lead European countries, USA and Russia to the deadlock. This model doesn’t take into account the main thing – that all countries form the united economic space, and sustainable development is possible only altogether. Another objective is to show that refusal of the real sector of economy (first of all, manufacturing) sooner or later lead to economic and social disaster.

The global financial crisis of 2008-2009 showed us the instability and fragility of the current economic model. We can observe the economic and social consequences of the crisis (and its continuation) in several European countries, particularly in Portugal, Greece, Germany, Spain, etc., Russia and all over the world. Last economic and social crisis shows the high level of interdependence, the fragility of national economic system and dependence from financial and stock exchange speculation. The problem is stronger in those economies where the part of the real sector of the economy has been steadily declining in recent past years.

The high dependence of some European developed economies from the global financial system, and, in particular, from the IMF, causes the growth of unemployment, deskilling the working-age population, reduces the level of social welfare and aggravates the problem of the social tension. In turn, developing countries (first of all, Russia, China, India, etc.) are faced with the problems attracting investors in the real sector of the economy.

The most important problem of the modern economy is the creation of a model of sustainable socio-economic development of the different countries as a complex integrated system. That's why we need the system thinking and system approach. The system approach tells us that all companies and all sectors of economy are an integrity community. Sustainable development is consecutive change of different stats of system. System approach allowed to find out some laws and periods of development of the world economy. System thinking could help us to define three basic stage of industrial development of European countries and USA: a "big industrialization", de-industrialization and, the last one, re- industrialization.

In this we can see the triad of dialectical development or Hegelian triad "thesis, antithesis, synthesis". According to system approach we can conclude: thesis is "big industrialization", antithesis is de-industrialization and synthesis is re- industrialization. What does it mean?

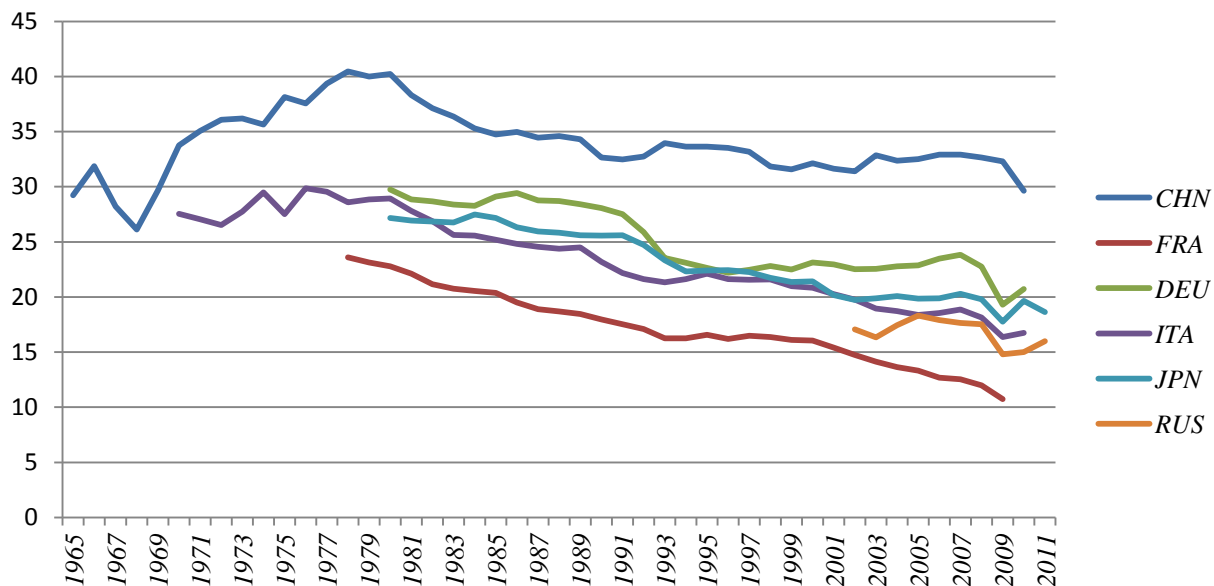
The essence of "big industrialization" was capital accumulation and investment in industry in order to get a profit in rapidly growing sectors (transport, construction, heavy engineering and related sectors). Manufacturing was the engine of economy development.

The next stage is de-industrialization that means to business outflow to more profitable sectors with faster return of investment. Besides, manufacturing is less profitable than engineering or R&D.

Therefore, it is expected that the next stage would be the synthesis of previous two stages. It means capital return to hi-tech industries, the creation of new type of manufacture and workplace (innovative, with creative approach), and professional development.

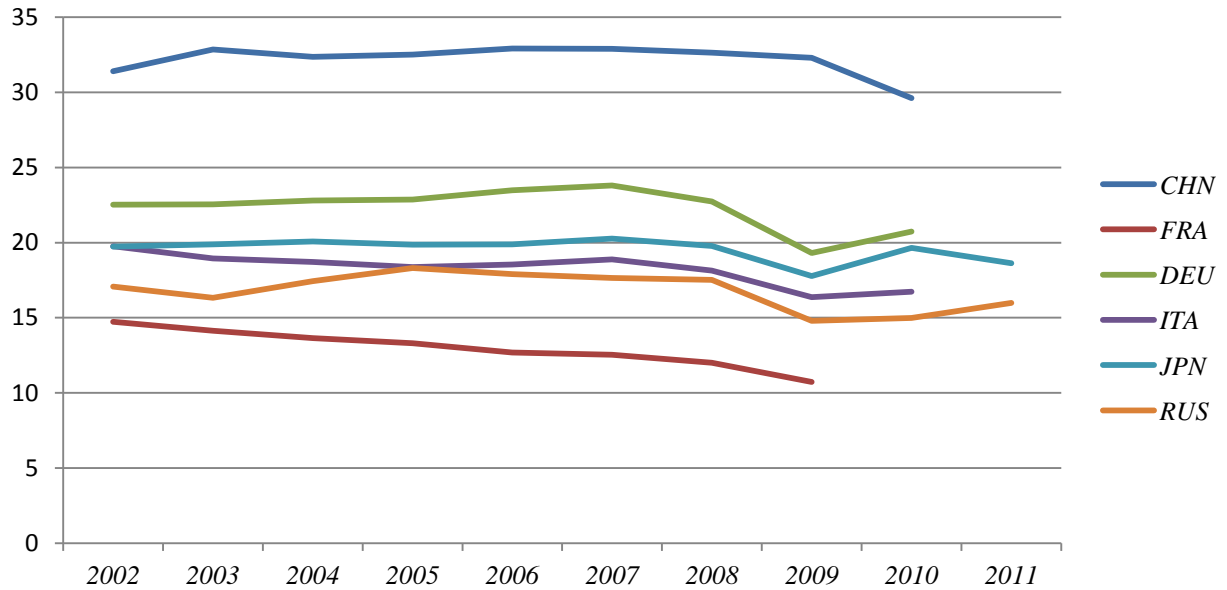
Study shows the significant decline in the share of manufacturing in GDP in European leaders and, what is especially interesting, in China – the leader of world manufacturing. Also we can observe the reducing of share of employed in real sectors of economy (fig.1-3).

Figure 1- Manufacturing, value added (% of GDP)



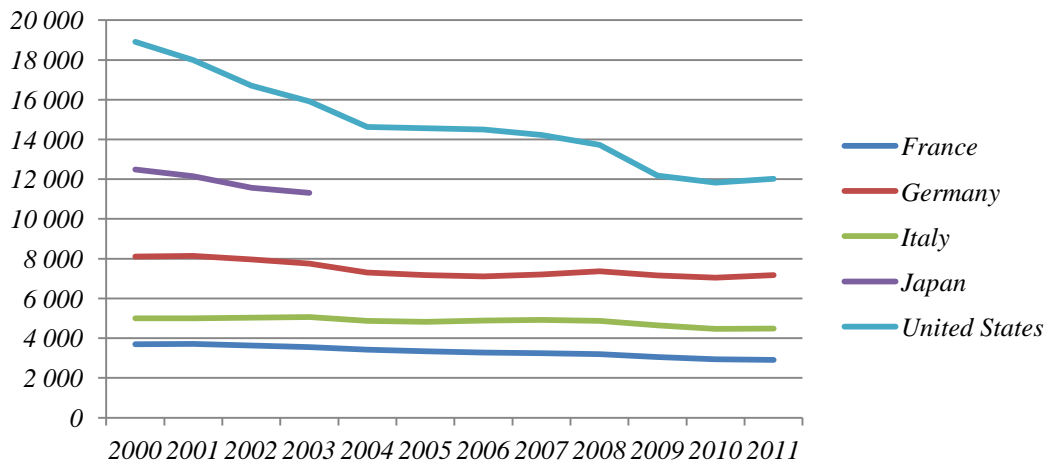
Source: World Bank.

Figure 2- Manufacturing, value added (% of GDP)



Source: World Bank.

Figure 3- Total employment in manufacturing
 Thousands of persons engaged



Source: OECD.

This imbalance of economy system will be catastrophic from the point of view of the system approach. As we see now, the situation in Europe and in the USA is dramatic. On December, 2013, Detroit, the largest industrial U.S. city was declared bankrupt. However, according to researches, some of multinational companies are ready to return their businesses to United States back again. Also, re-industrialization of the United States can be contributed by shale gas production, which will entail some changes in all related industries and infrastructure. The economic situation in Russia is also very difficult. Today in Russia a large part of the Federal budget is formed by receipts from foreign trade (mainly due to the sale of oil and oil products),

and by the taxes for the use of natural resources. And these factors put Russia in a vulnerable position in the world economic system.

The major reason for the capital outflow from real to virtual economy sector is higher profitability and faster yield (virtual economy means financial and insurance sectors, trade, telecommunications, IT, etc.). The border between virtual sector and the real sector is rapidly erased. Manufacturing companies produce innovative ideas, technologies, constructions, while the actual production takes place in other countries with more competitive positions on the market (with lower production costs and labor cost) . At the same time, job in the European industry does not always mean the work with machines, and more often - engineering and industrial design.

Economic and social development should be based on balanced growth in all regions of the country (the national level) and in all countries as a part of world economy system. This provides the sustainable development and sustainability of global social and economic system. Sustainable development and balanced growth mean harmonized development in three areas – economic, social and environmental. New industrialization will create the bases of the new economy and economic growth.

We can say that only real manufacturing and real economy could provide social stability, economic growth, and sustainable development in the long term through creating high effective innovative national economy.

In fairness it should be noted that we have done the first steps to new economic doctrine. For instance, on 2012, the Ministry of Economy of Latvia declared a new industrialization. This means to increase the share of real economy up to 30-35%.

On December, 2012, The Wall Street Journal Europe has published the article in which group of European ministers indicate the need to change the economic model and the recovery of the industrial sector (Soria, Pereira, Passera, Montebourg, Rosler, 2012).

So, we can make some conclusions.

1. Capital outflow and withdrawal of business from the manufacturing since mid-20th century led to economic crises and social tension.
2. System approach claims that only balanced and harmonized economic growth leads to sustainable development.
3. There are three stage of socio-economic history: the first stage is “big industrialization”; the second one is de-industrialization and, the last one, is re-industrialization.
4. One of the methods to attract (or return) of business in real economy is the reduction of production costs through using energy efficient technology, innovations,
5. We have to create more effective workplaces and we need to form new type of workers – “knowledge worker”.

Despite the possible objections, the idea of the recovery of Europe and other countries through the new industrialization seems promising.

Keywords: System approach, New economy, Re-industrialization, New economic model, Social and economic development, Sustainable development, Balanced growth.

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What Fosters SME Internationalization? A Cross-Border Study on Italian and Slovenian Manufacturing of SMEs Entering Foreign Markets

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Extensive research has been conducted on the topic of SME internationalization and on the strategies that SMEs deploy to overcome deficiencies they face in resources and competencies when expanding into international business. On the one hand, innovation has been recognized as a critical element to support SMEs internationalization and export development. On the other hand, empirical results are rather contradictory. This paper presents an empirical study which is based on the notion that while innovation and export are outcomes of a firm's knowledge resources, they must be accompanied by some form of strategic decision-making. Therefore we analyze how a firm's growth and export performance is supported by innovation, a risk-taking attitude and a strategic intent orientation. Interestingly, to the best of our knowledge, the cognitive perspective analyzing the role of these variables has rarely been used in studies on SMEs' export performance. Additionally, most of the studies we found are not specifically focused on crisis periods, when internal demand is reduced and internationalization often becomes the only way that SMEs have to survive. Our study looks at the key components for the survival and expansion of SME on the backdrop of the last financial crisis. More precisely, our study focuses on innovation on one hand and risk-preference and strategic intention attitude on the other and specifically analyzes how these variables interact with each other and contribute to fostering SME's internationalization.

Methodologically, our paper applies a structural equation model on data collected through 319 questionnaires from SMEs located in Italy and Slovenia. Many of these SMEs had been heavily affected by the financial and economic crisis. The questionnaire, the subsequent statistical analysis and its results are the dominant portions of this paper. The primary desired outcome of our study is to identify a connection between strategic intent, risk perception, innovation (both

radical and incremental) and export performance. For this, we developed a series of research questions and drew a series of hypotheses for each research question. They relate to the effects of risk attitude, strategic intent and innovation. Managers of export firms were asked how they assess these during a financial crisis. Another set of questions referred to the interrelatedness between risk attitude, strategic intent and innovation.

The preliminary findings of our research show that export performance is positively influenced by incremental innovation and risk preference, while we did not find a statistically relevant connection between radical innovation and export performance,. The results regarding the relation between strategic-intent and export performance are weak. But we found that the incremental innovation is fostered by radical innovation and strategic intent. We also found radical innovation is positively influenced both by risk preference and strategic intent.

Our paper discusses the varied outcomes of our research in light of the most common internationalization theories. We look at the two-stage models that have been developed, the Uppsala Internationalization Model (U-model) and the Innovation-related Model (I-model), and we noticed that the Uppsala-type seems to be adequately represented in times of economic stability and incremental growth only. Our findings suggest that a contingency approach may better explain how businesses behave in times of crises and forced globalization. From there, we think that the results of our study could be a useful contribution to the ongoing debate on the topic from a theoretical perspective. From the practical perspective, our results could be used by policy makers in order to develop policy to support SMEs' internationalization (e.g. by developing specific forms of grants to support incremental and continuous innovation). Another important implication of the paper for practitioners is that it demonstrates how CEOs of SMEs need to evaluate the elements related to internationalization and which skills, competencies and management know-how are crucial.

Keywords: SMEs; Internationalization; Italian and Slovenian Manufacturing; Foreign markets entering.

Venture Capitalists and Companies Evaluation Models: An Alternative Approach by the Black and Scholes Method

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Decision making (Janis, 1989; Miolo Vitali, 1993) by Venture Capitalists (Amit, Brander, Zott, 1998; Bygrave, Timmons 1992; Gompers, 2004; Timmons, Bygrave, 1986; Sahlman, 1990; Zider, 1988) in company acquisitions or in company sales is a complex process in terms of selection, action and investment related decisions (Lockett, Wright, Sapienza, Pruthi, 2002).

In order to reduce the risk of adverse selection (Akerlof, 1970; Guttman, 2008; Trester, 1998), Venture Capitalists carry out specific and general company screening (Kumar, Kaura, 2003) before the evaluation closing phase (Kaplan, Stromberg, 2001) aimed at choosing the best investment to be made (Bruno, Tyebjee 1984; Cannice, Goldberg 2009; Casamatta, Haritchabalet, 2007; Gompers, 1985; Kollmann, Kuckertz, 2010; Myers, Majluf, 1984; Tyebjee, Bruno, 1984).

According to the most important literature on decision making processes of Venture Capitalists (Fried, Hisrich, 1994; Hall, Hofer, 1993) and company evaluation models (MacMillan, Siegel, Narasimha, 1985; Seppä, Laamanen, 2001) used by the latter, the paper investigates new methods of the assessment phase made by Venture Capitalists.

Starting from existing literature, we introduce the economic evaluation approach of the company (Zanda, Lacchini, Onesti, 2005) by investigating into the methods based on market dimensions and cash flows and stock dimensions (Damodaran, 2002).

In this way, by providing a study of the methods used by Venture Capitalists (Barry, 1994) and academic and professional communities in evaluating contemporary companies (Golinelli, 2000), application of the paper follows use of the Black and Scholes method (Black, Scholes, 1973;

Merton, 1973; Smith, 1976) in company evaluation, through the real options approach (Black, 1971; Black, 1989; Buckley, Tse, Rijken, Eijgebhuijsen, 2002; Cox, Rubistein, 1985; Myers, Majad, 1983; Zeng, Zhang, 2011). The results of this application are compared with a traditional evaluation method such as the cash-flow approach with the perspective of understanding the difference in results achieved.

Therefore the objective of the paper is to understand the validity of the Black and Scholes method and the validity of the economic values resulting from the findings section for identification of an adequate economic measure of contemporary companies in the light of Venture Capitalists' decision making process.

The research approach is based on a qualitative and quantitative method. By using a multi-method approach (Myers, 2013; Yin, 2003), the paper is developed according to the study of national and international literature. Secondary sources of the research include papers, books, Datastream database, news and documents.

Empirical observation has been carried out on a sample of companies (IPO companies) listed on the Italian Stock Exchange with the objective of proving the strong and weak points of the Black and Scholes method in the company evaluation system by the Venture Capitalist in the merger and acquisition operations (Capasso, Meglio, 2010).

The observation is based on several years because of the economic crisis on the international scenario. So, we would like to know if methods applied are suitable in revealing the economic fluctuations of the market.

In this direction, the research questions of the paper are the following:

- 1) **Which are the Venture Capitalists methods for company evaluation?**
- 2) **Is the Black and Scholes methods a valid approach for Venture Capitalists' decision making process with regards to company evaluation?**

Keywords: *Black and Scholes, Venture Capitalists, evaluation companies, decision making process.*

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Entrepreneurial Infancy and the Survival of the Fittest!

What Can We Learn from the Practice of Business?

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Research Question, Theoretical Background and Methods

How can newborn firms survive the high mortality rates associated with their infancy? To date, shedding substantive light on this lively – and still unaddressed from many aspects – question is undoubtedly crucial for both the research and practice of business. Thus, this attempt constitutes the core of this article, that is positioned within the organizational evolution research field in general (Abatecola, 2014; Cafferata, 2014) and within that of evolutionary entrepreneurship in particular (e.g. Aldrich, 2011; Brush, 2008; Bruton et al., 2010; Santos, Eisenhardt, 2009).

Over time, using comparisons with biology for investigating the organization/environment dichotomy has also oriented a vast number of organizational evolutionists towards the study of the most vivid antecedents associated with both selecting in (i.e. birth) and selecting out (i.e. death) processes among organizations. To date, it is widely acknowledged that this sub-stream of research has found a huge catalyst in the liability of newness construct, seminally brought to scientific attention by the outstanding American sociologist Arthur Stinchcombe in 1965.

The core tenets of the liability of newness are regarding the failure rate of new ventures, which Stinchcombe assumed to be tremendous at the beginning of their life cycle and then would monotonically shrink. Why? Stinchcombe argued that this was primarily due to the initial lack of two factors internal to the start-ups' structures, especially if compared to those of mature organizations. The former factor was supposed to be experience, which is physiologically limited in infant organizations. Increasing with time in surviving entities, experience often boosts the exploration and exploitation of organizational routines appropriate for environmental fit. At the same time, the latter factor was assumed to be trust, especially in terms of precarious relationships among the start-ups' employees, which negatively impacted on the start-ups' systemness as a core competence for survival. Of course, lack of trust also had an equivalent

facet at the external level, this is in terms of fragmented links between the start-ups and their environmental stakeholders such as suppliers, clients, banks and regulatory agencies.

As we have introduced, at least over the last 50 years the liability of newness has been greatly shaping the organizational evolutionists' research agenda around entrepreneurial infant survival or failure (Cafferata et al., 2009). To date, many scholars within this field have offered continuous support to the extant validity and reliability of the newness construct, at both a theoretical and empirical level (Abatecola, 2013; Abatecola et al., 2012; Aldrich, 2011; Burke et al., 2010; Dobson et al., 2013). In sum, Stinchcombe's intuition that most newborn firms die young has not remained a simple conjecture over time, in that it has been widely supported by evidences from the practice of business, at least at a US and European level. Also, we can more generally observe that, since the second half of the 1990s, the specific research efforts around this topic have been increasingly shifting their attention towards the study of what firm-strategic or environmentally driven antecedents can foster entrepreneurial infant survival, thus countervailing the liability of newness itself.

However, we have to admit that conclusive findings on the most recent perspective still largely represent a black box from many aspects. In other words, identifying a sort of genetic code belonging to those few start-ups able to survive the early stages of their life cycle seems far from being an accomplished task. Thus, this article aims to contribute to this aspect through presenting an easy-to-discuss multiple case narrative, which compares three different, but intertwined, stories of entrepreneurial infant challenges from both Europe and the US. The selection of these cases has not been random, in that we mainly used the factual and counterfactual approach. In fact, while two of the narratives (i.e. the European SPA Rome, active in the well-being industry, and Solteckenergia, active in the facility management field) can serve as successful examples of entrepreneurial infant survival, the third narrative (i.e. the American Zynga, active in online social gaming) can represent an instructive example of declining performance after the earliest years of existence. We wrote the cases after developing internal experiments in SPA Rome, conducting direct interviews in Solteckenergia, and collecting secondary data for Zynga.

The article has been specifically conjectured to meet not only the research-oriented, but also the practice-oriented readership, thus the tone of the case narrative is deliberately and largely discursive.

Lessons learned

As this section highlights, the case narratives from the practice of business mentioned in the preceding section can provide useful hints on various (and intertwined) issues associated with the liability of newness, with insightful suggestions on how to contrast it. Let us discuss why.

Routines' exploitation

In his seminal work about the liability of newness construct, Arthur Stinchcombe identified a number of endogenous or environmental drivers which can hopefully counteract the infant mortality of start-ups. In particular, he considered routines' exploitation as the most important among the internal drivers, with SPA Rome offering interesting evidences in this regard.

In SPA Rome, the main problem was related to the very stringent headquarters' rules, that did not properly fit the fast-pace environment in which the company was operating. A successful start-up needs to promote efficient new habits for individuals (learning processes) and a coherent common knowledge as well (Pentland et al., 2012). On this side, the newly appointed

management, together with one of the authors of this article, restructured the performance appraisal system and, consequently, the feedback mechanism and associated rewarding/sanctions. The new system was aimed at exploiting the hidden potential of the employees, potential which had been formerly inhibited by the old appraisal mechanism based on compliance rather on corporate intrapreneurship. Thus, the 2-week experiment was based on Stinchcombe's principle of routines' exploitation and was performed through a guided trial and error pattern based on a multilevel co-evolutionary model (Breslin, 2011).

In the first week, the unit of analysis was the individual level; the managerial efforts were thus devoted to drive variations of employees' individual habits. As discussed in the case narrative, the most important results obtained in this phase were a higher attracting power toward the passenger (through "démarchages" behaviors), a more coherent product/service integration (through the product/service matrix implemented after the careful review of the company's offering) and a higher customer-oriented experience (through the introduction of teaching components during the treatments).

In order to foster group-level interactions, the second week of the experiment was devoted to implementing a proper feedback matrix based on the creation of a particular feedback network between the employees' branch and the training manager's branch. The creation of collective routines within a team involves negotiation among its participants. Thus, the aim of the second week was that of establishing a "participative routines creation mechanism" and, consequently, the "continuous learning" of the workforce. For this purpose, the management and the researcher involved in the experiment introduced the organizational innovation called atelier. In conclusion, the innovation in terms of organizational routines, implemented both at the individual and group level, allowed SPA Rome to survive the environmental competitive pressures of its infancy.

Entrepreneurial orientation

The second hint is in regard to the linkage between entrepreneurial orientation/pro-activity and the survival chances of newborn enterprises. In general, the majority of the studies about this issue have, also very recently, demonstrated a positive correlation between entrepreneurial orientation and the start-ups' performance (Brettel et al., 2010; Su et al., 2011), with the Solteckenergia's narrative also able to shed light on this topic.

From the beginning, this start-up's strategy was aimed at reaching the first-mover advantage in its business through avoiding experimental projects, with the entrepreneurial intensity also representing a crucial element for the firm's infant survival. In fact, in less than two years, Solteckenergia added three business units to the initial four, thus indicating a very high level of frequency in entrepreneurial orientation.

On this basis, it is important to consider here that entrepreneurial orientation should not be confused with excessive optimism, which has been not rarely found as a primary reason for the high incidence of failure among start-ups. In particular, the existing evidence suggests that high levels of optimism can negatively affect judgment and decision making (Åstebro et al., 2007), thus leading to start-ups' early departure. On this side, the launch of Solteckenergia's new battery-accumulation photovoltaic system could have, at first, wrongly appeared as a strategic decision dictated by excessive optimism; indeed, as we have explained in the narrative, this launch was directed to counterbalance the downward effect of the financial crisis and the rising low-end competition. This taken into account, it appears worthy of mention that the social cognitive perspective (Baron, 2008; Hmieleski, Baron, 2009) has probably offered a more comprehensive understanding of the concept of optimism, because it has found a positive

correlation between individual-level variables – such as the skills, motives, experience, attitudes and other characteristics of the entrepreneurs as individuals – and the performance of new ventures.

In parallel with the investigations strictly associated with entrepreneurial orientation, studying the founding team's features has also received an enormous amount of attention (Beckman, 2006; Delmar, Shane, 2006; Mosey, Wright, 2007). In this regard, there are growing studies dealing with the impact of the founding team's marketing and industry experience on its start-up's survival chances. Some of these specifically focus on the importance of the human capital associated with this team (Zhao et al., 2013). On this side, it is possible to find a positive relationship between human capital components and start-up's survival chances within a number of elements. As underlined in the case narrative, Solteckenergia's top management team's expertise supported the recognition of unexplored business opportunities and this helped the start-up obtain first-mover advantage. Technological and industry-specific expertise, and the presence of financial investors as well, also positively affected the start-up's metrics.

Liability of adolescence

Finally, the case of Zynga partially provides us with counterfactual evidence, in that it helps shed light on the liability of adolescence construct (Fichman, Levinthal, 1991). This construct is to date considered as somehow complementary to the liability of newness. In particular, while Stinchcombe's intuition suggested a monotonic decline of the start-ups' death rate, the liability of adolescence hypothesizes a non-monotonic inverted U-shaped pattern. In other words, according to the latter, the death rate is low during the start-up phase and then grows for a certain period (i.e. adolescence); after reaching its maximum, it starts to decrease again.

We have to stress that the liability of adolescence shares the same antecedents that underlie the liability of newness construct, but differs for a supposed initial time-window in which the newborn firms seem to be less affected by environmental competitive pressures. Called the honeymoon, this period can last from a couple of months to some years, and this varies according to the start-ups' initial availability of resources. The higher this stock of initial assets, the longer this peace will be.

The Zynga's narrative seems particularly appropriate for exploring the phenomenon mentioned above. In fact, its stock of initial resources ensured a low death rate during its three-year honeymoon period. As we have explained in the narrative, the partnership with Facebook, the corporate culture and the knowledge acquisition and diffusion mechanisms initially allowed the company to affirm itself as the major player in the social gaming arena.

But, we have also highlighted that after the honeymoon, a start-up's death rate starts to increase and this phenomenon graphically comes with an inverted U-Shaped representation. Thus, in the case narrative we have identified several drivers to explain Zynga's evolving decline of performance. For example, these have included the unsuccessful renovation of the firm's games portfolio, rising sales and marketing expenses and, above all, the business-dependent relationship with Facebook. In sum, one of the strongest assets during the start-up phase has then become the weakest capability right after the honeymoon period. This is also why we have mentioned that Zynga is presently trying to react by launching its independent distribution platform and by leveraging its market leader status.

Keywords: Business practice, Case narrative, Entrepreneurship, Evolution, Newness, Survival.

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MARKET SYSTEMS AND ETHNOGRAPHIC RESEARCH

A Tribal Systems Approach to Consumption Communities

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The concept of consumption communities has received considerable interest within the marketing literature over the last 30 years. With the advent of the internet initially and more recently social media, allowing consumers to connect and share with users of any product or service anywhere and at any time, this stream of research still appears to be gaining traction. Research in this domain is generating a greater understanding about the benefits and value customers derive from forming associations with other like-minded consumers. It has moved our understanding of consumer interactions and behaviour well beyond the firm/customer interface. The ability of customers to interconnect without traditional geographic constraints or even the influence of the firm has major implications relating to customer-to-customer co-creation of value, re-configuration of value propositions to allow for personal needs, and at times co-destruction of value.

One term that has been used frequently to describe these contemporary consumption communities is that of “tribe”. For example Kozinets (1999) describes virtual communities based on collective consumption activities as e-tribes, Bennett (1999) follows Maffesoli’s (1988/1996) concept of neo-tribes to describe collective consumer-orientated associations among individuals, while yet others (Cova, Cova, 2002; Mitchell, Imrie, 2011) have referred to consumer-driven groups based on shared values, passions and beliefs as consumer tribes. These contemporary tribes have been defined as collective groups whose members share some enthusiasm for and knowledge of a particular consumption related activity (Armstrong, Hagel, 1996; Kozinets, 1999, 2006). Yet, despite the term tribe having been consistently used as a metaphor for the structure of these consumption communities very few researchers (Cova 1997; Maffesoli 1988/1996) have provided any sort of definition to explain why tribalism should be related to a group of consumers drawn together by a common interest. Many authors have however, used the term assuming the reader has some tacit knowledge of tribalism or as Cova, Kozinets and Shankar (2007) have described it “...most alluring of all is the notion that by calling a phenomenon ‘tribal’ we have somehow explained it.” Others have emphasized obvious distinctions between

traditional tribalism and the ‘tribal’ behaviour of contemporary consumers to show that the use of the term is just a “deracinated metaphor” (O’Reilly, 2012; Tyldesley, 2013). The most commonly cited differences between contemporary and traditional tribes are that the inherently fragile, ephemeral and fluid forms of connectedness that define neo-tribes are not seen in a traditional tribal society (Cova et al., 2007; Riley, Griffin, Morey, 2010; Maffesoli, 1988/1996). This appears to be the justification for why the two tribal systems are different and therefore there is little point in trying to draw on any knowledge of traditional tribal systems to help explain the structures and behaviour that occur within the contemporary tribe.

Our argument is that this distinction, while being justifiable in some instances, does not eliminate the benefits of understanding the theory of traditional tribes as a way of explaining the mechanisms that drive the contemporary consumption tribes. As explained by O’Reilly (2012) “it seems to be taken for granted that that a neo-tribe is a good thing, without any clear exposition being offered of how the new relates to the old”. In a recent study, Robards and Bennett (2011) suggest that as a reaction to the cultural fragmentation associated with late modernity individuals are seeking social networks which can provide a sense of belonging and feelings of home. If this is the case, then this social behaviour appears much more akin to the traditional tribe rather than Maffesoli’s conception of the neo-tribe. In fact, Robards and Bennett (2011) call for a “critical revision of Maffesoli’s original model of neo-tribes” because of the increasingly concrete and stable social relationships generated in many online communities. Thus, we follow Kozinets’ (2006) proposition that the only way to communicate with the proliferation of cultures, subcultures and communities that exist within a world where the mainstream has fragmented is to understand the particular language and customs of the tribe. In this research we also address Kozinets’ (2006) concerns about one’s internalised assumptions of a tribe, so often based on “stereotyping, derogatory misrepresentation and misapprehended cultures” rather than a genuine understanding. Therefore, at the risk of building a straw man, we ask two key questions: 1) are there any similarities between traditional tribes, the contemporary consumption tribes and service systems thinking? And 2) if this is so, what can we learn from the traditional tribal system that may help in our understanding of the system(s) in which the contemporary consumption tribe operates in? In an attempt to answer these questions we take a fresh look at the phenomena of consumer tribes by reflecting on the structures of a traditional tribal system, the Pre-European New Zealand Māori, to uncover tribal structures. We map traditional tribal systems against contemporary conceptualisations of the consumer tribe and service systems thinking and discover interesting parallels.

The meanings consumers subscribe to products and/or services and any subsequent value an individual derives from products or services are likely to evolve and be enhanced through the interaction with others within a community or tribe (Pongsakornrungrsilp, Schroeder, 2011). The tribal metaphor aligns with Holt’s (2004) perspective of brands being shared cultural property and not privately owned intellectual assets. Consumer tribes however, are not limited or constrained by singular brands, as with brand communities, but rather exist through collective social interactions focused on shared experiences and emotions facilitated through any number of brands, products, services or activities (Cova, Cova 2002; Goulding, Shankar, Canniford, 2013). Despite this distinction between brand communities and consumer tribes the value that is co-created through the collective use of resources from within the consumption tribe is often far greater than could be derived by an individual using a firm’s service or product. In an attempt to understand how value is co-created within market communities rather than just through or between individual actors involved in an exchange, Chandler and Vargo (2011) explore the

influence that context plays in framing exchange. In the case of consumer tribes context would be the presence of the community. Chandler and Vargo's (2011) theoretical framework is based on the interconnectedness of the individual and the market and shows that the use and exchange of resources to co-create value will differ depending on the level of interaction determined by a specific context. They propose that context can be described as a system consisting of four levels – micro, meso, macro and meta-systems. This approach is typical of many traditional tribal systems where each system level is organised and contained within the level above it and as Chandler and Vargo (2011) propose, provides a theoretical framework that links contexts, markets and value co-creation to the interconnectedness that occur within different levels of community or tribe.

The New Zealand Māori were chosen as the example of traditional tribalism for three key reasons: 1) the Māori have a long and relatively well documented history of tribal tradition that extends back over 800 years, 2) the Māori society can be traced back to a single origin (the mythical homeland of Hawaiki) and, 3) while the Māori of today have assimilated into a western society, following two hundred years of colonisation, their culture still remains alive and is perhaps stronger now than it has been for years, making it a culture that is accessible to study. Findings of this research project reveal the parallels of Māori tribal and neo-tribal structures as well as parallels to current systems thinking and system levels.

Keywords: *Pre-European Māori; tribal systems; tribal structures; consumer tribes; service systems; value co-creation.*

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The systemic dimension of tribal entrepreneurship

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The best place for consumer competencies to be expressed is in the community or ‘tribe’ of person sharing the same passion (Cova, 1997). This holds true for all kinds of pastimes, whether sporting activities such as mountain climbing or snowboarding; works of fiction like Harry Potter or Star Wars; and even loyalty to particular brands (Harley-Davidson or Lego). Consumers operating within these groups enjoy heightened creativity, something that helps them to share their common passion. Some might try to invent new sequels for series like Harry Potter or Star Wars. Others might customise their motorcycles or invent new uses for Lego. Others still might develop new climbing equipment or skateboards. Fans will end up trading these creations with one another, leading in turn to a kind of tribal entrepreneurship, in the sense that Goulding and Saren, (2007) gave to this term in their research on ‘Goths’. Members of this tribe would, for instance, do things like create (and subsequently sell at festivals) items required for an authentic Goth experience, including corsets, chains and wigs. More recently, Martin and Schouten (2014) have analysed the mechanisms causing fans of ‘mini-motos’ (mini-bikes they have transformed into racing machines) to produce items for fellow tribe members, launching a new niche market in the process. What we are dealing with here is a collective model of entrepreneurship, one that is starting to shape completely new markets. This can be exemplified by the community of Star Trek fans, a tribe that “*becomes like a hive of active bees, collecting, organizing, creating, reproducing, distributing, making networks, closing deals, being entrepreneurial: they become inno-tribes*” (Cova, Kozinets, Shankar 2007).

This body of literature aims to describe fans who, without wanting to start up a business, sometimes create goods simply because they enjoy doing this and want to give something functionally and/or symbolically useful back to other members of their community. What then happens is that the community asks them to ramp up their output and structure it so that the activity ultimately does become an enterprise. Calvignac (2008) has defined the construct of consumer-driven socio-economic innovation, starting with initiatives launched by consumer-innovators but extending into the community and market spheres. Considerations here include the permeability of the borders between communities and markets as well as the conditions underpinning the rise of this twofold product offer, one whose community and market aspects complement one another. We approve of this approach. To describe the systemic dimension that is an intrinsic component of tribal entrepreneurship, our research mobilises a case study based on

long semi-directive interviews with members of the communities in question, supplemented by a number of secondary data sources (blogs, journals, TV broadcasts, etc.) covering the different kinds of innovation.

The Gruppo Speleologico della Montagna Pistoiese (GSMP; i.e. “the Pistoia Mountains Speleology Group”) is a community of speleologists and mountaineering enthusiasts. Its origins date back to the 1970s, when societal changes enabled the transformation of an already widespread passion into an organized leisure-time and sporting activity. Its fields of pursuit range from the high ridges to the deep caverns of the Apennine mountain chain, as well as other ranges throughout Europe and the world.

Since its inception, a new generation has taken up the group’s activities and today its members number in the tens, though it is part of a wide-ranging community of enthusiasts belonging to other similar groups in various countries, with which it entertains contacts and exchanges. Although its members include mostly mountain dwellers, their passion is shared by many the world over, providing the opportunity to establish contacts throughout the world. One telling example of this in the case of GSMP is its relationships with a number of South American “Andinism” groups (which, by analogy to Alpinism, refers to mountaineering in the Andes).

Their passion for speleology and mountain sports (mountain and rock climbing, canyoneering, and the like) drive its members to willingly share with others in this world-wide mountaineering ‘tribe’ many, often hazardous, endeavors and experiences that cannot but form long-lasting bonds between them. The closeness and mutual trust of the group is evident from the rich collection of photos that have been published online (<http://www.geograficaservice.it/gsmpp/contatti.html>). The group moreover sees to the training of its new and less expert members through courses managed by its more experienced members in collaboration with national level schools. These shared experiences of the tribe create an almost ideal basis for identifying specific needs in terms of products and services on offer for sporting and gaming activities. For example, the types of tools to use in scaling rock walls or descending into caverns and galleries during speleological outings are examined and tested by the group in the field, and existing commercial offerings have often been found to be wanting.

A prime example in this regard is the experience of GSMP member Gianni Filoni, whose role and skills have been widely recognized by his peers. Gianni, with years-long experience as a mountaineering instructor, has also recently begun teaching canyoneering, another allied sport that is now spreading rapidly among the new generations of mountain enthusiasts. Now 40 years old, Gianni lives in the mountains and works at his father’s manufacturing firm, which produces automotive and other mechanical components. It is a small-to-medium-sized enterprise (SME) that has however developed high-tech practices and has been involved in a number of important collaborative projects with large-scale national and international companies, primarily in the transportation and infrastructures sector. These overlapping roles (passionate mountaineer, community sports instructor, employee in the family business) has led him to a systematic process of drawing upon his experiences with the mountaineering group to develop new markets for the Filoni company.

It was this process that led to the development of the “Stone Drill”. Some years ago Gianni’s mountaineering group experienced the need for a perforation tool that could offer performance suitable to the demands of their activities in terms of lightness, manageability and reliability. The devices present on the market at the time appeared unable to satisfy the performance requirements dictated by the extreme conditions under which the group practiced their various mountain sports. Thus, the case of the “Stone Drill” exemplifies the process by which, over the

course of about one year (2007-2008), a new product was realized through the relationship between a small group of sports enthusiasts and an SME. Its development is the result of a system made up of social relationships and entrepreneurial ability. Moreover, to a large degree, these same social relationships entertained within the group contributed to creating the market for the drill itself. Nowadays, the Stone Drill line accounts for nearly one third of Filoni's revenues – indubitably a great success from the entrepreneurial perspective.

GSMP members have moreover collaborated with the SME to form an efficient system for market innovation. The group expressed the need for light, versatile, suitably powerful tools for their activities. The batteries powering other drills in commerce lose amperage at low temperatures and die out quickly. This rapidly led to the development of a fuel-driven device that offered a greater margin of safety.

The group not only contributed to defining the product specifications, but also carried out tests on the drill, whence continuous and varying improvements have emerged. Indeed, 'Stone Drill' is no longer a single device, but includes a range of four models. For example, apart from the original version developed and tested by the group at high altitudes in European and South American mountain ranges, there is a model aimed at mineralogy hobbyists, who use it in caverns and mountains to fracture stones in their search for minerals.

This tribe-enterprise system forms the basis for both innovation and the creation of a consumer market, often spread by word of mouth amongst members of other groups that share the same passion. This case represents a market system centered around a group, the 'tribe', in which specific needs arise to create demand and thereby activate mechanisms of a new 'tribal entrepreneurship', in which the business actors, as part of a community (Guercini, Woodside 2012), participate by providing complementary skills.

Keywords: *tribal entrepreneurship; systemic dimension*

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How Are Markets Changing? The Emergence of Consumers Market Systems

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Purpose

How are markets changing?

This study builds upon the works of Giesler (2003, 2008) trying to provide possible answers to the proposed research question and to address a gap that appears still uncovered in the study of market systems dynamics (Siebert, Thyroff, 2013).

Primarily thanks to the opportunities offered by the new Information and Communication Technologies, the consumer is nowadays no longer an individual actor that interacts with firms on a traditional market exchange basis, but a part of an interconnected system in which information sharing, debates and opinions decisively influence behaviours and relationships with firms (Karavdic, Gregory, 2005; Cova, Dalli, Zwick, 2011; Barile, Saviano, 2014).

The reality of the emergence of consumers market systems is apparent (Martin, Schouten, 2014). Nevertheless, scholars as well as practitioners seem to have not yet developed a coherent framework for understanding and dealing with such dynamics (Giesler, 2008).

Accordingly, this study, by adopting a systems thinking view through the interpretative lens of the Viable Systems Approach (vSa) (Barile, 2000, 2009, 2013; Golinelli, 2000, 2005, 2010; Golinelli et al. 2012; Dominici, Basile, Palumbo, 2013), specifically investigates the dynamics of emergence of consumers market systems providing a conceptual framework useful both to researchers and businesses' decision makers in the definition of appropriate strategies for effectively dealing with dynamically changing market formations (Press, Arnould, 2011).

Theoretical background and methodology

Several researchers and operators have analysed the consumer behaviours with the aim of understanding what are the key variables and dynamics that characterize their dynamics and evolutions. These studies highlight that consumers market is evolving toward a systems configuration and that this evolution is affecting exchange and relationships with firms as well as other social organizations and institutions (Gouthier, Schmid, 2003; Mastroberardino, Magliocca, Calabrese, 2005; Peñaloza, Mish, 2011).

Consumer Culture Theory (CCT) has traditionally underlined the social role of the consumption and the linked influence of relationships in the definition of consumer behaviours (Arnould, Thompson, 2005; Kozinets, 2002; Thompson, Arnould, Giesler, 2013). In this perspective, however, it appears clear that the traditional marketing approaches focused on the consumer as individual actor are no longer adequate to address the challenges of current evolutionary trends that are expressions of the emerging paradigm of Consumers Market Systems.

The paper develops a conceptual framework that integrates theoretical contributions from the following research streams:

- the Consumer Culture Theory (CCT) as a theoretical perspective that highlights the relevance of the social dimension in the understanding of the process of emergence of consumer market systems (Arnould, 2006; Askegaard, Linnet, 2011; Fitchett, Patsiaouras, Davies, 2014).
- the Viable Systems Approach (vSa) as a set of general interpretation schemes that support the understanding of the evolutionary pathway that leads to the formation of consumer market systems (Barile, 2000, 2009, 2013; Barile et al., 2012; Golinelli, 2000, 2005, 2010; Saviano, 2003; Saviano, Caputo, 2013);
- the Many-to-many relationship approach for understanding the mechanism of formation of markets networks structures (Gummesson, 2006);
- the Service Dominant-Logic (SDL) as a mindset that directs focus on interaction, resource integration and value co-creation as key processes of a new logic of market exchange (Prahalad, Ramaswamy, 2004; Lusch, Vargo, 2006; Payne, Storbacka, Frow, 2008; Mele, Polese, 2011; Schembri, Sandberg, 2011; Frow et al., 2014).

Findings

The work leads to the development of a conceptual framework useful to analyse the evolutionary pathways of consumers markets systems. The framework is built by integrating:

- The vSa model for evaluating the degree of completion of observed systemic entities as viable systems in order to assess their structural configuration and systemic functioning, and then their capability of survival. This model leads to distinguish between embryonic systems, systems in via of completion, and viable systems. Moreover, it allows predicting evolutionary/involutionary trends of emerging and dynamically changing systemic entities (Golinelli, 2010).
- The vSa relevance model for evaluating the degree of relevance dynamically acquired by the observed systemic formation in terms of criticality of the resource owned by the system and power of influence that it is capable of exercise upon other entities with which it establish market relationship (Barile, 2011; Barile, Saviano, Polese, 2014; Golinelli et al. 2012).
- The SD-Logic market exchange view for interpreting key processes that characterize the emergence and functioning of market systems.

This framework can help to understand “how do markets actively reconfigure social and cultural spheres in ways that maximize their economic and ideological returns” (Giesler, 2008; Siebert, Thyroff, 2013), specifically focusing on how consumers market systems dynamically emerge.

Research implications and limitations

This study can offer a contribution to the CCT research stream providing a coherent framework for investigating the emergence of consumer market systems in a new perspective.

Furthermore, it fosters multi-disciplinary research collaboration among communities seeking a possible emergence of a new market exchange paradigm.

The study represents, however, a conceptual work that should be further developed and supported by empirical research.

Managerial implications

The paper can help businesses' decision makers to improve their managerial approaches in order to overcome the limits of traditional and still dominant views that appear no longer adequate to face the emerging and dynamically changing market configurations.

The provided framework offers a theoretical and conceptual reference to support the adaptation of businesses' strategies (Krepapa, Berthon, 2003) to the new markets requirements exploiting the opportunities offered by relationship with consumers market systems while neutralizing potential threats (Kotler, Caslione, 2009; Barile, Eletti, Matteuzzi, 2013).

Keywords: Consumer Culture Theory; Consumers Market Systems; Viable Systems Approach; Service-Dominant Logic, Many-to-many marketing.

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Fociss-R(etail) A system based sustainable strategy model for SME’s.

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Small retail entrepreneurs in the Netherlands are confronted with declining turnover and ROI. A major cause is the competition of large scale retail chains, often also in out of center shopping malls. That has set in already a decade ago but initially many decided to rely on saved money, praying for better conditions. Since the start of the economic crisis that did not suffice anymore. A decrease and even disappearance of small retail in town centers, suburbs and villages is not just a loss of income for the people involved. It constitutes also a loss of attractiveness and economic viability for town centers and villages. Besides for specific groups of people, for instance the less mobile ones, it leads to erosion their social surrounding. Small and local retail can be seen as essential for sustainable living conditions.

Avans University of Applied Sciences takes part in several projects in which conditions and specific causes for this decline are investigated and novel approaches and business models are being proposed and tested to improve the viability of small retail. It concerns specifically the food branches, fruit and vegetables, but also non-food retail such as jewelry. But then, decline is observed in all kinds of small retail: bakers, fashion, furniture, shoes and even small restaurants. Most companies find it difficult to integrate sustainability in their business strategy.

In the discussions and studies for the projects we have proposed that sustainability was a key issue for attractive and viable business plan. That is not just because they can and should contribute to a sustainable social living environment but maybe even more because sustainability offers opportunities for small retail business plans that do not exist, or are more difficult to arrange, for large scale retail. Small retail can more easily adapt to local opportunities, specific consumer requirements and expectations and regional variations in those. That can compensate for higher costs involved in smaller businesses. The present business and marketing models for retail are not appropriate to come to sustainable retail business. Worse, there is no clear view on how to come to a really sustainable business in general, in our opinion. Too often only the envisaged sustainability (how green it is) of a product is looked at and not the essential contribution a business or activity can and should have for economy and society as a whole, in particular in relation to the system(s) in which the business plays a (essential) role. Sustainable actions selected are often generic, based on standard approaches and broad ‘philosophies’,

instead of an analysis of a business specific own situation, ambition and opportunities. So these resort to mostly ‘nice looking measures’ instead of addressing the sustainability related challenges that adhere to the core business and relate to the system in which a company operates. For SME’s in general we have developed an approach called Fociss (focusing innovation for a sustainable strategy) to help companies determine which sustainability aimed actions are necessary to come to real sustainable businesses, to set priorities and give direction for further development. It is a stepwise narrowing down on theme’s, issues, sensible innovations and priorities. A crucial step is the analysis of the changes that occur in socio-economic systems (transitions) and the challenges (threats and opportunities) these offer. It leads to a very practical and strategic insight into sustainable business management issues. Core business and long term viability and profitability are essential criteria for choices made.

We are adapting this model for small retail because of the quite specific issues here (Fociss-R). Essential is the insight in the whole retail chain of their business and the various options and possible preferences that exist, at the supply side as well as at the consumer side. Then a retailer is select that supply chain (such as local, regional, organic or from large wholesale) and respond to those consumer preferences (such as again regional, seasonal, organic, partly prepared etc.) that exist at that place and people are willing to specifically visit her/his shop. Sustainability is one of those aspects issues, and at the same time making the right choices will contribute to the sustainability of the social environment. Both have to be exploited to improve the viability of the business.

The research project has not been ended yet as we would like to present the first results of this model to show how a framework to find new and sustainable strategic business models for SME’s is developed.

We like to show also that it also forms a perfect tool to educate our students in developing effective sustainable business management information.

Keywords: Retail management, innovation, strategy, core business, sustainability, education.

A Review of Co-Creation Process and the University Services

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Nowadays, Co-creation has gained importance in the business world, linking together clients and consumers at the very first stage of the idea conception for products and services creation (Muñiz, Schau, 2011; Rech Ionara; Bowonder et al., 2010; Prahalad and Ramaswamy, 2004; Ramaswamy, Gouillart, 2010; Ber, 2009; Etgar, 2007). Several approaches and criteria are given by specialists in the subject, but the evidence suggests that Co-creation is not a trivial process to implement (Gustafsson et al., 2012; Kristensson et al., 2008; Sandere, Stappers, 2008; Payne et al., 2007).

Innovative firms develop channels to establish links with all involved stakeholders, where the service success is conditioned to how each participant perform its corresponding functions (Muñiz, Schau, 2011; Ramaswamy, Gouillart, 2010; Bettencourt et al., 2013). It is also of great importance that consumers interact with the firm technology, personnel, and processes during the creation and delivery of services (Bolton, Saxena-Iyer, 2009; Bettencourt et al., 2013). Today's customers are more informed and engaged, demanding organizations to provide valuable services (Prahalad, Ramaswamy, 2004). With the customer's involvement from the initial stages of services and/or products creation, the firms increase its capacity to add value during the creation process, transforming market and business practices (Gustafsson et al., 2012). Co-creation service has become a largest source of strategic advantage for companies cultivating the ability to use the insight gained from consumers, competitors and their own abilities to create meaningful and distinguished services (Bolton, Saxena-Iyer, 2009; Bettencourt et al., 2013; Witell et al., 2011).

Objectives

The aim of this work is to investigate the co-creation method, and analyses existing models and implementation of open-innovation techniques. This will reveal whether it has been implemented previously in universities and detect patterns that underpin future studies. This research will facilitate the future development, design and validation of a co-creation model of undergraduate programs in higher education institutions.

Methodology

This study focuses on performing an extensive literature review and analysis. Most of scientific literature on the co-creation issue dates from 2004 to present, from journals such as: *Research in Higher Education*, *Advances in Consumer Research*, *Business Horizons*, *Computers and Education*, *Harvard Business Review*, *IEEE Transactions on Professional Communication*, *International Journal of Educational Management*, *Journal of Business Research*, *Journal of Marketing*, *Journal of Service Research*, *Journal of the Academy of Marketing Science*, *Research in Higher Education*, *Strategy & Leadership*, among others.

The co-creation approach of direct collaboration and customer engagement, either in the service area or the productive sector, allows the final product to be obtained according with the consumer requirements. Throughout the literature review, one can find the factors and concepts involved in the co-creation process, such as, customer participation and involvement, precise communication and transparent feedback, and the different tools to implement it. Also, issues such as the quality of product-service provided, and the aforementioned factors influence the customer satisfaction and loyalty.

Research question

This study focuses on identifying which are the main factors that are involved in a co-creation process, the ones involved in the initial stage with customer participation that allow developing a collaborative strategy, and the effects that are obtained after implementing the co-creation process. Once, these factors are clear and objectively defined, and with a solid theoretical framework, it is possible to build models for validated through SEM.

Application of the co-creation methodology to university scope is quite an unexplored field. Ribes Giner, Peralt Peralt Rillo, Ribes-Giner (2013); Ribes Giner et al. (2014) have dabbled in the application of this strategy in postgraduate programs, and have also studied the different tools used in this ground (Ribes Giner, Peralt, 2014).

Findings of the study

This study formulates the corporate co-creation strategy at institutional and educational level, focused in the students as the center and co-creators of the service provided. Different techniques are exposed to promote the optimal development of these services allowing universities to have a strategic approach, gaining strategic competitiveness in their operational context (Rexfelt et al., 2011; Umashankar, 2001). The different factors involved in the co-creation are deeply analyzed, providing the building models to be validated for future research, especially at the university environment.

Reality shows that the need and trend in most universities, not only in Europe, to apply the principles of marketing as competitive advantage, and co-creation for customer satisfaction impacts positively on the quality of teaching and the institution profitability (Díaz-Mendez, Gummesson, 2012; Kong et al., 2000). The present study helps exporting ideas from the business environment to university one, with a practical and productive approach.

Keywords: Co-creation, Higher Education, Marketing, Consumer Generated Content, Participation, Collaboration.

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A Service Co-Creation Model for Undergraduated Programmes

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Co-creation has been flourished in the business world with the aim of involving clients and consumers from the starting point of ideas and concepts generation of products and services. Several approaches and criteria are given by specialists in the subject, but is not a trivial process to implement (Gustafsson et al., 2012; Kristensson et al., 2008; Sanders, Stappers, 2008; Payne et al., 2007).

Through the costumers insights it is possible to obtain a powerfully stream of knowledge, and engaging them in collaborative and participatory tasks, the co-creation is successfully accomplish (Auh et al., 2007; Greer, Lei, 2012). Ordanini and Pasini (2008) reflect the impossibility of service consumption without costumer participation, and this interaction make possible to create value through co-creation (Yi and Gong, 2013; Etgar, 2007), being the participation a meaningful promoter of this process.

Also, the communication between firms and clients has an important influence in the co-creation (Pralhad, Ramaswamy, 2004b; Lundkvist, Yakhlef, 2004), and it constitutes one of the building block (dialogue) of co-creation in the DART (Dialogue, Access, Risk and Transparency) model (Pralhad, Ramaswamy, 2004a). Whereas the communications between both parts (consumers and enterprise) is gaining legibility in what exactly the clients want, being they essential in co-created products and services (Auh et al., 2007; Gustafsson et al, 2012; Rexfelt et al., 2011; Witell et al., 2011), which causes the focus existing in the information exchange (Gruner, Homburg, 2000). The co-creation approach has been empowered by the communication technology revolution (Rajah et al., 2008a), acting as a tool that leads customer and suppliers to an efficiency resource utilization (Payne et al., 2007; Yi, Gong, 2013).

One of the most important co-creation effects is the increase of satisfaction, caused by the generation of value through the customer (Umashankar, 2001). Many authors Bowonder et al. (2010); Ramaswamy and Gouillart (2010); Grönroos (2008); Rajah et al. (2008b); Ordanini and Pasini (2008); Auh et al. (2007) support the positive influence that have this open innovation in the clients gratification, reflecting that their participation in the co-creation process influence the final product quality and increase the satisfaction level. All the experiences gained during the co-creation makes the client feel safe and in agreement with their creative involvement, and therefore satisfied (Füller et al., 2011; Dong et al., 2008).

Objectives

The aim of this study is to measure the existing links between factors like participation, communication and satisfaction with co-creation. This is supported by the validation of the proposed model which contains the direct relationship existing between the aforementioned factors, applied to a case study in higher education institutions.

Methodology

For the hypothesis validation and model confirmation, the Structural Equation Modeling (SEM) technique is applied to a case of study.

SEM allows the validation of co-creation models in order to have an accurate confirmation of the degree of validity of the constructs that are proposed, SEM also gives positive support for the hypothesized relationships (Rajah et al., 2008; Hox, Bechger, 1998; Devasirvatham, 2012). This technique constitutes the statistical tool that will confirm or reject the raised hypothesis. Previous studies have used this approach to validate their proposed conceptual models (Devasirvatham, 2012; Rajah et al., 2008; Nambisan, Baron, 2009; García Rodríguez et al., 2011).

Research question

This investigation focuses on identifying the relationship generated during a co-creation process between customer participation vs. co-creation, communication vs. co-creation and co-creation vs. satisfaction.

The issues to be explored are:

- how the customer participation influence in co-creation,
- how the communication with customer affect the co-creation, and
- how affect the co-creation in the customer satisfaction.

Other studies (Peralt Rillo, Ribes Giner, 2013; Ribes Giner et al., 2014) has investigated the relationship generated in the co-creation process in postgraduate programmes. The present investigation is focused in the undergraduate programmes.

Findings of the study

This work allows to know the principal triggers in the co-creation process in undergraduate programmes, and the effect that it has in the satisfaction of the consumers (students). The present study contributes to the improvement of the university strategy, focusing in all the crucial factors that originate the student's satisfaction.

Keywords: *Co-creation, Higher Education, Participation, Communication, Satisfaction, Structural Equation Models.*

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Sustainable marketing handle the unknown

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Aim

The sustainable marketing paradigm is extensive and detailed at the present, both compared to the theoretical strands and to the various fields of application and interest, offering a variety of definitions and interpretations.

Therefore, if theoretically the amplitude of the approaches and content included in sustainable marketing term can be shared, on the other hand, we believe, this extent risks to be omnicomprehensive, especially in light of the importance of issues related to sustainability, providing just a label which mix a variety of different phenomena for nature and scope.

We aim to build a theoretical framework that identifies the significant differences of the diverse approaches underlying the paradigm of sustainable marketing (environmental, corporate, ethical, social) and sets the research in the current studies of marketing.

The present study carries out a systematic review of the literature, and aims to identify and describe the evolution of the paradigm of sustainable marketing. Specifically, we aim to define the knowledge domain of sustainable marketing also highlighting the links with other research fields.

Theoretical background

The theoretical framework of "sustainable marketing" is wide and varied.

In many contributions, the term comes from the overlapping of ecological and marketing issues: first of all the definition proposed by Dam and Apeldoorn in 1996. Later, overtaking ecological concerns, the concept include and integrated different interpretations and views to the social sphere (Kilbourne, McDonagh, 1997).

Recently the paradigm of sustainable marketing included three sub-themes of marketing: i) green marketing; ii) social marketing and iii) critical marketing) (Gordon, Carrigan, Hasting, 2011), and scholars investigated also the involvement of all the stakeholders (Hult, Tomas, 2010) while the previous contributions considered just consumers.

The abundance of theoretical approaches to sustainable marketing (SM) depends primarily on the definition of the term "sustainable", which, as well known, includes a dual dimension. The first one is related to the environmental principles of sustainable development, which is a development "[...] that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland Report, 1987). The second one is the social

dimension referred to the principle of the defence of human rights, that is, for firms, the duty to respect human rights and to act promptly in the event that their activities can jeopardize in any way their use (Report Ruggie, the UN Security Council, 2011).

Research design

Methodology

The research goal is to contribute to the ongoing discussion on the sustainable marketing by doing a systematic literature review. The focus is on describing different origins, topics and dimensions in research on SM. We deployed bibliometric methods (Callon et al. 1991) to deepen and provide an overview of the knowledge structure of the SM research. Specifically, to frame the state of the art of the (SM) issue, we employed different bibliometric measures: the publication activity and the co-word analysis (Benavides-Velasco et al., 2013). Indicators of the publication activity allow researchers to deepen the quantitative evolution of literature, by identifying the most representative journals, institutions and countries publishing in the discipline (Benavides-Velasco et al., 2013; Callon et al. 1983).

To perform the co-word analysis in the field of SM, we focused on the author-provided keywords. It allowed us to frame the conceptual structure of the topic and to obtain insight for future research that could contribute to the advancing, as well as, to the consolidation of research stream (Benavides-Velasco et al., 2013).

Indeed, the co-word analysis technique (Benavides-Velasco et al., 2013; Muñoz-Leiva, et al., 2012; Callon et al., 1983) focuses on co-occurrence frequency of terms (e.g. keywords or subject headings). It allows researchers to identify and disclose the structural and dynamic aspects of scientific research area (Börner et al., 2003; Callon et al. 1991; Cooper, 1982), by discovering linkages among subjects in the field and tracing emerging research areas (Qin He 1999; Bhattacharya, Basu, 1998). As Qin He (1999) claimed, the co-word analysis is a powerful technique that offers a significant approach to knowledge discovery.

Data Collection

To carry out the study, data were collected from ISI Web of Science and specifically from the Science Citation Index Expanded (SCI-EXPANDED) and the Social Science Citation Index (SSCI) databases. The choice of ISIWeb of Science as data source is consistent with its reputation of being one of the most important bibliographic databases (Sakata, et al. 2013; Cobo et al., 2011).

In order to set the research domain, we searched for scientific articles using the terms “Sustainable Marketing” as the query, as this keyword better represents the research domain under investigation (Sakata et al., 2013). To chart the actual development of our research domain we selected just papers within two ISI Web of Science categories, Management and Business for the entire period for which databases provide online coverage. The dataset used, covers a period of 28 years because the oldest paper embedded in our research domain was published in 1985. It consists of a corpus containing 879 scientific articles that have been published from 1985 to 2013.

We selected only articles (95% of all records) and no other types of documents (e.g., letters, editorials, reviews, etc.) since articles best reflect the production of the original research (Benavides-Velasco et al., 2013). Then we slimmed down the dataset narrowing it to four

research sub-area (Business Economics, Environmental Science; Behavioural Science; Social Science). The final dataset consists of 44 scientific article.

Data analysis

Although the science mapping analysis can be performed using generic software for social network analysis (Cobo et al., 2011; Börner et al., 2010) we used the free software Bibexcel (<http://www8.umu.se/inforsk/Bibexcel/>), as it has been specifically developed to manage data from different bibliographic sources, such as ISI Web of Science (WoS), Scopus etc., and to build maps that can be read by software such as Excel, SPSS, VOSviewer, etc. (Cobo et al., 2011). Specifically, we used VOSviewer (version 1.5.4) to create map based on network data. The map has been created using the VOS mapping technique and the VOS clustering technique (Van Eck, Waltman, 2010). First of all we analysed data respect to the year of publication, to the journals and to the geographical area in order to identify the main journal and the tradition/emergent area of research for countries (Benavides-Velasco et al., 2013). Afterwards we read and analyzed qualitatively the 44 selected articles.

Sustainable marketing: dimensions and trends

The bibliometric review showed a peak of scientific production and interest in 2012 (Figure 1 and Figure 2) and a concentration of contributions in the Journal of Macromarketing with a prevalence of theoretical studies with respect to empirical research.

Figure 1- Published Items in Each Year

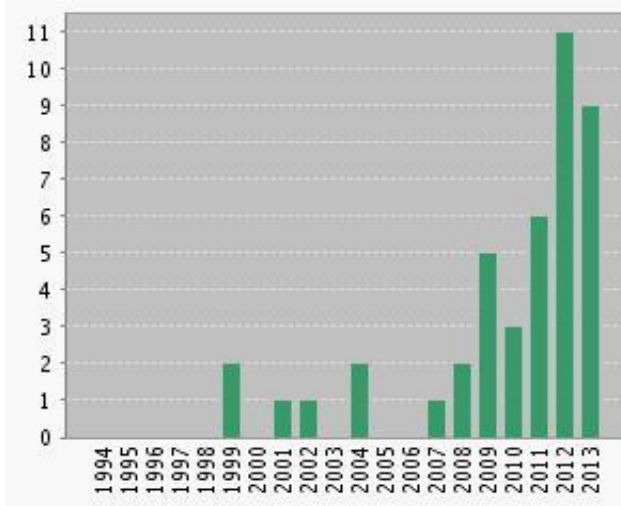
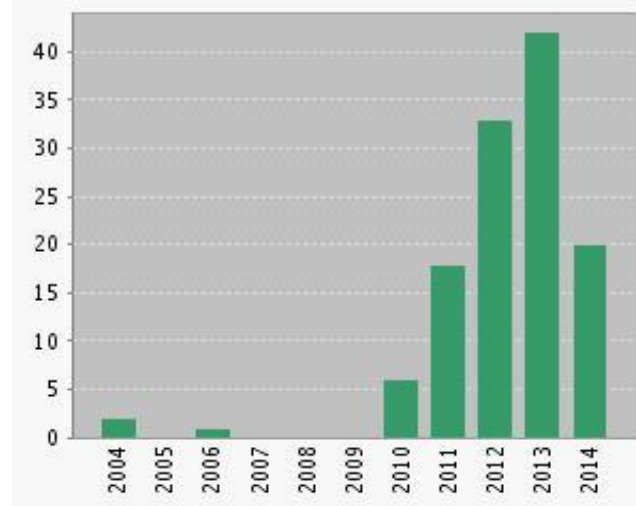


Figure 2- Citations in Each Year



Indexes=SCI-EXPANDED, SSCI, A Timespan=All years.

The study contributes to the study of marketing in that it establishes the knowledge domain and the evolution of the contributions on SM.

The study also provides a mapping of the scientific production on the topic by identifying the various streams of research and the most influential contributions so far.

The qualitative analysis of the 44 selected contributions highlighted that literature suggests different approaches.

Some authors emphasize the need of a contamination of discipline which requires a break from the positivist epistemology and the enrichment with other perspectives (political science, psychology sociology, anthropology, ecology) (Gordon, Carrigan, Hastings, 2011). Authors emphasize the need to put together three perspectives: the green marketing, which asks businesses to create products with low environmental impact, but this discipline has the limitation of not being able to affect change in the behaviour of individuals; the social marketing, which may impact on changing the behaviour of individuals, encouraging a green lifestyle and an increase of the demand for green products, but not all are affected; the critical marketing which has the tasks of changing the rules of the market, of promoting the sustainable production and consumption, and where the key players are the institutions (Gordon, Carrigan, Hastings, 2011). Others propose to adopt a holistic approach that takes into account three aspects, consumption experiences, marketing networks and sustainable development, stressing the need to intervene on two capacities: the ability of the market, as the level of consumption is too high to guarantee the same level for future generations; the resource capacity, as the population grows more (Achrol, Kotler, 2012). Some authors suggest to interpretive the concept of sustainable marketing using the main business theories. Until now marketing has been more data driven than theory driven, so is emphasized the need for a sound theory based to understand the interplay between sustainability and marketing and which would allow to generate new research questions and to explore the value of the practices (Connelly, Ketchen, Slater, 2011).

Conclusion and main implications

Marketing is been blamed for the uncontrolled consumerism of recent decades, where incitement to consumption is not been equivalent to the welfare of society. Many studies have emphasized the short vision of marketing, analyzing the effects of the increase in consumption respect to the pollution of the environment (Fuller, Ottman, 2004), to the exploitation of territories (Chhabra, 2009) and of cultural sites (Cox, Wray, 2011), to the social inequalities produced (Hunt, 2011). The rehabilitation of marketing goes through the concept of sustainable marketing, which recognizes a new role to the marketing, that is to contribute to sustainable development, becoming sustainable itself (Gordon, Carrigan, Hastings, 2011). The new marketing should create a consumption that respects the environment and protects the consumer from an over-consumption: the sustainable marketing must shift the focus from the man (anthropocentric) to nature (biocentric) (Achrol, Kotler, 2012).

For remodelling the content of the new marketing and for the acquisition of its sustainable nature, literature suggests different approaches.

Beyond the method all scholars agree that in its new role marketing should be directed to the distribution of benefits, to the compliance of needs generating satisfaction rather than orienting towards excessive materialism and unsustainable consumption.

In terms of business practice, the study highlighted some for entrepreneurs and managers: some elements for the definition of a sustainable marketing practice thus the basis for the development of a systematic methodology and application of it.

Keywords: sustainable marketing, social marketing, green marketing.

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Ethnoanthropological perspectives in comparison about the origins of symbolism

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Following (De Lauri 2013), an interdisciplinary outlook is, by now, an indispensable approach from a general epistemology of social sciences standpoint. In this regard, therefore, we wish to carry on, within the economic anthropology framework, an historical-comparative analysis turned to shed light on the possible early origins of symbolic function, that is to say the main feature of human being. In this framework of comparison, a multidisciplinary approach will be pursued to this end. To be precise, starting from the pioneering work of Claude Lévi-Strauss on human symbolic function, considered within the structural anthropology framework, we will put into a contextual comparison some perspectives of psychological anthropology (Ingham, 1996; Lo Castro, 2006) mainly based on the Freudian and Lacanian psychoanalytic theoretical systems on the one hand, with the ethnographic and ethnomathematic researches achieved by Denise Schmandt-Basserat (Schmandt-Basserat, 1992) on the early origins of writing and counting on the other hand, it will be possible to identify some common and analogical aspects and methods which might contribute, if laid out into a unique multidisciplinary framework, to further clarify what might have been the early stages of the human evolution in which symbolic function arose. Jacques Lacan, on the basis of the previous Freudian orthodox framework, has also contextually reconsidered the work of Lévi-Strauss on the rising of human symbolic order in which the triadic Œdipal structure plays a truly primary role in starting up the crucial passage from nature to culture. In doing so, he pointed out the main psychodynamics mechanisms underlying such a primary transition, among which the disavowal mechanism which was first considered by Freud in explaining attempts of the fetishism and, then, supposed to be a general psychic mechanism for the normal and pathological development of human psyche, hence supposed to be at the basis of symbolic function (Iurato 2013) as well. On the other hand, recent history of mathematics researches (Israel, Gasca 2012) have also claimed attention on the early origins of the concept of number meant as the first outcome of the incoming human symbolic abstraction, just referring to the above mentioned work of Denise Schmandt-Basserat. From all this, it follows that a remarkable role in the dawning of number was played by the accountability methods and techniques of the early primitive economic activities and practices which may be usefully reinterpreted by an unavoidable historic and dialectic materialistic stance, supported by well-rooted ethnographic data, which have led to a crucial bifurcation between the two main categories of quality and quantity. Moreover, Karl Marx has worked out a theoretical system in which a very interesting fetishistic reinterpretation of certain economic processes and notions – like value, money and utility – has been given and that, if properly contextualized from an historiographical viewpoint, provides a framework coherent with the previous ideas summarily outlined above.

From this convergences of ideas coming from different disciplinary contexts, we think that a clearer and deeper knowledge on the early origins of symbolic function may be attained.

Keywords: *Ethnoanthropological perspectives; origins of symbolism*

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Fuzzy logic and the well-being index in Chihuahua, México

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Often ethnography is considered a type of qualitative research, because they care more subjective interpretations of numerical data, which is a problem when trying to understand how aspects qualify as "fuzzy" as the wellbeing of a population (Anthony Giddens). Census offices and other organizations around the world have collected information with extensive databases, which provide indices such as; poverty, social wellbeing and human development, among others, and always compared this parameter or number against the ideal, and so it can show the status of the population is located. This is a way to measure, but wellbeing is something that goes beyond an indicator, it is part of a cultural and evolutionary process. What is happiness for a population? And wellbeing has not the same variables for different country. Trying to explain and ensure what's constitutes the welfare of the people, it is so multidimensional and complex as life itself, does not allow conceptual boundaries that can explain the term well-being in all its implications, although researchers have refined the theme through years, is not possible to reach the origin or genesis of that is what makes the human being possesses a degree or level of wellbeing.

The world attention is now devolved at looking wellbeing as a multidimensional concept in which not only money or earnings are the main subjects. This new economic theory has suggested a wide movement called "BEYOND GDP" that has understood that wellbeing is made by quality of life for us, our family, our children our parents, by quality of work, that is equal opportunity of career, opportunity to work in a safe place, opportunity of work-life balance and so on.

This research attempting to give a subjective interpretation of numerical data that allow us to appreciate which is the wellbeing level in the population by Fuzzy Logic system. The useful application of this tool is more common in electronic automation processes, and technological development.

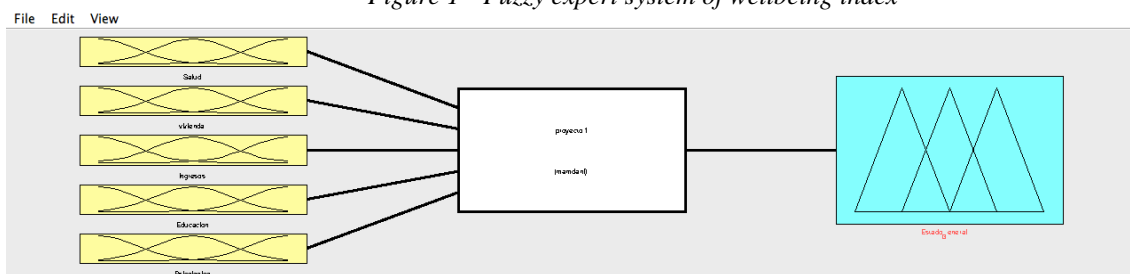
This research presents the initial results of a wider project implementation in different areas of management and business development matters, such as gender equity corresponding to the

health and workload on women and human resources research, to test the ability of employees within an manufacture industry or regional development subjects, to analyze the influence of globalization on behavior Textiles industry in Mexico.

Tindara Addabbo, Gisella Facchinetti, in their paper; *Fuzzy logic and the capability approach*, imply the evaluation of unobservable in a context of complexity and interaction amongst the different capabilities.

The more relevant differences between this paper and Tindra & Gisella study are two. One is due to the starting point. This research start from data were they have to pass from a crisp definition to a fuzzy one of the several concepts was study (health, household, earnings, educations and psychological wellbeing). Starting with distribution functions it built the membership functions they need. Next this propose different ways to aggregate these results to reach the final evaluation.

Figure 1 - Fuzzy expert system of wellbeing index



Objective

Apply the method of Fuzzy Logic to subjective subjects such as wellbeing, as a model for application in various administrative problems.

Research Questions

How to describe the index wellbeing of a population?

Which are the variables that should be involved in the development indicator?

Fuzzy Logic is a useful tool for this type of research?

How to convert crisp values obtained in field research, in fuzzy values that give an appropriate linguistic result?

Finding of the study

We assumed that the model was successfully applied as it allowed to recognize those factors where the subjective aspect is more important than quantitative data. For instance; when evaluating the health of respondents, this cannot be quantified so you need to use linguistic aspects to get a better idea of how the individual feels. In the psychological condition, all the people try to define their situation in words that cannot quantify their emotions, they were vaguest and imprecise. Fieldwork included 2011 surveys, the collected data allowed to understand the variables distribution and set four levels and behavior of the general condition of the population developed and it can distinguish those levels which there was more occurrence.

To set rules fuzzification, were necessary considered and think of the general condition of the individual, according to linguistic scales. The study in general, offered better results when

compared with crisp data by means of regression analyses, the last results were more close to the reality. This advantage is evident when comparing the outcome in terms of health by using fuzzy experts system provides more variability in the obtained results.

Keywords: Ethnography, Fuzzy Logic; well-being index.

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BUSINESS PROJECT AND ISSUE MANAGEMENT

The Relation of Innovation and Project Management in Small Enterprises - A Systemic Approach

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Aim

As Turner et al. 2009/2010 state project management is a key factor for small and medium sized enterprises today, not only management of standard operations but especially for sustainable innovation and growth. The aim of this abstract is to present the first findings of research in progress regarding the connection of the innovation activity and the project management practice in a small German industrial enterprise from a systemic point of view; i.e. to identify influential relations and factors as well as their consequences for the company's system structure. Thereby enabling the CEOs and employees of the enterprise to get a better understanding of the structure of their social system and to use this knowledge to induce needed changes in terms of expertise but in terms of social interaction.

Literature Review

Due to the enterprises interest in Open Innovation the focus of this research in progress is on open innovation, project management and qualitative research in this field; for in depth research is still scars in the context of both aspects.

Open Innovation is a still growing and constantly evolving research field (Curley, Salmelin, 2013), but most studies and publications focus on large American companies and a quantitative approach (Chesbrough, 2003, Chesbrough et al., 2006, Gassmann et al., 2004). Qualitative research about small European and especially German enterprises or SMEs is rare. Apart from a few exceptional studies (van de Vrande et al. 2009/2010, Rahman and Ramos 2010) this field is still barely touched; the same is true for project management research in the context of small enterprises (Turner et al., 2009/2010; Murphy, Ledwith, 2007; Letmathe et al., 2007; Braehmer, 2008; Marcelino-Sádaba, 2012; Pérez-Ezcurdia, Marcelino-Sádeba, 2012); only the study by Turner et al. 2010 uses a qualitative approach in combination with a differentiation between the three enterprise categories. Another gap in these two fields is the lack of differentiation between the categories of micro, small and medium sized companies in the current studies. The problem here is that these differences in size and company structure also lead to differences in resource bases, management structure (owner-managers or external managing directors), employee

structure and behavior (age, education, engagement). So it is impossible to simply transfer the results of larger companies to small enterprises (Chesbrough et al. 2006; Turner et. al. 2010).

Methodology

This research is based on the grounded theory by Strauss and Corbin respectively Corbin and Strauss (1996, 2008) with a focus on the work of Corbin (Corbin and Strauss, 2008) that addresses current developments and changes in the field of qualitative research as well as the grounded theory itself; thus fortifying this approach especially in little-researched areas with a high level of complexity.

This is a single case study with a systemic-constructivist paradigm; meaning a moderate constructivistic as well as a systemic attitude regarding specific processes, aspects and constellations of actors in a small enterprise. With a view to the strong orientation towards practical aspects respectively the company and the consideration of the individual as an essential part of the system, the typical “big” system theories (e.g. Parsons, Luhmann) do not seem to fit the setting; they are too complex, multilayered and focus far too little on the particular corporate practice. Therefore this study uses a systemic approach that has proven itself fit for the research of companies and is understandable for academics and practitioners alike: The individual-centred system theory by Bergmann (2005, 2006). Therein companies and markets are described as social systems that consist of the communicative acts of each actor. Every actor introduces his or her individual style of language and interaction but is also influenced and changed by the systems characteristics (company culture, manners etc.); so the individuals are reintroduced in the social system.

The data is collected from a small German industrial enterprise with currently about 45 employees and two owner-managers. The findings presented here are based on in-depth interviews with the CEO's, employees, co-developers, customers and consultants who were involved in project as well as innovation management processes. The interviews were recorded and later transcribed verbatim. The data also includes field notes, notes and protocols from participatory observations, and internal corporate documents.

Data are organized and coded with the help of a computer-aided qualitative data analysis software (MAXQDA), which supports the process of analysis at the different stages of coding (open, axial, selective). The analysis was guided by a set of questions, which facilitated the identification of the different aspects of the relation between the innovation and project management.

Results and Implications

The first results in this context were presented in Haase 2014 and focused on the role and quality of project management in small enterprises. The paper described three important areas that have proven themselves to be important for the companies project management and are influencing the social dimension and the dimension of expertise: First the structure of communication, second the decision-making structure and third the will to implement and to follow taken decisions.

Because the research is still in progress this abstract focuses solely on the last factor and combines these first results with the data regarding the specific innovation activity; thereby giving a short overview about the influential relations and factors as well as the consequences for the social dimension and the dimension of expertise identified so far.

Innovation and the will to implement and to follow taken decisions

The main factor in this area was the contradictory behavior respectively the volatility of the owner-managers in terms of task management and the particular implementation speed. In the context of the R&D management specifically the open innovation initiative this factor leads to different behavioral patterns. First there are open innovation projects with actors from institutions the company is not directly related to or does not depend on, like nearby universities or private households, i.e. different groups of students or private persons.

In this context the company collaborates, exchanges information and uses the project for marketing purposes, but the implementation of the developed ideas never happens or in some cases the ideas are used in the original or a similar form only years later; in addition they give no feedback about the state of implementation, or whether input was used in any way.

The second kind of project involves actors from organizations the company depends on, whereby the magnitude of dependence differs. These actors are providers, customers or partners in public subsidy programs. In this cases the company collaborates, exchanges information and uses the project for marketing purposes, but also gives feedback and is trying to implement the results as fast as possible.

These findings suggest that one main influence factor for the management's innovation behavior is the degree of dependence of their innovation partner.

Consequences for the social dimension and the dimension of expertise

The consequences for the company regarding the dimension of expertise could be rather negative. Although in the context of the social dimension their reputation in the market does not suffer and they seem to be a suitable partner for public subsidy programs, their behavior towards the group of innovation partners with a low degree of direct influence could lead to a strong dissatisfaction on the part of students and private households; resulting in a loss of potential development partners and future employees.

A small company is strongly bound to and embedded in its regional surrounding (Granovetter 1985, Jack, Anderson 2002); in this case a rural area that is not very attractive for young graduates. Furthermore it does not have the resources to compete for trained specialists. Because of that the company needs to rely on young academics and apprentices who already decided to stay in this area, meaning students from nearby universities and the children of regional households.

In conclusion, the company's behavior (social dimension) could have a huge impact on the dimension of expertise in terms of a poor reputation amongst young graduates and potential apprentices resulting in shortage of applicants and a growing scarcity of qualified specialists as well as a loss of innovation partners.

In accordance with Haase 2014 these findings suggest that the social dimension has a rather strong influence on the dimension of expertise.

In summary, the findings show that there is still a great need for further research in the field of project and innovation management in small enterprises. The project management has an enormous impact on the whole company and can be used as a starting point for an analysis of nearly every other company aspect.

The results offer new insights and potential recommendations for those interested in key points for improving the overall management and especially the project and innovation management in small enterprises.

Keywords: Project Management, Innovation, Open Innovation, Small Enterprises.

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Project Impact Constellations - New tool to grasp the complexity of public sector projects

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Purpose

Project management is gaining importance both in the private sector, where some innovative companies earn more than 50% of the turnover through projects, and in the public sector. In the private sector short product life cycles, constant need for process optimization and quality improvement, new technologies put pressure on project managers. But, for technical projects the project management tools are quite well elaborated, the success rates are rather satisfying.

In the public sector the number of projects increases, too, due to extensive funding schemes (UN, EU) and increasingly pressing societal problems (poverty, climate change) that need to be solved. But for public sector projects the probability to fail seems significantly higher, because of unclear project parameters, diverging interests, opinions and ideas, cultural differences or political concerns. (Klein, 2012; Puroo et al., 2012) Public sector projects are mainly large projects and they increasingly deal with interdisciplinary sets of targets touching upon different topics at the same time (economic, social, environmental), addressing a higher number of actors in different fields (business, research, administration), and sometimes involving several levels of implementation (Multi-Level-Governance). Each of the stakeholders involved might have a different perception of the project, its goals and its success.

Therefore, public sector projects are mostly highly complex. For project management and project managers it is difficult to grasp the whole complexity and to react accordingly. Proper tools are missing.

New tools need to be developed to add a systems view to project management and evaluations by balancing multi objectives, trade-offs and ambiguities, by integrating knowledge, views and aims of stakeholders, by managing extremes, uncertainties and risks, by dealing with emergence, power issues and boundary questions, by reflecting on and learn from interventions (Hummelbrunner, 2011; Jackson, 2010; Midgley, 2007; Reynolds, 2014; Tanaka, 2014).

Background

Project success depends on to what extent the project goals are met, and whether the goals actually lead to the intended impacts, outputs and outcomes. Two factors seem to account extensively for complexity and uncertainty in this respect.

First, it is proven, that project success depends both on internal and external stakeholders, but, also that success is perceived differently by those stakeholders (Lester, 1998; Toor, Ogunlana, 2010). Research on stakeholder perceptions and expectations is rather new: From the 1990ies critical success factors were being developed and the importance of a number of internal and external stakeholders was recognised but even in the 21st Century project success is still rarely evaluated across multiple stakeholder groups (Davis, 2014; Turner, Zolin, 2012).

Even if project goals are well elaborated, they are usually set by the management (and maybe a few others) and are therefore likely to mainly mirror their perception of success. It is suggested that project success criteria should encompass “the perceptions of multiple stakeholders” as “inappropriate evaluation of the success criteria of an existing project could misdirect the project's decision making, demotivate employees and establish an unproductive organizational culture” (Turner, Zolin, 2012).

Second, and this is partly due to the above, evaluators frequently encounter severe gaps between formulated project goals and the short-, mid- and long-term outputs, outcomes and impacts they actually result in. The so-called „black-box“ between „input and output“ needs to be investigated in order to learn about the underlying mechanisms and to improve success (Chen, 1990; Rogers, 2008; Stame, 2004). Turner and Zolin (2012) suggest to examine the success during, but also months and years after the end of the project. At best success criteria should be agreed upon with all relevant stakeholders before the project start and then repeatedly throughout the project (Turner, 2004). This seems hardly possible in large-scale public sector projects, due to time and money constraints. But even if personal contact is possible, extremely diverging interests, political or cultural background, hidden agendas etc. can impede the exchange about the real views and goals.

The article introduces the tool Project Impact Constellations which offers project managers to „test“ their goals against the perceptions of other stakeholders in order to understand the interdependencies of the project system and possible reactions of project stakeholders and whether the project goals are likely to lead to the intended impacts, even if they are not present.

Systemic Constellations

The tool Project Impact Constellations – is an adaptation of systemic constellations (“Organisationsaufstellung”) for its use in projects and programs. Systemic constellations were developed in the 1990 by several German authors who transferred the method from family therapy to organisations and other systems (Sparrer, 2000; Varga von Kibéd, Sparrer, 2011; Weber, 2000). Over the past years the method has found its way into a number of endeavours, from consulting of enterprises to regional development, adult education, administration and policy making, etc. (Gminder, 2005; Kohlhauser, Assländer, 2005; Roevens, 2009), also the use at different stages of project management (Huemann et al. 2013; Rosselet, Senoner, 2013) is being tested.

Although a number of different types of systemic constellations has been developed since then, all approaches share the common feature of observing and analysing the interactions and

relationships between actors and parts of a system to find out how they work in order to create new ideas for problem solutions.

This is done via a spatial representation of the internal picture one has of the relationships, orders, hierarchies, dependencies and communication patterns of a system (Grochowiak, Castella, 2002). This explicit and implicit knowledge is arranged in space, using either persons or figurines (wooden figurines, puppets, shoes, cards on the floor etc.) as representations of parts of the system (Roevens, 2009). Sparrer (2009) describes constellation work as a language of the whole system, which is more than the verbal and nonverbal communication of the single representatives within, but the communication between them, a kind of sign language (Schlötter, 2005).

Thus multi-dimensional and multi-layered information of the system is provided in analogue form as a picture, supported by spoken language. Such pictures are easy to understand and show deeply rooted structures and dynamics of a project or program, which can usually not be found in official documentations and are even difficult to gain through common methods of inquiry, such as interviews. It is a method that simultaneously allows emotional, affective and cognitive experiencing and learning for individuals and groups (Kopp, Martinuzzi 2013).

Project Impact Constellations

The tool Project Impact Constellations was developed based on experiences with 16 program evaluations and recently tested in a large project for the development of climate change mitigation measures for a region in Germany. Based on the climate change case study the paper shows how Project Impact Constellations can help project managers (and other stakeholders) to understand the system of their project better.

The tool allows the arrangement of both organisations/persons and abstract elements (goals, impacts). Thus relations between the project, the project goals, the intended impacts and the relevant stakeholders can be visualised, providing information on constellations, perceptions, views, aims, questions of power and system boundaries. The tool helps to understand a phenomenon vividly described by Klein (2012). The stakeholder responds to the project, and the project is responsive to the stakeholders, and the stakeholders respond to the project's response to the stakeholders, and so on.“ and allows 2nd and 3rd order observations.

Benefits and Limitations

Project Impact Constellations is understood as an add-on to traditional project management methods and can be used in combination with other systemic methods, providing additional information. It enables project managers to better understand how goals and intended impacts of a project are received by stakeholders, how stakeholders and impacts might affect each other and influence their perceptions on project implementation and success. The tool has potentials to shed light on unintended impacts as well as on project uncertainties (Atkinson et al., 2006; Morell, 2010).

By understanding the underlying mechanism project managers gain a better basis for decisions if applied during the project and valuable input for the learning process at the end of a project.

Project Impact Constellations require the project managers' openness to emotional and affective impressions and as every tool, the findings do not represent “the truth”, but deliver new insights, thoughts, ideas for problem solutions which need to be tested against reality.

Keywords: systemic project management, systemic constellations, project success.

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Is Speed the real 'Enemy' of the Systems Approach?: A Practitioner's Reflections on the use and adoption of Systems Thinking in Urban Regeneration in the UK.

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Objectives and rationale for the paper

This paper takes as its inspiration the arresting title of Churchman's (1979) influential book *The Systems Approach and its Enemies* which, together with Churchman's other major works, tackles deep philosophical issues about using the systems approach to improve social systems. The arguments expressed by Churchman have been updated, enhanced and made practical by writers like Ulrich (1983), Midgley (2000) and Ulrich & Reynolds (2010) and have been a mainstay of debate about the systems approach to the present day. The ideas continue to occupy the thoughts of researchers, theorists and practitioners working to improve analysis and decision making through the use of systems ideas.

Churchman had in mind particular 'enemies' when he wrote his book, but the traditional 'enemy' of the systems approach is usually identified as a tendency towards reductionism (Midgley, 2000), where those who set out to improve a problematic situation seek to understand it using objective, causal relationships perhaps at the expense of a richer, more comprehensive understanding which may lead to better or more sustainable proposals for improvement.

This paper suggests that it is speed or more precisely the speed of action, resolution or decision which is the real 'enemy' of the systems approach rather than the tendency to, or preference for, reductionist methods. By examining the practice of urban regeneration management in the UK and by reflecting on the author's personal involvement as a project consultant in this field the paper argues that systems thinking ideas and concepts are readily identifiable in the way practitioners think about urban regeneration but the pressure to take action leads those same practitioners to choose reductionist approaches and methods. They may do so out of convenience, familiarity, institutional pressure and disciplinary allegiance, but increasingly it is the urgency for action and results that drives those choices. This may limit the 'comprehensiveness' of urban regeneration programmes generally but it may also make it harder for advocates of the systems approach to get wider acceptance of their methods and ideas, especially if these are perceived as time-consuming and open-ended.

Findings

This paper has various implications for systems practice. First, the comparison of core ideas from systems thinking with the actual practice of urban regeneration reveals that the ‘systems approach’ has had no small influence on the way regeneration practitioners perceive problems and shape solutions, even if this is only at the level of a common language used for describing problem situations. In itself this observation offers considerable encouragement and optimism for those who advocate the systems approach. Secondly, and more pressingly, the paper emphasises an important property of systems methods and ideas, namely their productivity in use. If methods are perceived as time-consuming, inconsequential or permitting unnecessary complexity they are unlikely to be taken up. This means that the ‘next generation’ of systems methods have to take productivity very seriously. A number of “systemic problem structuring” approaches appear to observe this (for example Foote et al, 2007) but the pressure to produce fast and reliable outputs from analyses should be a cornerstone of systems method design.

Approach and structure

The paper reviews existing systems literature and regeneration literature, and employs the approach of the reflective practitioner in order to support the main ideas underpinning the argument. The author was employed as a consultant in urban regeneration project management during the period 2007 to 2011. During this time the author observed and participated in a number of urban regeneration projects. Some details of the largest project (by financial value) are provided in order to advance the argument.

This paper is structured as follows. In the first section an explanation of what characterises the systems approach is set out following the well documented arguments of recognised systems writers such as Churchman (1971), Jackson (2000, 2003), Ulrich (1983) and Midgley (2000). The brief discussion focuses on what might be argued as the key concepts including emergence, holism, and the ideal of seeking comprehensiveness through “sweeping in” requisite information from multiple viewpoints so that a thorough analysis of the problem situation is achieved. The discussion culminates in Midgley’s (2000) ideas about intervention and the core issue about selecting systems boundaries which, in a very practical sense, is a core concern for practitioners working in regeneration.

The second section explains in broad terms the practice of urban regeneration in the UK. Urban regeneration is defined simply as that which relates to the improvement of towns and cities. The practice of regeneration is wide ranging and includes a variety of means to improve the economic, social and environmental conditions of people who live and work in urban areas. Regeneration is a relatively new activity with a very recent history. By reviewing some of the literature it becomes apparent that much of the theory of regeneration shares a good deal of philosophical ground with systems thinking. Some of the mechanisms for delivery of regeneration programmes are explained in this section in order to emphasise the conditions which create urgency for action and results in regeneration practice.

In the third section the author reflects on his own experience of working in the field of urban regeneration. The account provides an outline of a typical project which in principle aims to incorporate some of the key elements of the systems approach (or something resembling a systems approach). The tendency to fall back on traditional, reductionist methods is then described and some of the reasons explaining this are investigated.

In the final section the context of decision making in urban regeneration are drawn out and the implications for the design of systems methods are discussed. Two or more examples of systems thinking from the literature are highlighted to show that methods can be designed to be responsive and thereby meet the needs of urban regeneration practitioners.

Finally the paper concludes with some implications for the design of the 'next generation' of systems methods and the implications for future research in this area are discussed.

Keywords: *Systems thinking; boundary critique; critical systems thinking; systems approach; urban regeneration; problem structuring methods (PSM); project management; housing-led regeneration; community involvement.*

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Projects, Super Sized Projects and Black Hole Projects

We can't manage all projects the same way

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Introduction

According to common belief, a project is a temporary endeavour to solve a problem. It has a start date, a specific deliverable, an allocated budget that is based on the schedule, the selected solution and the development team, a few stakeholders and an end-date. This idea served its purpose in the '70s and '80s when application system specifications were written 'over coffee' on a napkin, and application systems automated specific operational procedures, were coded in COBOL or FORTRAN and were developed on and ran on mainframe computers, but it is not adequate today.

Projects

In the mid-'70s, two Systems Analysts could undertake the analysis, feasibility, design-less development, testing and deployment of a system in six months. Most of the projects at the time required single digit person-years of effort. Since the '80s the size of application system development projects have grown. Gone are the days when two systems analysts can design, develop and deploy application systems in four months. The size of system development projects grew, some became very big and many of these very big projects changed how they needed to be developed to attain an expected outcome. Today many projects are very large, complex, cost millions of dollars to develop, use many people and need a Project Manager, formal methodology and project management tools to be developed and have a chance at being successful.

Super-Sized Projects

In the '90s some of the very large projects evolved into larger than very large projects. These need to be developed in a well-defined development environment, in large organizations, using a customized project management methodology, and an iterative systems design and development lifecycle (SD²LC). They have constantly changing requirements as initial requirements are not well defined or complete, often create insurmountable challenges during development and/or during deployment and induce changes in the organization or its processes that have significant impacts. Managed simply as very large projects, these projects will not meet all the usual or all the initially defined success criteria and will cost significantly more than the originally allocated

budget, making the measuring of their success as challenging as their development and deployment. We will call these projects Super-Sized Projects (SSP).

SSPs employ more than 25 people, take more than 2.5 years and more than 60 person-years to develop, have over 100 K lines of code (LOC), costs more than \$8 million to develop and more than three times that or \$24 million to deploy.

These projects' manager often has more than seven direct reports, who demand that the PM be not only a good manager but also a borderline leader. As the effectiveness of our standard project management methodology is inversely proportional to the size of these projects, and as team size increases the development effort takes a smaller percentage of the total effort expanded, the productivity on SSP projects is on average lower than those of other projects and the duration of SSPs in spite of the greater number of people on them is longer making team members' retention a more important issue.

To develop SSPs we need to make changes to consider:

- The requirements definition process: The list of requirements defined in the project charter, needs to be allowed to change during the development process. The proverbial change management process is sound academically but does not usually work when developing an SSP.
- The development environment: SSPs need formal and customized Change Management, Risk Management, Communications/Engagement Management.
- The governance structure: SSPs need an effective management team, a Project Leader, and project governance.
- The methodology: Wishing for a project phase to be completed before the next phase is started is logical, common sense and as highly desirable as it is unrealistic when the project is a SSP.
- The process to establish the budget: It is hard, arguably, impossible to define and design an SSP's functionality prior to its goals becoming clear, as the functionality is never final. As changes are continually made after project initiation, so too must the established budget increase, as the Change Management process costs money and changes to the project's functionality can cause the original schedule to be delayed and costs to rise.
- The development team composition: It is harder to determine prior to project design and initiation, the number of people that will be needed, when they will be needed, the skills that they will need to have and the level of these skills. So the SSP ends up with an inadequately large development team or with team members having inadequate skills, except the group that administers the project but does no development, which grows.
- The allocated skill sets: While a small project may only need mediocre skill sets, an SSP must have subject matter experts who are accountable, dedicated and committed.
- The technology: Due to their size, the technology needed by an SSPs is often too complex for the organization and/or the resources available to deploy and support it. The viability of the SSP's technology maintenance and integration must be part of the design and deployment strategy, but usually is not.
- The concept of operations: To produce paradigm shifts in the organization's post-deployment operation, changes to the standard operating processes and concepts have to be expected, planned, and deployed as part of the project. User engagement during development is an overhead that is most often ignored.

- The soft skills and the art of developing teams: Project Leaders must have the soft skills, pay attention to people, be able to build teams that create value, foresee problems and have explicit accountability. For organizations to compete and excel in today's complex business environment, and lead SSPs, management competence is necessary but no longer sufficient. If success is to be the only option then SSP Leaders will have a different paradigm about the importance of and the variety that exists amongst people and the need for a Leader.

Black Hole PROJECTS

Today the size of some SSPs exceeds manageable upper bounds. The evolving technology and project developing methodology spurred the imagination of organizations in their reach for more elusive goals and lead them to conceive and undertake larger and larger SSPs. These large projects are attempted but cannot be developed with the same skill set, the same methodology and in the same development environment in which we develop SSPs and smaller projects. They use an unmanageably large development team with too many people that keeps growing and have very large number of managers who have few explicitly defined responsibilities. They have on-going changes to established requirements, are too complex for anyone to explain them in their entirety, are started not really designed, take too long, are too complex, will consume all available resources. Before they are finished, they will have cost several times more than their poorly estimated budget and will not be considered a success.

These totally overwhelming, all consuming, centers of organizational focus are analogous to the most exciting concept in the universe and so we call this third type of project a Black Hole Project (BHP). BHPs are beyond our current project management development capabilities, are generally not viable, and hence, they fail by design.

They have numerous stakeholders who have different needs much like 'wicked' projects do, and whose needs and views will change as the development proceeds causing high coordination costs as they need to be subdivided into multiple sub-projects. Together these projects generally start consuming all of the available corporate effort, funds, and attention, even though they show no benefit. Examples include Boeing's attempt to build the 787 Dreamliner, which intended to integrate some 380 major subcontractors; NASA's James Webb telescope which was budgeted for \$1.6 B and ballooned to a cost of \$8.7 B; the F-35 fighter jet that is criticized in over 1,500 articles for: 'They have 22 TEST PLANES – NONE IN PRODUCTION' and many others.

BHPs employ more than 250 people, take more than 1,400 person-years to develop, have cost more than \$50 million to develop and more than \$150 million to deploy. BHPs have such high sunk-costs and have such great momentum as to be next to impossible to stop. All indicators say we can't manage them but we do attempt BHPs, and fail.

BHPs are in general unsuccessful because:

- Large teams: BHPs employ more than 250 people, take more than 1,400 person-years to develop. Their development and management teams, which keep growing are orders of magnitude larger than the size of teams we know how to manage and aligned effectively.
- Inadequate governance: The standard governance structure that is workable in the organization's culture is inadequate for this project's needs. Governing team members in such large team setting, develop acute 'can't-do-nothing' syndrome. And The oversized team keeps growing in numbers becoming less and less effective because they are not accountable for the resources they spend;

- System requirements focus: The development team and SMEs who define requirements, are focused on system requirements that are designed to improve the efficiency of the operation. They lose sight of the project's vision and intended outcomes, and the importance to create value or a paradigm shift. Thus measuring the success of a BHP is as challenging as developing and deploying a 'wicked' project. Because of the size of the project and the teams, many SMEs will be consulted who, will focus on the way processes work today not on innovating for tomorrow.
- Complex technology: The technology the developers embrace and want to deploy turns out to be too complex due to these projects having over 20 M LOC and over 3,000 function points, and application program interfaces (API) to a vast number of software applications that need to be brought on board to satisfy all the sub-groups, resulting in it becoming too complex for the organization and/or the available resources to support.
- Skills of (sub-project) project managers: PMs of sub-projects cause several problems including causing additional overhead by leaving the sub-project before the project is complete. Further, PMs focus inwardly only and do not report project problems that do not affect their sub-project and provide inadequate interfaces to other sub-projects, causing interface problems for the portfolio of sub-projects. Sub-project PM's project management competence in this environment is merely necessary but not sufficient. Thus many PMs who are simply managers and who are reluctant to or lack the soft skills needed to create value, don't.
- Methodology: BHPs can not be developed using a fixed pre-development definition or standard 'water fall' systems development lifecycle (SDLC). Because BHPs constantly change, because there are numerous problems that they attempt to solve, because the solution is not known as in the case of 'Wicked Projects', because new developments eliminate the need for older solutions, BHP development methodology has to be a variation of the iterative process, customized for the environment, available organizational skills and the project. The BHP has to be developed with unparalleled effective use of Change Management, Continuous Risk Management, Communications Management and Reporting knowledge areas. Many organizations say that their processes are effective but that does not make them so. BHPs are challenging projects and only outstanding performance can mitigate the impact that they will create on the organization.
- Escalating cost: Partly because the design of a BHP constantly changes, and because its component parts are more intricately interconnected or 'tightly-coupled' the cost of a BHP will spiral to over 500% and may be to over 5,000% of its initial budget. The total development cost will only be about one third of the total cost and over half of the allocated development cost will be spent on project administration not project development, so tracking the cost of development may misguide executives at the start of cost escalation. In addition, interestingly enough, the escalation of the development cost turns out to be larger when a less realistic budget is allocated at the start. As the organization most often is incapable of coping with the size of the spiralling increase in cost, especially as at times the earned value is decreasing, and because they are not able to foresee the end cost, much additional effort and cost is spent on debating the future of the BHP.

We need to Change

We need a different/modified approach to manage very large projects. CHARLES Law of BHP development, states that in order to have a chance at successfully developing and deploying a BHP, the astute Project Leader has to:

- Cut the project into pieces and focus on delivering aligned sub-projects, not stages. Control the size of the administration, governance and management team that coordinates, advises, oversees but does no development. Change the requirements list when better ideas are uncovered but only if they add value.
- How to methodology has to be informal and customized, not standard. It has to be based on leadership, knowledge, integrity. Hold up the vision to illuminate the direction. Have the required resources at the right time or change the schedule.
- Act on defined priorities, that number no more than seven, and remember that on time, on schedule and within budget are three examples of priorities. Everything else is secondary. Decide and do. Investigating, analysing, reporting and asking for more details are steps in this process but are worthless if they become the result rather than the means to an end.
- Roles, responsibilities and calculated risk taking cannot be avoided. Replace technology that is too complex for the skills (capability) in the organization. Complex technology needs trained and educated staff. This in itself is not a problem, but not making it abundantly clear to executives is a project manager's role and unacceptable for a project leader.
- Lean. Keep the size of the project team, the total number of members in the development, stakeholder and governance teams to less than 150. Productivity of teams decreases as the size of the team grows. Learn from results during development and use the knowledge. Making a mistake is not the problem that repeating the same mistake is.
- Engage the members and build an environment and a team. Examine and validate how to and select a Project Leader not a Project Manager to take accountability for the project. BHPs need Project Leaders, with exemplary leadership skills, knowledge and experience and personal integrity to build an environment and a team. He/she has to hold up the vision to illuminate the direction. To improve the explanation why the project failed, use an experienced project manager. Elaborate on the forecast/expected and escalating costs. Expectation management is part of the project success criteria.
- Skill of the selected project team members are no longer to be taken for granted. The level of the project team members' skills does matter as does applying or not applying these skills. Select skilled development team members and apply their skills. Some people have more knowledge, education, engagement, love for and experience in some subjects than others. Assigning the required resources, at the right time is not a 'nice to have' or 'luck' but a necessity. If acknowledged, this information must be used in the schedule and resource allocation. Working with people who are below average performers or who perform above average is not a problem. Not taking their performance level into account is. Select and solve a defined number of problems. Make sure this number is not larger than the number of fingers on one hand.

Keywords: Projects, Super Sized Projects, Black Hole Projects

From Re-Covering to Recovering Projects that Went Bad Projects do not fail. People fail them

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Introduction

According to an amusing story, a Systems Analyst goes and says to the Project Manager in confidence: “I have found evidence that our project is in trouble.” A few days later the PM goes to the analyst and with a grin says: “The evidence has been removed.” Many problems that impact projects delivery are covered up and re-covered to avoid having to report them or to gain more time to deal with them.

In spite of certifications, on-going training, attempted recording of lessons learned, PMOs and executives’ involvement, many projects are made to track behind their original schedules, cost more than they were originally budgeted, deliver less functionality and deliver less value to the organization than estimated in the Business Case or fail. According to many estimates, one out of two projects has significant variances from their original estimates and will achieve foreseeably dismal results. In response we say these projects went bad or are failing but in fact, these are projects we mismanaged or failed. Whether we implied we can deliver to unrealistic expectations; or started development with imprecise, incomplete requirements; or failed to plan (one out of two projects is significantly off its original plan); or did not assign and hold someone accountable for delivering benefits; or accepted to undertake a project that is too ambitious for the capacity of the organization to deliver, we created the results and hence we failed the project.

Once large projects start to fail, our project management methodologies which are focused on managing healthy projects, are inadequate to recover them which usually is, but does not have to be more difficult than managing a project correctly from the start. Recovering a project does not need revolutionary new ideas rather it applies known project management concepts that are unused at times and by some organizations and is a test of organizational maturity.

Failures

The president of the Software Human Resources Council notes that “*four out of five IT projects don’t achieve their goals...*”. The Standish Group Reports: “*51% [of the projects] do not meet original cost projections*”; Forrester says 70% of the projects fail; CA says 50% of the projects fail and other similar studies concur that many projects experience significant variances from their original estimates. Too often the first response after hearing that a project surpassed an acceptable variance and is now not tracking to plan, is to deny or misrepresent the status quo and

institute more status reporting. When this is no longer possible, plans are changed to speed up and do more of what was done to get the project to the state it is in. This of course most often results in the project achieving an even worst state (greater negative variance) than before the ill-conceived remedial action was begun. This approach is the exemplification of the proverbial: “do the same but expect a different result”. It ignores Peter Senge’s well known quote paraphrased as: “*Every project management methodology is designed to attain the results it is getting*”. Bad projects do not just happen, they are created. The elements that fail them and their sequence are orchestrated to create them.

The situation is a big deal as a significant number and percentage of projects fail. “IT project failures cost annually some \$1.2 trillion to the US so probably some \$120 Billion to Canada. Failed projects have a significant impact on companies and countries. Cancelled projects can cost over \$200 million to corporations and impacting everyone indirectly.

So what is a failing project? We will say that a project to solve a defined problem having started with appropriate and realistic resources and schedule for the functionality it was to deliver, that had all changes made through a formal Change Management process, is considered to have ‘gone bad’, ‘failed’ or be a ‘project in trouble’, if it has been deviated and is now unacceptably over budget or over schedule, is expected to deliver inadequate functionality, or is now expected to deliver significantly less value than originally expected in the business case. According to this projects are not failing because they are over budget or over schedule because projects are not developed to be on budget or on schedule. We fail a project when it does not help to create value.

A promise

The worst part of this situation is that the situation is not improving, in part because using the same development methodology and development paradigm that got a project to fail will not get the project to return to health. To make headway in recovering a failing project we must accept that we may need a new methodology. Not accepting it, exemplifies that what we do not know, can hurt us and is an affront to the profession, because many projects that have gone bad can be saved. The 0+2 Steps Approach to Project Recovery© is one project management methodology for failing projects. It is not only to recover them but also to develop them and attain a greater success than what would have been possible were they not to have ‘gone bad’. “The deck is stacked in favour of the tried and proven way of doing things and against the taking of risks and striking out in new directions.” John D, Rockefeller III. So PMs usually prefer to re-cover their failings and continue managing t!

he project the ‘old way’. The need to change is only acted on when a certain level of discomfort or pain has been reached. If the organizational Resistance to Change (R) is greater than the product of dissatisfaction (D) with the status quo, acceptance and support of the vision (V) for the future and the steps taken (S) to deploy changes, improvements will not happen.

This recovering methodology incorporates the effective elements of traditional development methodology with radical changes to project governance and the development environment and enable the project to attain new results. It relies on an acknowledgement that the project is in trouble, and an acceptance that in order for the recovery effort to achieve significantly better results, changes will be needed. So the project management approach starts the project where the old one left of and develops it as a new project seeing that it has a new start date, possibly a new end date and may have a new budget and schedule.

A recovery methodology

Recovering a project does not have to mean working harder, working faster, using more people, or restricting the scope. It is not re-starting a failing project but starting a new project in a new way, using a new governance model and development environment with a Recovery Project Leader (RPL) who replaces the Project Manager.

STEP 0 – Acknowledge the Problem, of this recovery methodology demands that before a project recovery can start the sine qua non requirement (hence the 0 as this ‘step’ does not advance the situation), is an explicit admission and acceptance from the executives, stakeholder and project authority that the project's results have reached unacceptable negative deviations and is designed to fail. As most people have a natural aversion to disclosing or acknowledging failure this will justify and support the need for change in the way the project is to be developed, and that an RPL rather than a PM is needed,. If most of the executives, stakeholder and project authority do not explicitly agree that the project is in trouble, they are covering or concealing the failure and will not support the needed changes. In this case the culture and momentum of the organization will quash any attempt to deploy the required changes and this methodology will fail to produce the intended results. The best way, if not the only way to start making progress towards a better end (goal) is to stop focusing on ‘who did what wrong’ and focus on ‘what needs to be changed’. If most of the executives, stakeholder and project authority support the methodology then a new paradigm can establish a new beginning and the RPL can focus on solving problems rather than answering pointing fingers.

STEP 1 – Take control, define the Vision the next, and necessarily the next not the first step, states the perceived problem and the business value of the deliverables to the customer. If these are wrong, change them. If you are to fail at something, fail fast. Spending a great deal of time and money and delivering no business value may not be the best way to establish credibility. Then:

- Stop the bleeding. Do not allow things to go worst than they already are.
- Review the lexicon because moving a task start date from November to December may be termed “advancing the task’s date” but in fact is simply starting later than planned and “sloppy”, off-the-cuff, “incomplete” and “unorganized” may be termed “High Level” but most often it is simply sloppy”, off-the-cuff, “incomplete” and “unorganized.
- Establish a schedule for the people.
- Define, validate and document the requirements the project will work to satisfy, the governance for the Change Management process and the criteria that will define Success.

It is only after this ‘shot across the bow’ that the RPL is ready and needs to analyze the past and crystallize the status quo including the viable alternatives, the organizational environment, the size of the project and the team. With this information at hand, the RPL needs to build a bridge to the future. Define how the goal will be reached in a plan. Poor planning at the start of a project is a leading cause for project failure according to a 2012 PriceWaterhouseCoopers survey. Further, as the new approach will be counter-culture, only some 20% of the stakeholders can be expected to support the new project’s approach. So being seen doing a better job than the PM is not going to be good enough, and will impede doing an excellent job. First however the RPL has to inspire the team with his/her insight.

STEP 2 – Lead the Recovery Team of the methodology states that the last step is in a ‘new world’. 10% of the people will be against you and only 20% will support you. This is the time to terminate the project, if circumstances justify, or to transition people to the new project leadership culture. PMBoK still works but has to be adapted to the environment, existing governance, the team’s maturity and the project. Delegate, empower, communicate, coach, lead, defend the team, follow the plan and do not allow deviations from the culture that was approved. Suppose that in an organization there are three projects underway and all three run into trouble. Suppose that one of the three projects’ PM brings in a ‘super-duper’ think tank analyst group who reviews all what went on and provides a detailed analysis and recommendations. How many projects are now in trouble? The RPL knows the answer is three and that the only thing left now is to do.

Keywords: Projects, Super sized projects, Methodology, Failure, Recover, Project leader.

TONE approach to transforming the Middle Management

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The sophisticated enhancements in the computer supported collaboration work tools (CSCW) are constantly evolving for both the desktop or mobile environments. These software tools have made it easy to tap into knowledge capital dispersed throughout the world leading to the concept of virtual team. Even the agile software development setting that emphasizes on collocation to foster osmotic communication has seen an increasing number of virtual distributed workforce that are enabled by these software tools for idea sharing, continuous build and integration, and workflow management.

This workforce is different from the regular telecommuting workforce where geographical barriers, expenses associated with international travel, and time constraints make it difficult for members to primarily depend on communication based on synchronous and asynchronous tools. This environment shifts the project manager's focus from traditional management to leadership by managing change, addressing risk, enhancing unambiguous communication, and resolving conflict with their team. As project success in virtual team also depend on establishing trust, rising above the communication barriers, and engaging the team members towards objectives, the project managers become change agents emphasizing skills beyond cognitive requirements. The management and the team look for much more than just task management in the project managers that their versatility to wear multiple hats and relate to the emotional intelligence dimensions becomes a critical factor.

Extending from the observations of the emotional intelligence and the specific leadership traits sought in the middle management involving, project, product, account, and functional managers in both the agile and non-agile settings, a model was conceived emphasizing critical skills in four areas namely the technology, organization, negotiation, and empowerment. These roles are further explained below.

The technical role includes the leader's technical awareness in mitigating technical project or product risks bridging technology with business objectives. Whether with the client or with the team, their knowledge of the product and technology underpinning the product, and their ability to effectively use of online collaboration tools was indispensable asset to eliminate unnecessary handoffs. This role is not to be mixed with the information technology areas, such as an understanding of programming, network infrastructure, and database management but specifically on the domain knowledge of the business and foundational project exposure.

For instance, although Project Management Institute generally notes that the project management skills are transferable to any type of project, a construction project manager may find it challenging to be productive soon in managing an IT project. Further, reviewing several project

manager descriptions in the job boards where employers seek industry specific domain exposure, the technical role cannot be ignored.

The organizer role centers on the project manager's ability to provide unambiguous direction in task assignment and role assignment in the product or project environment. The organizer role involves proper proactive planning, identification of business need and business impact, and setting the expectation with all stakeholders for the project outcomes, and constantly analyzing the project progress. The organizer role requires interpersonal skills to be able to actively listen to the stakeholder, understand the business requirements, and communicate unambiguously.

The negotiator role emphasizes communication skills, conflict resolution skills, and delegation abilities. Specifically, the negotiator role extends the organizer role so that the project manager can negotiate for scope to meet the schedule and persuade for phased release of features lining up with agile project framework. Understanding the differences among cultures in the major dimensions of individualism or collectivism, large or small power distance, strong or weak uncertainty avoidance, and masculinity or femininity leads to several changes in written and verbal communication. A project manager must be strongly attuned to these variations and develop practices to accommodate them in conducting meetings, seeking responses from team members to make participative decisions, resolving conflicts and delegating tasks to members of a virtual team.

The energizer role focuses on empowerment and authentic involvement. This dimension refers to the project manager's team building skills to motivate members as project or organizational changes influence the project adversely and show empathy to member's concerns to build the trust, loyalty, and commitment to the project's objectives. The project manager should relate to the culture of the team besides the binding organizations as the national and organizational culture differ in motivational strategies and perception of trust.

To authenticate this model, a qualitative research was conducted over two years. This paper presents these findings with insights gained from this research to augment practical project management.

Keywords: TONE; Middle Management; computer supported collaboration work tools (CSCW)

Internal and external pressures on system embeddedness: some evidences from sustainable and responsible tourism projects

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Tourism products as they are complex phenomena (Rispoli, Tamma, 1995) designed to market a global product that tourists will evaluate as a whole looking back at his own full travel experience (Pine, Gilmore, 1998). Looking at the using a system theory perspective (Espejo, Rejes, 2011) they can be considered as systems (the tourism destination - Della Corte, 2000; 2009) made of more simpler ones (the tourism packages as bundles of services - Casarin, 1996; Tamma, 2002) each composed by still more simple basic functional systems (each single tourism service). These basic services do cooperate as a way to in a global hyper-competitive market (D’Aveni, 1994; Sciarelli, 2007) reaching the needed critical mass without losing flexibility (Sciarelli, 1996). Gee et defined tourism as a network industry - an industry whose products’ global value strongly depends on the interaction of the single elementary services it is made of. This drive towards cooperation may be considered even stronger in the sustainable and responsible tourism products (Bencardino, 2004). The tourism players marketing these products do acknowledge that local area resources are limited (Pearce, 1988; Hjalager, 1997; Sheldon, Abenoja, 2001; Simonicca, 2004; Butler, 2010) so several players cooperate to creating viable products without endangering any of the sustainability three dimensions (Elkington, 1992) – the economical, the social and the environmental one (Hunter, 2002; Bimonte, 2003; Ruhanen et al., 2010). Some examples are tourism services to increase the awareness on ethical and environmental issues, to promote and fund specific social programs, or to promote critical consumerism.

Looking at the customer side Sustainable and Responsible Tourism products are created to leverage the increased awareness some tourists have of the effects their travels have on the local area (Brunetti et al., 2012).

In this research we have studied these tourism packages in order to comprehend what are the main factors keeping actors in the network, looking at both how they are perceived by their partners and how they are satisfied from their active participation in the project itself. This analysis has been carried on looking at 53 actors involved in sustainable and responsible projects in various Italian Regions.

We hold that understanding what influence the network stability is a critical piece of knowledge as the more a network is stable, or the more each given players is embedded into the network, the more the general level of trust should increase and, as a consequence, the network activities should be more effective as the various actors' interest should be aligned (Burt, Knez, 1995), at the same time the repeated interactions between the players will help in making opportunistic behavior a less and less viable strategy (Kreps, 1990; Raub, Weesie, 1990) increasing the global value of the network as a whole.

Research hypotheses and results

A given actor will be successful to stay in the same network when two main conditions will be met: on one side he will have to consider the network as a way to reach for his own goals, on the other side the other players should be perceive them as a valuable partners.

There could be several factors driving a given actor to insist on being a part of the system. First of all his global satisfaction on the network effectiveness (how much he is satisfied with the SRT's projects results) should be a strong element. Moreover seeing that we are looking into SRTs we have decided to control for the market success as a separate indicator.

According to literature (Das, Teng, 2000) in order to be effective network players should be able to coordinate their actions. Consequently, at least some network players should be endowed with relational and coordination capabilities (Kale, Dyer, Singh, 2002; Gulati, 2007). At the same time coordination can be obtained both with a leading player or with more diffused competences so, after having rebuilt the socio-graph of each SRT's project we have studied, we have looked at the each actor's perception of its partners coordination capabilities and at the related centralization (Watts, 1999, 2004; Burt, 2001).

Obviously as the SRTs are designed to increase the awareness on a given social issue, when they are not used to raise funds to solve it, we have to control for the actor being the promoter, or the main designer, of the SRT itself. This is a needed consideration as the starting players in each project should be the more motivated one in going on.

According to these elements we have defined our first hypothesis as:

Hyp.1 – The stability of the network is influenced by each players' satisfaction in the network effectiveness and how much his goals are aligned with the project ones.

This hypothesis has been tested using a logistic regression model to evaluate the influence the different factors have on structural embeddedness (measured by the number of successes on 6 yes/no questions). All the other variables have been measured on a Likert scale with 10 values. The only exception is the "promoter" variable that is a dummy variable.

The result from testing this hypothesis are reported in the following table 1.

Table 1 – Test of Hyp.1

Test for Hyp.1		Model 1	Model 2
<i>Structural Embeddedness</i>	Intercept	-1.52717	-1.03152
	Std. Error	1.03376	0.5369
	<i>t - value</i>	-1.477	-1.921
	Pr(> t)	0.1396	0.0547
Global Satisfaction	Estimate	0.07752	--
	Std. Error	0.09839	--
	<i>t - value</i>	0.788	--
	Pr(> t)	0.4308	--
Satisfaction for market results	Estimate	0.15043	0.17739
	Std. Error	0.07484	0.06591
	<i>t - value</i>	2.01	2.691
	Pr(> t)	0.0444 *	0.00712 **
Average Coordination Capability	Estimate	0.27708	0.2324
	Std. Error	0.43797	0.13229
	<i>t - value</i>	0.633	1.757
	Pr(> t)	0.527	0.07896 .
Coordination Capability Centralization	Estimate	0.03532	--
	Std. Error	0.27585	--
	<i>t - value</i>	0.128	--
	Pr(> t)	0.8981	--
Promoter	Estimate	0.70769	0.69642
	Std. Error	0.3474	0.34185
	<i>t - value</i>	2.037	2.037
	Pr(> t)	0.0416 *	0.04163 *
Null deviance		45.013 (47)	45.013 (47)
Residual Deviance		30.996 (42)	31.677 (42)
AIC		143.08	139.76

Source: our data panel

Looking at the external pressures on structural embeddedness we have focused on the two main reasons for players asking other actors to keep being part of the system. A given actors can be considered a valuable resource when he will bring valuable resources in the network (an actor is valuable as its specific basic services are needed by other players and cannot easily be substituted (Barney, 1997).

On the other side a given actor will be considered valuable when the other players he is linked to will see in him a leader able to coordinate the system as a whole in order to be more effective (Das, Teng, 2000; Kale, Dyer, Singh, 2002). Finally a given actor can be useful to the system as he is in an advantageous position linking - he is positioned in a structural hole (Burt, 2001).

In order to test how these factors do interact we have defined our second hypothesis as follows:

Hyp.2 – The embeddedness in SRT projects depends on the network perception of the resources of a given players and by its ability to reach an advantageous position.

The hypothesis has been tested using a logistic regression model to look at the relationship between the average evaluation each single actor has got, from the partners he interacts frequently with, on its coordination capabilities and on its importance for the network's success. As a control variable we have used the betweenness centrality (Wasserman, Faust, 1994).

We have got these global evaluation asking each player in the project to evaluate the other players he is tied to for their coordination capability (Likert scale - 5 values) and on the importance of these player for the project (Likert scale - 5 values).

The test of this hypothesis is reported in the following table 2.

Table 2 – Test of the hyp.2

Test for Hyp.2		Model 1	Model 2
Structural Embeddedness	Intercept	0.43186	-1.03152
	Std. Error	0.16410	0.5369
	<i>t</i> - value	2.632	-1.921
	Pr(> t)	0.0085	0.0547
Coordination Capabilities	Estimate	0.53802	0.49070
	Std. Error	0.39357	0.17050
	<i>t</i> - value	1.367	2.878
	Pr(> t)	0.1716	0.0040 **
Importance	Estimate	-0.01826	--
	Std. Error	0.39991	--
	<i>t</i> - value	-0.046	--
	Pr(> t)	0.9636	--
Betweenness	Estimate	-0.13294	--
	Std. Error	0.77618	--
	<i>t</i> - value	-0.171	--
	Pr(> t)	0.8640	--
Null deviance		45.816 (50)	45.013 (50)
Residual Deviance		36.894 (47)	36.928 (49)
AIC		151.96	147.99

Source: our data panel

Main findings

The test for the first hypothesis confirms that structural embeddedness is far stronger when the partner is the promoter of the SRTs (this confirms the main idea that SRTs are targeted to solve specific social issues) but it highlights even a good link with these projects market performance. On the other side is interesting to note that those players who perceive a better network organization are more inclined to keep being part of the system.

From the second hypothesis we have found only a positive effect, albeit a quite strong one, from the reduced model (using backward selection) limiting the relationship to how a given player's coordination capabilities are perceived by its partners. It is interesting to note that our data do not support nor the main idea that other players look for more relevant resources nor Burt's Structural Holes model.

Keywords: *System Thinking, Managerial Capabilities, Embeddedness, Sustainable and Responsible Tourism.*

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The Big Machine. Production Networks in action

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In this theoretical study we will examine “The Big Machine”; that is, the “autopoietic Production Network”, which is specialized to produce the flows of goods and services on which the continuity of the “subtle film of material called life” depends.

Research question

This study aims to uncover the raise and development of an autopoietic Production Network. In order to do that we propose to radically modify our ideas about the logic of “*production as a process*” in order to adopt the logic of “*production as a network*”.

Findings

Our analysis demonstrates that any kind of production is a continuous flow, more or less regular and constant over time, which can be obtained not from individual production organizations but from a widespread Production Network of interconnected production units located in different places and times, all of which, consciously or not, are necessarily connected, interacting and cooperating in a coordinated way in order to combine and arrange, step by step, the inputs, materials, components, manpower, machines and equipment and knowledge in order to obtain flows of products – final goods, in particular – and to sell these where there is a demand for them. Following the holonic view, observed from a sufficient distance, The Big Machine appears as an Integrated Production System that operates according to the logic of a Shimizu’s Autonomic Cognitive Computer, carrying out progressive syntheses of labour and value through its two sides connections: on the one side, to a demand reservoir for final goods, in order to satisfy needs and aspirations, and, on the other side, to a labour reservoir.

The paper proposes a model of the “Big Machine” and theorizes its functioning as an ACC, in particular as an Holonic Manufacturing System and a Bionic Manufacturing System, capable of:

- a. locally perceiving the needs and aspirations in the demand reservoirs;
- b. determining the labour availability in the labour reservoirs;

- c. carrying out successive syntheses through parallel information processing that extends vertically and horizontally through the entire production organization network;
- d. finding the best dynamic pairing between the demand for goods as information input, on the one hand, and consumer satisfaction and labour employment as an operational output, on the other;
- e. producing a continual improvement in production performances; that is, an increase in labour productivity and improved quality of the goods produced.

So now we see the function of the Big Machine: just like a OHS or an HMS the Big Machine spreads the improvements in productivity and quality, which occur at the local level, throughout the entire structure of the holarchy of production units or along the entire network chain, both in a top-down direction (the improvements produce other improvements down the line) or a bottom-up direction (the improvements require other improvements up the line).

In this sense the Big Machine must no longer be viewed simply as a global producer composed of interconnected organizations that try to maximize individual efficiency, but must instead be thought of as a global system with the capacity to perceive, on the one hand, the requests for needs and aspirations to satisfy, and on the other the available labor supply.

Paraphrasing Koestler, it does indeed seem that there is “A Ghost in the Big Machine”.

There is no ghost that moves the Big Machine toward ever more advanced states; the production network is an autopoietic viable system which necessarily has to improve its performance in order to remain vital.

Keywords: *Production network, autopoietic system, rules of selfness in production networks, laws of production networks, holonic networks, productivity, quality*

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MOEST

Model of the Organization as an Efficient System of Transformation

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If observed from the outside, long-lasting organizations, in their relations with their environment, are dynamic systems capable of self-regulation (Mella, Demartini, 2011) that can be viewed as cognitive systems which display a cognitive behavior aimed at survival and as living systems that reproduce themselves over time, along the lines of Maturana and Varela's analysis: "If living systems are machines, that they are physical autopoietic machines is trivially obvious [...] However we deem the converse is also true: a physical system, if autopoietic, is living" (Maturana, Varela, 1980; Varela, 1981).

The idea that the organization is a living system has been excellently described by Salvatore Vicari in a convincing book entitled *The Organization as a Living System* (Vicari, 1991) and by Arie De Geus in his work *The Living Company: Habits for Survival in a Turbulent Business* (2002). De Geus clearly shows the importance of cognition and learning for an organization's teleonomy, especially large corporations, whose teleonomic activity can be interpreted only by assuming that the organization (company) behaves as a living being and not as a machine (Senge 1997).

Objective of the paper

The present study seeks to present a complete model of the organization, the Model of the Organization as an Efficient System of Transformation, MOEST, which describes the cognitive behavior of organizations viewed as vital systems.

The MOEST is complementary to Stafford Beers well-known Viable System Model (Beer, 1979, 1981), for which a considerable literature exists (Espejo, Reyes, 2011). Adopting a cybernetic and cognitive perspective, Beer proposed considering organizations as viable systems which, through their structure, are capable of learning and cognition and of achieving an enduring structural coupling with the environment, continuing in this way to exist for a long time through continually adapting to the environment. To maintain the conditions for viability, organizations internally determine the policies and activate the levers and strategies needed to eliminate the negative effects from environmental disturbances during the course of their existence, disturbances which cannot be foreseen at the moment the system is designed and created. In his

book *Brain of the Firm*, Beer provides a clear definition of viability: “The object is to construct a model of the organization of any viable system. The firm is something organic, which intends to survive – and that is why I call it a viable system (ibidem)”.

From this point of view, and adopting Varela’s analysis, the VSM represents the typical model of a system open to the environment through its own operations and communication activities, though closed regarding the processes of adaptation to environmental dynamics, and in homeostatic equilibrium over time (Bednarz, 1988).

In short, the Viable System Model explicitly recognizes that every organization can be fully considered, in the joint action of its five sub-systems, as a unitary, multi-lever and multi-objective Control System (detailed in the paper).

According to Beer, the viable system represents in all respects a holonic entity, since it must be interpreted as a “cognitive holarchy” composed of sub-holons which are themselves viable systems (Koestler, 1967; Mella, 2009), given that every organization, while a complete unit, is in turn composed of smaller vital entities (operational units, departments, functions, divisions, etc.), with different levels of complexity, and at the same time part of a larger vital unit, as Beer clearly recognizes in the following theorem: “Recursive System Theorem. In a recursive organizational structure, any viable system contains, and is contained in, a viable system. There is an alternative version of the Theorem as stated in *Brain of the Firm*, which expressed the same point from the opposite angle: ‘if a viable system contains a viable system, then the organizational structure must be recursive’ (Beer, 1979).

The MOEST guidelines

While the VSM represents organizations from the point of view of their structural synthesis, the MOEST differs from Beer’s model, as it sees them from a functional viewpoint. In effect Beer’s VSM refers to all organizations, independently of the nature of the processes they carry out. But what do organizations (production organizations and companies, in particular) actually do to remain vital and effectively adapt to environmental changes?

To clarify this operative aspect, Piero Mella has introduced a particular framework in which he has identified five functions which are strictly necessary for any productive organization to survive for a long period of time. The MOEST states that organizations must be conceived of as systems of transformation which, in order to remain in existence over time, must necessarily carry out five interconnected vital transformations, each of which, operating with maximum efficiency, carries out a vital function, similar to what is proposed in the VSM (see the figure at the bottom of this abstract).

The MOEST shows, above all, how each organization must necessarily carry out three efficient “technical” transformations, so defined because they concern the productive, economic and financial functions instrumental in allowing the organization to maintain its functionality in order to satisfy the needs of its stakeholders.

We will begin with the last three transformations, which I have defined as “technical” to distinguish them from the first two, which I define as “cognitive”.

1 - Physical productive transformation [TR1-P]. Inputs, having a given utility, are transformed into products capable of producing a greater utility. The efficiency of the productive transformation is measured by productivity, understood as the capacity of the transformation to generate maximum productive output with the minimum input (consumption) of factors, and by quality, understood as the maximization of the use function of products. The efficiency of the

productive transformation is measured by two indicators: productivity, understood as the capacity of the transformation to generate the maximum production output with the minimum inputs, and quality, understood as the maximization of the use function of the products.

2 - Economic or market transformation [TR2-E]. The system tries to increase the value of the productive factors, or unit cost, by employing these factors to obtain products that can be traded at remunerative prices which are greater than unit cost. Economic efficiency, understood as the capacity to cover the cost flows with revenue flows, is measured by the difference (or ratio) between revenues and the cost of production in a given period. We immediately observe that economic efficiency depends on productivity, which reflects productive efficiency, and on the ratio between the average selling price and the average unit cost of production, which represents market efficiency.

3 - Financial transformation [TR3-F]. To carry out the economic transformation the organization must invest the capital necessary to build the productive structure. This capital – at least during the initial phase of the organization’s existence, when it cannot be obtained by self-financing – must be obtained from investors who, with the expectation of a significant return, accept the risk from the business activity and provide their capital as a relative risk (financing, loans and various forms of debt) or an absolute one (underwritings, equity, shares). From this it follows that the system must transform the capital raised – relative or absolute risk capital – into remuneration in the form of interest (for loan capital) and profit (for capital contributions). The efficiency of the financial transformation is determined by profitability, which is measured as the ratio between the average return on capital and the average amount of capital, with reference to a given period. A necessary condition for the firm to carry out the first three “technical” transformations is the undertaking of two “cognitive” transformations: the entrepreneurial (n. 5) and the managerial (n. 4) transformations, whose function is to control the “technical” transformations (we will first consider the entrepreneurial transformation).

4 - Managerial transformation [TR4-M]. This is typically a transformation of internal and external information into decisions, planning and control procedures – concerning production, market and financial transformations – which are aimed at achieving, with the maximum efficiency, the policies and strategies decided on by the entrepreneurial transformation. TR4-M decides on the operational regulations, which oblige the controlled units (organs, units and individuals) to undertake the necessary actions to achieve the objectives.

5 - Entrepreneurial transformation [TR5-E]. This is typically a transformation of external and internal information into strategic decisions – creative, explorative or innovation-generating, not only adaptive or reactive decisions – regarding the “technical portfolio” to manage, the technology, markets, prices, and the financial structure. The entrepreneurial transformation, especially in corporations, is subordinate to a system of corporate governance, which is the expression of the stakeholders that choose the decision-makers and control their activities.

As shown in the model, the policies and strategies elaborated by the TR5-I represent the foundation of the Control, normally defined as strategic, which acts at the business and general function level. The TR4-M translates the vital survival objectives, identified by the TR5-I, into

operational objectives for whose achievement an operational managerial Control System is developed based on planning and budgeting.

From MOEST to performance management

The MOEST differs from the VSM in two respects. Above all, it explicitly sets out three different control levels: institutional, strategic and operational, each of which pursues objectives of different scope. Secondly, it highlights the possibility of constructing a precise system of performance indicators, represented by the efficiency indicators: productivity, quality, economic efficiency and profitability (in the model these are only mentioned), all of which can be linked in terms of the production of value, from the Value Based Management perspective (Arnold, Davies, 2000; Morin, Jarrel, 2001; Mella, Pellicelli, 2008).

The autopoiesis of the capitalistic enterprise is based on its capacity to regenerate its financial and economic circuits, which are made up of the value flows represented by the bold arrows in TR2-E and TR3-F in the MOEST. The financial circuit is renewed if the capitalist firm succeeds in acquiring and preserving its invested capital (I) – which is necessary for structural investments – by means of an adequate financial leverage (Debt/Equity ratio, or *der*); but this requires that the suppliers of both Debt and Equity financial capital receive a fair remuneration, defined as one at least equal to their opportunity cost.

The network of Control Systems activated by the Managerial Transformation at any level of the organization specifically to carry out the technical, economic and financial transformations constitutes, as a whole, the management Control System. This includes a system for the production of information and organizational rules and procedures needed to activate, maintain and improve organizational behavior (Demartini, 2014). “Management control systems are the formal, information-based routines and procedures managers use to maintain or alter patterns in organizational activities [...] These information-based systems become control systems when they are used to maintain or alter patterns in organizational activities” (Simons, 1995); “*Management control systems provide information that is intended to be used by managers in performing their jobs to assist organizations in developing and maintaining viable patterns of behavior*” (Otley 1999; Merchan, Otley, 2007).

Keywords: Model of the Organization as an Efficient System of Transformation (MOEST); Control Systems; Managerial Transformation.

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[BUSINESS SYSTEMS] DESIGN

The business of creativity: Strategic orientations and business models in design firms

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Summary

In this paper we present and discuss the first results of a research project on creative firms' business models and their interactions with strategic orientations. More precisely, it explores the existent business models in design companies, their performance and the extent to which they are influenced by the assumed dilemma between art for art's sake and art for business's sake (Fillis, 2010), or in the marketing context - between creative-product and business-market orientations.

Research gap and existing knowledge

Creative industries are recognized as important sectors for knowledge-based economic development particularly due to their potential of producing high value added by the symbolic, artistic and expressive values associated with their output. Nevertheless, taking into account the considerable rhetoric both in academia and policy making, the comparatively scarce attention attributed to the subject in management and business research is still quite surprising (Hartley, 2005; Chaston, Sadler-Smith, 2012). More and more upcoming research can be found on the business venturing and management of creative enterprises but they rarely offer a holistic approach to the business components and their effects on various performance dimensions. The “business model” concept can prove very useful for such a purpose, since it has been increasingly used in order to explore and describe the value creation, delivery and capture mechanisms within a business (Tece, 2010).

Despite the politicized rhetoric advocating creative industries development, research and theory provide grounds to suggest that creative enterprises face several specific problems impeding their growth when compared to other profit-seeking enterprises. Firstly, the polarized industry structure with dominating small and micro enterprises on the one hand and a few very large firms on the other suggests that there are factors, which hold back firms from growing, unless a certain superstar effect is achieved. Secondly, the over-supply, the uncertainty of demand and success, and the reliance on gatekeepers and intermediaries entail a need for establishing reputation possibly at the expense of financial gain (Jacobs, 2013), which often leads these firms to experiencing problems with financial viability. Moreover, one-sided curricula contribute to the lack of multi-skilled employees in the labour pool (Carrey, Naudin, 2006). Finally, for a long time the dominant rules of the cultural field, in which these firms are believed to be embedded, preordained that commercial success should not be a goal in itself (Abbing, 2001; Bourdieu;

1993) and that creative producers might not be primarily motivated by financial gains (Bilton, Leary, 2002). Therefore, while many of these creatives act as entrepreneurs and risk takers, they do not see themselves as such. In other words, creative firms face the necessity of finding a right balance between their creative and business orientations. We shall call it here the double success criterion (Jacobs, 2012). On the one hand, a limited focus on creative recognition, reputation and cultural value of the product might affect the cultural success and also the market success of the product. On the other hand, a lack of a business cognition (or orientation) might affect the way in which firms are able to develop appropriate business models to exploit their opportunities (Chaston, Sadler-Smith, 2012).

In addition to the double success criterion linked to creative production, management literature has a long lasting tradition of researching the performance effects of other strategic orientations, such as market, innovation, entrepreneurial and competitor. These orientations can be broadly defined as “principles that direct and influence the activities of a firm and generate the behaviours intended to ensure its viability and performance” (Hakala, 2011). As such these principles or directions “often reflect the beliefs and mental models of the senior executives” of organizations (Grinstein, 2008). Together with considerations about the importance of creativity, reputation and profit, also management attitudes towards issues like the responsiveness to customer experiences or competitor activity, the willingness to take entrepreneurial risks, the willingness to innovate and others can be regarded as important principles guiding the management in creative industries. Consequently, the configuration of different strategic orientations’ dimensions is manifested in the business model these firms develop, which in turn translates into their performance.

Methods and data

We present the conclusions of several case studies of Dutch design companies carried out using triangulation of interview, survey and other content data (e.g. websites, annual reports). We inquire into their business models and performance and investigate the extent to which these are influenced by the double-success criterion. In addition we look at the role other strategic orientations play in business model formation.

The conclusions about business models are based on semi-structured interview data. The interview schedule was developed based on Business Model Canvas of Osterwalder and Pigneur (2010). The design companies interviewed are all based in The Netherlands and represent different sub-branches of design sector. In addition to the interviews, the managers of the companies were asked to fill out a survey that inquired into the importance of different strategic orientations in their activity, and to provide data on their performance. This content was further complemented with information available on the company websites.

The cases were selected using non-probability sampling methods. The interviewees were first selected via convenience sampling using the partners of the project to obtain contacts from companies that would be interesting as the case studies. Further on convenience sample was extended with a purposive sample of enterprises that match characteristics that were missing in the sample of cases. All the data was analyzed in NVivo software by means of cross-case content analysis.

Results and conclusions

The results pertain to the first stage of the research project aimed at further developing combined method holistic approach to researching the strategic orientations-business model-performance

nexus. The preliminary results of this study show among others that there are indeed different configurations of strategic orientations influencing management decisions in design companies. The initial data offer grounds to suggest that the entirely romantic vision of art for art's sake can be only applied to a very limited number of design companies, and that creative orientation is a multi-dimensional concept, that includes aspects like creative independence, reputation, concerns for quality complemented by life-style consideration.

Moreover, the importance of each of these aspects has certain managerial implications that manifest in the business models chosen by firms and the problems that were reported. For instance, more often than not, willingness to maintain creative integrity results in lack of growth ambitions. Also despite the technological advances, the human-capital-intensive nature of design sector and the need to create a certain in-house know-how makes it extremely difficult to introduce new revenue models that would differ from the industry reference models.

Keywords: *business; creativity; strategic orientations; business model; design firms*

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Using a systemic approach to improve the quality of life for women in small-scale agriculture: Empirical evidence from Southeast Asia and Sub-Saharan Africa

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This study was conducted in rural areas of Haiphong – Vietnam and Accra – Ghana during the first phase of a Bill & Melinda Gates Foundation’s Grand Challenges Explorations grant (Bosch and Nguyen 2014). The main aim of the study was to identify the systemic intervention strategies for improving the quality of life for women small farmers. The first five steps of the systems-based Evolutionary Learning Laboratory (ELLab) (Bosch, Nguyen et al., 2013) were applied in both case studies to search for real issues and local needs to develop systemic intervention master plans. The studies showed interesting results. The issues identified in the two countries were multidimensional and highly interrelated with one another. The major determinants for quality of life of the women in Vietnam include income, work pressure and health, whereas those comprise workload and dignity of the women in Ghana. Various mental models of relevant stakeholders were gathered as inputs for the participatory system analyses to define systemic interventions and overall management plans in both countries. Due to the differences in socioeconomic, political, environmental and cultural characteristics between Vietnam and Ghana, the constraints and therefore solutions were significantly different between two case studies. However, there are

some similarities in terms of their needs for forming formal cooperatives, capacity building, improved production efficiency via access to loan and inputs and enhanced market access. This paper also discusses the value and validity of the ELLab as a powerful management framework in dealing with complex problems in cross-cultural and environmental settings. The outcomes from each case study were discussed and compared to serve as inputs for the global experience sharing network, Think2Impact™, for improved levels of learning and performance worldwide.

Keywords: *Gender inequity, Production efficiency, Quality of life, Evolutionary learning laboratory, Systems thinking, Participation, Stakeholders, Systemic approach.*

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Learning Systems Design for I/T Alignment

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Early notions of I/T alignment were presented in an age where strategic planning had gained credibility as a key business activity, and I/T was a technical area of concern involving significant investment. However, the contemporary context has changed, whereby: (i) it has been largely accepted that there are certain dangers in over-complex (strategic) models which present an over-simplification of the everyday realities of organisational contexts; (ii) I/T is pervasive and accessible more than ever, and has become embedded into everyday organisational activities; and (iii) the speed of organisational change is unprecedented (fuelled by I/T itself). These each have implications for the theories of I/T alignment. This paper presents case studies taken from action research studies, to explore the contemporary context of I/T alignment. Each of these provide a rationale for and insight into the potential design of learning systems for I/T alignment. This paper proposes that: (i) in the contemporary period, there is a requirement to consider the role of learning systems in achieving I/T alignment; (ii) that there are a set of principles for the design of learning systems for achieving I/T alignment; and that, (iii) it is possible to outline a design of a learning system to achieve I/T alignment, which can be used to evaluate current practices with regard to achieving I/T alignment.

The paper is structured as follows. In the first section, the notion of I/T alignment is revisited and critiqued. In the original works on I/T alignment, there are some key notions of both strategy and of I/T, both of which have shifted somewhat in the intervening years. These shifts are not just perceptual or conceptual shifts. They are shifts which significantly affect the roles of CIO's and other senior managers of key operations. They are shifts which affect large and small organisations alike. Thus, in the second section we outline two action research studies, which provide insight into the substantive and practical shifts in complex and dynamic contemporary contexts in which I/T both fuels the speed of change, and simultaneously acts as a solution to the resultant challenges, i.e., I/T is often itself a solution to a given problem in a given organisation in a given context, which is often linked to changes in the international context, and the proliferation of I/T itself. Strategy and its process characteristics has been required to change too, to become much more dynamic, process driven and characterised by significant levels of iteration and

learning. The conclusion of this has formulated a hypothesis which is explored further in section 3. That is, that the notion of I/T alignment is still with us, but it is now required to be embedded into a dynamic learning process. This is because: (i) the I/T in these cases, cannot be separated from the strategy; (ii) there is an on-going requirement to evaluate and re-evaluate both the strategy and the I/T; (iii) Inquiry is at the heart of the process, and this is in a sense a ‘learning system’ – something that needs to be undertaken in an on-going manner. The cases confirm the findings of Bharadwaj et al (2013), that the original I/T alignment hypothesis which involved alignment in functional areas, and it is in some way subordinate to a rationally planned business strategy requires some re-consideration.

Here we propose a ‘learning system’ model which sets out to support a number of organisational goals: (i) to help guide decision-makers into making inquiry into various changing issues, contexts, technologies, and to prioritise responses in terms of decisions and actions; (ii) to help evaluate existing decisions and actions, and act to challenge decision-makers whilst recognising the complexities and vagaries in which they operate; (iii) to provide practical guidance in the implementation of I/T alignment, enabling it to make the impact that is required in contemporary contexts; (iv) to lay a foundation for future research and new case studies, to improve the design of such a learning system.

Keywords: Systems Design; I/T Alignment

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Two Limitations of the Systemic Conception of a Business Model

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We show that the recent emergence of the ‘Business Model’ (BM) construct, with its theoretical grounding and empirical support, manifests a mature systemic notion. While applauding this systemic account for business phenomena we also articulate two of its inherent limitations that direct needs for a further development of the Business Model conception.

Business Model Conception

As a response to the limitations of current management thinking and practice to account for business phenomena, the Business Model construct emerged as a unifying attempt to account for the complexities of today’s business conduct, its success or failure (Zott et al., 2011).

Early notions of a BM conceived it in terms of a narrative that managers utilise for communicative, visionary and coordination purposes (Magretta, 2002). One of its key arguments is that such a narrative is able to summarise a strategy and its intent in a manner that offers comprehensiveness or a perception of a whole, without reducing it to mere mission or vision statements.

A popular approach to BM conception regards it as “..a conceptual tool that contains a set of elements and their relationships and allows expressing the business logic of a specific firm.” (Osterwalder et al., 2005). More specifically, such a component-oriented view lists a set of components constituting a BM, including: value offering, targeted customer, distribution channel, customer relationships type, activities, resources, competencies, partner network, costs and revenues (ibid.:19). Also here a systemic ambition is articulated: “In our opinion, a business model needs to be understood as a much more holistic concept that embraces all such elements as pricing mechanisms, customer relationships, partnering, and revenue sharing” (ibid.).

Another key BM notion comes from the field of technology management and conceives of BM as a means to exploit a technology’s economic value (Chesbrough, Rosenblom, 2002). This technology-view of BM also articulates a set of BM components, analogue to the notion of a competitive strategy. Unlike its precursors though, it regards BM as a kind of heuristic logic that connects technological potential with the realization of economic value. In this, there is generic function of a BM embedded: to create economic value out of a given technology within a market place.

The last conception of a BM to be listed here, and the most sophisticated in terms of theoretical underpinnings, empirical support, as well as explanatory strength, comes from Amit and Zott's ground breaking work (Amit, Zott 2001; Zott, Amit 2007, 2008). BM is understood here as "...a company's business model as a system of interconnected and interdependent activities that determines the way the company 'does business' with its customers, partners and vendors." (Amit, Zott, 2012). More specifically: "...a business model is a bundle of specific activities – an activity system – conducted to satisfy the perceived needs of the market, along with the specification which parties (a company or its partners) conduct which activities, and how these activities are linked to each other, (ibid.). Amit and Zott emphasize a systemic notion of a BM: "Most important, perhaps, this approach encourages systemic and holistic thinking when considering innovation, instead of isolated, individual choices." (ibid.) Unlike other attempts to conceptualize a BM, this notion also stresses that all value creation is to be distributed along all actors taking part in a BM's actor-network: the core firm, customers, mediators, suppliers (Amit, Zott, 2001). Finally and centrally, this notion of a BM articulates four key sources of economic value creation: novelty, efficiency, complementarities, and lock-in (Amit, Zott, 2001).

Are Business Models Systemic?

What is a system, really? "The idea of emergent properties is the single most fundamental systems idea and to use this (and other) systems ideas in a conscious organized way is to do some 'systems thinking'." states Checkland (1981) and elaborates: "Throughout the systems literature the core image upon which systems thinking is based is that of the adaptive whole. The concept of some whole entity (which may be seen as a whole because it has emergent properties) existing in an environment which may change and so deliver shocks to it. The adaptive whole may then survive in the changing environment if it can adapt to the changes." (ibid.). Checkland has identified four fundamental characteristics of an adaptive whole (ibid): emergence, hierarchy, communication and control. Also Le Moigne offers elaborated articulation of a general system, regarded as a set of components that give rise to functionality and that can transform within an environment, in relation to some intentions (Le Moigne, 1994). Secondly, systems are understood as adaptive whole, with a layered hierarchy that gives rise to three central sub-systems: operations, information and communication, and decision-making; all aimed at a successful survival (Le Moigne, 1990).

We are now equipped for the key task assumed here, to answer the question: how systemic is the current BM thinking? Starting with the narrative-notion of a BM we may conclude that its systemic contribution lies in the gestating of a business as a whole, in terms of a well-articulated narrative that offers a perception of comprehension of a whole business; it links various BM components in a manner that is easy to understand and to memories. It also stipulates a more analytical adjunct that gestates the economic logic of the BM spelled out, in terms of some conventional business techniques e.g. profit-and-loss plan. In such a manner, we may conclude that the narrative-notion of a BM provides a systemic advancement when compared with more conventional approaches to the conception of a business (e.g. competitive strategy, cost-benefit analysis), however it is more focused to the gestating and communication practice and not addressing the very substance or content of a business. Thus, the narrative-view of a BM does not offer substantive-systemic conception of a business.

The component-based view of a business conceives a BM in terms of a set of specific components and their relations, hence accounting for a system's structure and at best hierarchy. While it certainly is needed to understand the underlying structure of a business, the component-

based approach does not help us with the conception of a BM's functionality, in relation to some intentions and environment. This means that even if we conceive a business in terms of its key components and relations between these, we will not understand its success or otherwise, nor how it may reach that success, or how it would change and adapt to the new conditions.

The technology-based view of BM also accounts for a set of components and their relations, and centrally to that these components are to include some technology – in systems terms we account for the structure. Further, we are also informed here that these components are to be organized so as to generate economic value out of the embedded technology in a market place. In systems terms we are thus offered a rather generic intention and environment of a BM. However, this approach does not account for the functionality of a system, i.e. how is it to realize its intention.

Finally, we arrive to the Amit and Zott's notion of a BM. Unlike the previously reviewed notions of BM, we can derive that in systems terms it offers matured conception. It not only accounts for the components and structure of a business, it accounts for its functionality, intention and environment; in this, functionality is the emergence out of the structure. This notion also characterizes a BM in terms of an adaptive whole, with its hierarchy of levels, i.e. governance vs. the operations, i.e. content and structure. This set-up makes it possible for a BM to transform, aiming to adapt to new conditions.

The above investigation uncovers a systemic progress of the BM construct development, from a narrative-based and component-based, via the technology-based, to the very mature one, that virtually accounts for all key characteristics of a general system.

Two Challenges to the Systemic Conception of a Business Mode

We do welcome the above presented investigation finding that the most advanced notion of a BM is systemic. However, we also wish to articulate briefly two challenges to the systemic notion of a BM, which suggest needs for its further development.

We can recall that all notions of a BM regard business as a set of components, typically with several actors interacting in a network to generate economic value, implying that a BM transcends a single actor such as a firm. While this constitutes an advancement compared to the conventional company-centric conception of a business, the BM conception seems to assume implicitly that actors involved in a BM are there only to serve one BM at a time. To the contrary, we may easily observe more complex realities! Firstly, a BM that is managed by one firm, and where some other firms take part in, implies typically that those other part-taking actors manage their own BM and may be part of still other business models. This means, in turn, that we have a network of overlapping and interlinked business models, as one and the same actor may part-take in several business models – recall the relation of the two giant companies Apple and Samsung, where both compete with each other, sue each other for IP incompliance, and at the same time one is a supplier of inputs to the other. This means that regarding Samsung as a mere passive actor that is part of Apple's BM is to reduce reality as Samsung has its own BM and also is part of other BM, such as Google's. This means that one and the same actor may part-take in several BMs and one and the same actor may offer several BM. Our message here is thus that reality shows that a more comprehensive conception of a specific BM requires an identification of the part-taking actors' BM and how these are overlapping: aligned, conflicting or coexisting.

We wish to articulate a more profound limitation of a systemic BM conception. The system notion was derived from empirical studies of biological phenomena holding the ontological position that a system's components are fused into a whole and thereby fully aligned with the whole's functionality and aims. Therefore, a system's components lack its own autonomy and

identity. On the other hand, the realities of business actors are quite different. Actors in the market places part-take in multiple business models, sometimes with conflicting intentions and temporarily only. Due to its biotic root metaphor of an adaptive organism, the systemic conception of a BM assumes a position of macro-reductionism and eliminates the actors' agency, imposing a sort of determinism upon actors part-taking in a BM. We therefore advocate that a post-systemic root metaphor is to be assumed by BM conception, one that may make more justice to the realities of businesses.

Keywords: Business Model; Systemic Conception

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Rethinking the Business Model for Small Companies: a proposal

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Aim

During the last twenty-five years numerous and profound changes took place in the world eco-system: the globalization of the market competition, the adoption of the typical models of market economy by almost all the industrialized countries, the development of the Internet and ICT (Amit, Zott, 2001; Zott et al., 2011), the industrial and technological convergence (Berglund, Sandström, 2013) (Berglund, Sandström, 2013). The combination of these phenomena forced firms to rethink and deeply change the way they work, as well their strategic choices of configuration of activities (Stampacchia, Colurcio, 2014)

Therefore the interest in business models has grown substantially among both scholars and practitioners (Berglund, Sandström, 2013; Zott et al., 2011).

Anyway, in spite of the focus of both research and managerial practice on business model there is no generally consensus on the definition so far (Berglund, Sandström, 2013; Zott et al., 2011), neither on the structure, and evolution of business models (Morris et al., 2005).

This study investigates in depth the case of a new and small Italian firm.

It aims to contribute both to the managerial debate and practice by identifying the foundational elements of a cutting edge business model to sustain the competitiveness of traditional small firm according a value co-creation Logic (Vargo, Lusch, 2008).

Theoretical framework

The study refers mainly to two research streams: i) research on business model and ii) contributions on practice theory.

According to the shared issues in the literature (Berglund, Sandström, 2013) the business model can be viewed as a sets of components and their interrelationships that transcend the boundaries of any one firm to describe how firms create deliver and appropriate value (Chesbrough, Rosenbloom, 2002; Teece, 2010). In this study we understood business model as a new unit of analysis (Stähler, 2002; Zott et al., 2011), as a system-level concept that is centred on activities and focused on value creation as well as on value capture (Zott et al., 2011).

Practice are a configuration of heterogeneous elements, a set of bodily-mental activities held together by material, meaning and competence (Røpke, 2009). According to Korkman, (2006), practices are “more or less routinized actions, which are orchestrated by tools, know-how, images, physical space and as subject who is carrying out the practice”. The concept of practices is not restricted to the mere action, it involves subjects, actions, tools and the context (Russo Spena, Mele, 2012) in which resource integration occurs (Caridà et al., 2014a). Practices drawn from the interconnection of many elements and depend on both customer behavior and the context (Korkman et al., 2010).

According to the practice theory, the link between the resources of customers and providers with other different contextual elements define value co-creation (Reckwitz 2002). This process is tied to a context-laden practice. Value-creating practice represents the unit of value creation; without it there no value creation, value experience, and thus no value.

Methodology

We used a Social Network Analysis (SNA) based approach (Wasserman, Faust, 1994) as it is a suitable methodology for understanding complex patterns of interaction (Streeter, Gillespie, 1992) and allows to analyse different actors who are interlinked in the network relationship. As Otte and Rousseau (2002) observed, SNA is a broad and flexible strategy for investigating social structure where the focal priority to understand phenomena is given to the relationship between actors.

The study focuses on Formabilio, an Italian company that provides an innovative solution to produce and market original and creative products that are in full compliance with the style, quality and tradition of the made in Italy. Formabilio is a network of designers, Italian furnishing SMEs (Partners) and Italian design lovers built up by an Italian furnishing startup who uses Web Based Technologies for three different but linked aims: sourcing and giving shape to the designers’ creativity, business networking and e-commerce (Table 1).

Table 1 – The case study

Formabilio is an Italian start up that produces furniture, lighting and home accessories designed by creative minds from all over the world in a participatory and eco-friendly way. It is a community of talented designers who propose innovative solutions with style, comfort and according to sustainability standards. Formabilio “is a contest provider” as the co-founder says, “it organizes call for ideas to gather through digital platform the most original and innovative ideas from the creative crowd of community”. Ideas are chosen by a community of design enthusiasts, manufactured by small enterprises of the made in Italy and sold online on the web-platform Formabilio.com.

The architecture of the digital platform allows Formabilio to fit the users’ needs with the designers’ ideas and the know-how of Partners. Designers are the main actors engaged in the creation of a product as well as anyone who loves design; they are called to propose ideas and participate to idea contests. The entire community is called to evaluate, comment

and vote ideas, while the Partners of Formabilio produce the winning ideas. Within the Formabilio platform, each designer can manage a personal page - “our designers” - where he/she can tell itself by introducing passions and experiences and the creative solution proposed to the community. All submitted ideas are evaluated, commented and voted by peers and potential customers. The community judgment drawn from a formula that bond the number of votes, the average of the opinions (e.g. I don't like it, do it better; good, I like it and great) and the reputation of voters. The best ideas in terms of innovation, sustainability and appeal are selected and submitted to the evaluation of a jury of experts, composed by the Formabilio's staff, Partners, and experts. The winning ideas are developed and transformed in products by the small craftsmanship companies partners of Formabilio in full compliance with the know-how and high quality of the made in Italy tradition. Formabilio is the hub of the network of excellent manufacturing companies who produce the selected ideas (Ivo Fontana Mobili, Euroline Furniture, Live In, Torremato, Fratelli Poli and Artelight). It uses the digital environment to favor the sharing of resources and the cooperation between all the actors of the network. All realized products are marketed online through the platform. Formabilio business model is based on online sales. It grants to the winning designers a fee of 7% on all sold products and to the community a 10% discount on the products purchased if they have voted and chosen a winning project. The company's goal is to value the skills of all the players involved. The activity counter lists each actions carried out by the community members and grades their involvement in the project by building their reputation. Four months from its launch, more than 40.000 people have registered and have joined the Formabilio's community. Among them, 700 designers submitted more than 1.100 projects for the first four contests. Up to now, 96.549 users joined the platform and 2.415 young designers have been involved in 32 ideas contests by submitting a total of 5.590 proposals. The community has voted 26.800 times and commented more than 52.000 times. More than 80 ideas to produce have been selected and 44 have been realised by the Partners involved in the project and are now available in the online shop (Caridà et al. 2014b).

Findings

Our study drawn from the idea that Web Based Technologies are a strong enabler for a the development of innovative business models (Osterwalder, 2004) and stressed the role of interactive technologies for boosting a revolutionary business model based on collaborative network. The analysis of the case study allowed us to define the active engagement of different actors of the entire business ecosystem as a foundational element of a business model.

The study emphasizes a broad view of business modeling which comprises and emphasizes value creation (co-creation) process. Indeed, it stresses the role of the entire network in creating value (e.g. economical and financial, relational, reputational, cognitive and epistemic) and goes beyond the merely engagement of customers (Brodie et al., 2011; McGrath, MacMillan, 2000) as it relates to the engagement of all actors (Chandler, Vargo, 2011) and to the interaction and relationship between them (A2A).

The paper contributes to the studies on business model as it provides an integrated perspective of topics that up to now have been different and separately deepened; depending on the stream of research of scholars and on their specific field of interest (strategy, finance, operations).

We identified the pivotal factors for the designing of value co-creation oriented business model i) resources; ii) actors; iii) value, and the mechanism (interaction/sharing) and rule for the working (resource integration process) of the model itself. Resources (operant) are the main source of the competitive advantage and all actors of the network have different (in quality and quantity) resources (operant and operand). Afterward the competitive advantage depends on the all actors of the network and it is not a mere output of the firm activities; it is the outcome of a social and collective process: the value co-creation process (Vargo, Lusch, 2008). The interaction actor to actor (A2A) makes the value creation a value co-creation process in which the value emerges only from the integration of resources (Colurcio et al., 2014) and the transformation of resources: all the actors integrate resources and cooperate to gain a competitive advantage for the entire system.

This study provides relevant implications for companies and managers who are challenged by the need to redesign their business model to cope with changing of ecosystem and environment. Specifically, we provided a general guidelines for designing the business model according to a cooperative and value co-creation logic as we identified both the pivotal factors, the mechanisms and rules for the working of the model itself.

Key words: practice, value creation, collaboration, resource integration.

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Supply Chain Biomimetics

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Biomimetics, also known as bionics, biognosis, or biomimicry, is the use and implementation of concepts and principles from nature to creating new materials, devices and systems. (Roco, 2003). Biomimetic approaches have been largely applied to tackle all kinds of technical challenges and to develop design solutions, whereas their application to solve economic problems has hardly been considered so far.

However there is a growing interest in the approach of “learning from nature” when it relates to increasing complexity, uncertainties and accelerated change. (Ferdinand et.al. 2012, p.5) In this contribution we attempt to investigate, whether robust biological systems have evolved structures and processes which may serve as a source of learning and insight for the design and management of supply networks (resp. value creation networks – VCNs).

In this regard we pursue to answer the following questions:

- What are similarities and differences between ecosystems and VCNs?
- Which analogy conclusions can be drawn when comparing these systems.
- Can the study of ecosystems provide basic principles for the design and operation of VCNs with regards to their stability and sustainability.

Our analysis includes analogies, i.e. the identification of evident similarities between biological and economic systems, as well as more indirect references between natural and management science explanatory approaches, for example in the context of concepts such as power and control, competition, cooperation, dependency etc..

Our paper state of work is still of an exploratory nature. The intention was to identify promising fields of interest for further research. The literature review can therefore not be considered as comprehensive, however we’ve included already existing literature studies with a broader focus.

For the purpose of this abstract only the most important aspects have been included.

Similarities and Differences between ecosystems and VCNs Defining the comparative systems At a first glance (not least because of the similar wording) supply chains vs. food chains appear to be a suitable basis for comparison. The main characteristic of both systems is the transfer of material from one process stage to the next. However it is more appropriate to look at a more comprehensive biological system where the functional links under consideration are not limited to flows of material.

The biocoenosis (in English the term ecosystem is rather used) respectively the trophic levels (Möbius, 1877) therein represent a suitable analogy for VCNs.

General Comparison of structural characteristics and structural dynamics Ecosystems just like VCNs can be considered as “open systems”. (Von Bertalanffy, 1969) VCNs are based on three fundamental flows: Material, Information and money. In ecosystems, the transfer of material (biomass) is evident, whereas equivalent streams of information, are not that obvious, to say the least. If we compare money with energy, it can be stated that the flow of energy in ecosystems can take on some specific monetary characteristics.

There are interlinked stages in both, ecosystems and VCNs. However, in VCNs an increase in value (attributed by the agents of the supply chain and eventually the end customer) can be observed while a product moves along the supply chain. In biological systems an increase in value can hardly be stated, when biomass is passed through the trophic levels. (In fact, the same can be said about value network activities, if you look at them from a different agent’s perspective: What added value does a piece of furniture really have compared to a piece of wood or even a tree?) So a fundamental distinction between the two systems stems from the fact that in economic systems there is a purposeful context which attributes value to the activities, whereas biological “action” is based on functional programs.

Thus, the whole construct of adding activities in a supply network is a result of the teleological condition of human behavior.

The artefact is „informed“ by the purpose (e.g. the final product) as it moves through the stages of the VCN. This is another aspect of this fundamental difference: In an ecosystem there is no final product and no artefact is passed on to the next stage.

In VCNs there are subjects creating objects, in ecosystems – in particular when looking at food chains – e.g. often the predator-“subject” on one stage is the prey-“object” of the next. This also leads to contrary selection dynamics. In VCNs high demand for a specific product strengthens the position of the supplier; the opposite is true for high predatory pressure.

In a VCN the end customer determines, from which supply chain to obtain a product and therefore which supply chains will be successful and eventually survive.

More specific findings

Relations in a VCN are based on a mutual exchange of goods and services. In a natural food chain, usually the „supplier“ is not interested to deliver and the „customer“ does not offer any consideration.

In an ecosystem we often can observe an interplay of bottom-up and top-down control dynamics. E.g. there are similarities with regards to a bottom-up control based on a limited supply from the lower trophic level to the next. Companies in VCNs also have to secure access to limited resources. However, in a consumer driven situation there will always be a top-down control in effect.

Thus there is a competition for resources in ecosystems and VCNs, and a competition for customers in VCNs. Just like the Pike (*Esox Lucius*) companies should adapt their sourcing strategies to find alternative suppliers in case of scarce resources.

Forms of cooperation in ecosystems are e.g. mutualism, seed predation (granivory) and animal dispersal. In VCNs just like in ecosystems cooperation is of mutual benefit in one way or another, even though in ecosystems this benefit is often not easily detected at a first glance.

There are many forms of interdependencies in ecosystems, such as coevolution, specialist feeding, parasites and key-stone species. The latter can be an interesting concept e.g. when looking for vulnerabilities in a supply network: These may stem from companies which are not

even members of the actual supply chain. Such considerations can also play an important role in make or buy decisions or when shaping a competitive strategy.

Both systems usually have immanent redundancies; the more redundant branches are eliminated by reducing diversity in the system, the higher is the probability of a total system collapse. Research indicates that diversity is rather an effect of the stability of an ecosystem than vice versa. (Reece et al., 2013)

Conclusions

In our study we could find several basic similarities and also differences between VCNs and ecosystems. Based on selected examples we found analogies and identified structures and interactions which may be of interest for application in the field of supply chain management in particular with regards to competition for resources, control, interdependence and stability. On the other hand, the lack of a “product” in ecosystems makes it difficult to compare them with VCNs regarding cooperation and end client orientation. However, more specific research still needs to be done.

Keywords: *Supply Chain Management, Biomimetics, learning from nature, ecosystems.*

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The need for Systemic Design in Business Innovation

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Business as well as academia needs to deal with two predominant paradigms in today's rapidly changing environments, innovation and complexity. Both paradigms have been amplified in the last couple of years through the exponential growth of pervasive socio-technological networks. Innovation is no longer a competitive advantage a company could exploit to set itself apart for a longer time. It is the underpinning rule of the game in the globalized world. Innovation amplifies complexity as it enables order out of chaos, even increasing social and technological complex systems.

Socio-technological networks enable us to create value, independent of space constraints and at least human perceived time (zones). A vast amount of new services and products based on the exploitation of these socio-technological networks is already on the market, big data, and individualized content and prizing, recommendation systems for people and goods, location based services, and real time management tools for production or sales activities are just a few examples.

Complexity is creating value, for business, governments, interest groups, and individual users. We are solving the problem to manage and control complexity through new socio-technological networks and tools for their exploitation. The corresponding author likes to argue radically that managing complexity is not a business or organizational problem anymore. Like Controlling has solved the problem in business of steering a given organization, big data solutions and other algorithms are currently solving the problem of navigating and steering the complexity of the omnipresent global social technological networks.

Nevertheless business strategic management can only be informed by the output of controlling instruments, but need the competencies of deciding under uncertainty and leading from the future as it emerges. Thus organizations are in need of new human competencies to work with complexity and shape their ventures with complexity.

Allee Verna (2003) projected that the core of future management thinking will be deep understanding of living systems. In the 1990s she witnessed the trajectories of integrating systems, renewing values and creating a union with life in management approaches. Organizations will evolve from thinking environments into self-conscious environments, from innovation driven into intuition driven organizations, claimed Violeta Bulc (2012).

Self-conscious environments will not only need sensors, but consciousness and thus people who are able to perceive and embody constantly opportunities as a rich source of value creation. For this approaches we are in need of value perceiving decision and design competencies (in German: Gestaltungskompetenzen).

As these resources for innovation seem to be unlimited, still business is facing a new constraint, the limitation of physical resources. New paradigms are emerging like the raised consciousness for the facts of a limit of growth (Laszlo, Blachfellner, 2012) and thus the need for new business logics like Ethonomics including a re-localization and further glocalization of economics and the urgency for radical change through radical innovation (Blachfellner, 2011).

Innovation approaches aiming at optimizations or lean management are simply not enough to solve the technological and social problems which we need to unravel and which promise the next possible steps towards a sustainable growth. Thus business is in need for radical innovation (Peschl, Fundneider, Raffl, Blachfellner, 2010). And again we need design competencies to create radical innovation, the ability to perceive and create the new out of the already existing core, the ability to synthesis the new through existing opportunities, the ability to enable emergence and be enabled by emergence.

Design thinking changed business development significantly and shifted the strategic management into an opportunity increasing future oriented design management. The schools of Design thinking have established an innovation process of understanding through observation, conceptualization, validation and iteration, before an implementation (Clark, Smith, 2010) Otto Scharmer (2007) introduced a similar approach although disconnected from the trend of design thinking. His “Theory U” proposed five steps of leading from the future as it emerges: (1) Co-initiating (2) Co-sensing (3) Co-presencing (4) Co-creating and (5) Co-evolving. This approach should be a guideline to work with the emerging complexity to curate disruptive patterns of innovations and change (Scharmer, 2007). A combination of both approaches, the systems thinking informed “Theory U” and design thinking informed “Design process” is setting the stage for the development of an advanced body of knowledge called Systemic Design.

Approaches like System Oriented Design (SOD) developed by Sevaldson (2000, 2008, 2009, 2013 a,b, 2014) at the Oslo School of Architecture and Design are attempts to formulize design practices dealing with super-complexity in real world large scale social systems, services and products, informed by established perspectives in modern systems thinking, especially Soft Systems Methodology (Checkland, 2000), Critical Systems Thinking (Ulrich, 2000; Midgley, 2000) and Systems Architecting (Maier, Rechtin, 2000; Rechtin, 1999). Its main purpose is the development of a rich picture through several techniques of mapping and in depth inquiry including a multi-stakeholder approach and rich contextualization enabled through visual language.

Whereas Jones (2014) aims at a re-conceptualization of design thinking and systems thinking into a new subset specifically called Systemic Design. He witnesses a growing attention of designers like Harold Nelson and Erik Stolterman (2003) for systems thinking and systems thinkers articulating systems thinking as a design process (Ackoff, 1993) or design as a systemic discipline (Nelson, 1994). Furthermore he highlights Pourdehnad, Wexler and Wilson (2011) who might have been the first to define a consensus integrative approach as a strong systemic view of complex system problems addressable by the intuitive and abductive approaches implicit in design thinking.

Jones (2014) defines Systemic design as distinguished from service or experience design in terms of scale, social complexity and integration: Systemic design is concerned with higher order systems that encompass multiple subsystems. By integrating systems thinking and its methods, systemic design brings human-centered design to complex, multi-stakeholder service systems. Jones (2014) concludes that Systemic design is not a design discipline (e.g., graphic or industrial

design) but an orientation, a next generation practice developed by necessity to advance design practices in systemic problems.

The corresponding author concludes that we are in need of new approaches in business education (Blachfellner, Wallner 2011) and radical innovative business approaches in strategic management (Blachfellner 2013) for this next generation practice to tackle the current resource constraints and establish new business success upon the wealth of constantly emerging socio-technological systems, but with a renewed deep understanding of their integration with the web of life. "Everybody is a designer" might not be the best approach, because we are in need of new professionals, who might not necessarily be part of the design community and profession. Systemic design as a multidiscipline approach might support the emergence of these new professionals with advanced abilities of multi-reasoning and inventive methodologies well beyond the analytical systems modeling and simulation techniques preferred in systems science so far.

Keywords: *business, innovation, strategic management, design, design competence, systemic design, complexity, enabling, value creation, business education.*

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SUSTAINABILITY AND SOCIAL RESPONSIBILITY

Energy development in africa and the performance of renewable energy project

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Africa has abundant energy resources; however, it is estimated that no more than 30% of its population has access to reliable and sustainable grid electricity. Furthermore, only 50% of the countries in Sub-Saharan Africa (SSA) are expected to have universal access to electricity by 2050. Literatures identify affordability, financing mechanisms, and policy instruments as key factors for the performance of renewable energy projects. Our research data has revealed that the performance of renewable energy systems cannot be viewed or determined in isolation (contextual reduction) from the social system of the host community. Furthermore, the performance of renewable energy projects is significantly influenced or explained by knowledge and memory production at the individual and community level in concert with connectedness, making a difference, community based organization engagement, transitions engagement, localization, synthesized and contextualized innovations, modular system design, maximization, and discovery, while the importance of affordability is nuanced from current literature in our findings.

Keywords: Performance, Nested complexity, Connectedness, Transitions engagement.

How to Operationalize the Notion of Sustainability?

Understanding the Processes and Their Effects on the Elements in the Sustainability Heuristic Model

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Most organizations, leaders, communities, and businesses desire sustainability, however, there is very little information in the literature to provide insight or guidance on how one can achieve sustainability. These organizations typically use the Brundtland definition of sustainability which focuses on decision making that provides for today while also providing opportunities and meeting the needs of future generations. Within this definition of sustainability is a temporal dimension, that a decision made today should improve conditions (perhaps socially, environmentally, and economically) for society now as well as for future generations. Though the issues of today are relatively evident, the future is uncertain, creating ambiguity of knowing the needs of future generations. Therefore, insight as how one might think about decision making under future uncertainty is warranted.

A science called future studies or foresight, explores how one may think about the future. Foresight is the practice of being reflective on the futurity of present day decision making. This science or practice has been used historically by the military; not necessarily to predict future events, but to prepare for the possibility of future events. To make use of this ‘anticipatory intelligence’ we gain when we think about the future, certain types of detailed and subtle processes occur at the individual and the collective level. By comparing the learning about the future with what we already know we can rationalize or change our assumptions or mental models that frame our thought processes and decision making and include the future in our decision making practices. This alignment of the present and future also occurs with the alignment of our collective or societal desires and our individual actions.

Questions such as ‘what does this mean to who we are?’ and ‘what does the learning mean to what we do (social learning)?’ foster a reflection to align our individual and collective desires with our actions. When we (individuals or groups) learn something, particularly if we can learn how we might respond or not respond -- this can build our ability to adapt (adaptive capacity). Integrating these key elements of foresight (thinking about the future), social learning (what does this mean to us?), adaptive capacity (how does this understanding prepare our society to survive and thrive over time?), and sustainability (the desire to exist in the future) seem to be key to manifest sustainability. I have articulated the concept of a Sustainability Heuristic Model that

illustrates how these steps build upon each other and therefore collectively can lead to sustainability because it involves thinking about the future, develops collective learning, which increases our capacity to anticipate and adapt, which taken all together is likely to increase our consciousness of sustainability. Though each decision taken today may not necessarily be sustainable (and we won't know until long after) perhaps thinking or 'being' in this fashion can overall increase the likelihood of being sustainable.

Through a comparison of the processes involved in each element, I have observed that these elements use very similar formal processes but with terminology rooted in their original discipline. These general processes include:

1. Individual identification of a discontent, concern, or less usefulness of the existing paradigm;
2. Social gathering to explore the issue further (to broaden perspectives, clarify the question, develop a common language, and determine if the issue warrants further action);
3. Social and individual exploration of options, ideas, and frameworks for consideration. These may involve currently accepted ideas (strategic planning) but most often will employ some future oriented consideration or strategic thinking (various degrees of foresight from a shorter time period of 2-5 years to longer time periods such as 50 years);
4. Deliberation or discussion on what the group should do; and
5. Communications and follow up on action at later dates.

Following an analysis of the trends in the literature and process comparison of the elements of the Sustainability Heuristic Model, I see a correlation with the transitions in philosophy. The model correlates with a movement from positivism to social constructivism, for example, from strategic planning to reach a predetermined goal; to a movement towards post-constructivism which I call emergence (consciousness of a way of being versus a predetermined end outcome). The Sustainability Heuristic Model is consistent with these trends in the literature. For example, in the element of sustainability, Wilber's Integral Theory in the form of the Integral Sustainability Theory that expands the inclusion of additional world views, through the inclusion of the future via future studies, integrates the consciousness of the temporal dimension in current decision making. Studying future discontinuities or change increases social learning on how to manage change and increases adaptive capacity to manage transitions to manifest social change. This awareness increases the adaptive capacity of multiple agents to respond to change and diversify solutions which increases the likelihood of being sustainable over time. Understanding these processes can increase consciousness of the nuances required to increase the emergence of sustainability.

Keywords: Sustainability; Heuristic Model

Pluralism of Objects, Functions and Values in the System of Accounts for Global Entropy Production (SAGE-P): Double Entry (Nonlinear) Bookkeeping for TEEB

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One of the great metaphysical ideas in economics is expressed by the word 'value.' What is value and where does it come from? It does not mean usefulness -the good that goods to us...It does not mean market prices...it is something which will explain how prices come to be what they are. Like all metaphysical concepts, when you try to pin it down it turns out to be just a word. (Robinson, 1962), We shall adopt the following concept pluralism for this paper:

A philosophical position where the trumping characteristic is tolerance towards the other point of view, theories, methodologies, values and so on. That tolerance is not an act of kindness, It is motivated by skepticism and honesty, (Friend, 2013).

The inverse of pluralism is monism. (i.e., predominance of the neoclassical economics theories, methodologies, values and so on).

We start with a set of objects, a set of functions and a set of corresponding values unique to the object/ function of any well-defined Topological Domain Space (TDS) of entropic processes over space-time.³ SAGE-P represents an hierarchical-structured system of accounts of entropy production in the form A [B(C)]: where: (C) Econosphere, (i.e., the domain of economic objects and function) is a subset of (B) Sociosphere, (i.e., the domain of social/institutional/ demographic objects and function) which is a sub-set (C) Ecosphere, (i.e., the domain of living objects and functions and habitat).

By definition the values of all objects/function belonging to C-category are conserved-in-exchange, (i.e., prices), in the B-category are conserved-in-use, (i.e., participation), and in the A-category are conserved-in-themselves, (i.e., existential).

1 Linear Accounts satisfy the superposition principle which states that, for all linear systems, the net response at a given place and time caused by two or more stimuli is the sum of the responses which would have been caused by each stimulus individually. So that if input A produces output X and input B produces output Y then input (A + B) produces output (X + Y). Nonlinear accounts does not satisfy this principle, so that (A + B) produces outputs (X < or > Y). In other words, the accounts represent a system of inequalities where the whole is either greater, or lesser, than the sum of the component parts.

2 The type of inclusive pluralism advocated in EE (and heterodox economics more generally) leads to domination by mainstream thought because it is dominant already (there is no level playing field). (e-mail 24/11/2013 from Clive Spash, see Appendix I)

3 Topology is a branch of mathematics formally defined as "the study of qualitative properties of certain objects (called topological spaces) that are invariant under a certain kind of transformation (called a continuous map), especially those properties that are invariant under a certain kind of equivalence (called homeomorphism). To put it more simply, topology is the study of continuity and connectivity.(Wikipedia)

The distinction between use and exchange values is, indeed, well-explored in the classical economic literature, see Adam Smith's water/diamonds paradox.⁴ However, for our purposes the distinctions are contextual to the objects/functions of the TDS. For instance education in the B-category assume rates of participation of students/teachers/administrators etc., measured as inflows (i.e., production) outflows (i.e., consumption) of the Low Entropy (educational) Fund, (LE(e)F). The measure of the (e)F is generally assumed to be the institutional capacity, but may include more abstract categories as the stock knowledge such as the level of education of the general population, libraries, media, internet etc. The measure in the the C-category assume the money valuation of the matrix database in the B- category. Typically this would include the monetary valuation of the inflow, (i.e., production cost to replenish the consumed LE(e)F stock, including new investment) and the outflow, (i.e., consumer expenditure on education, or the knowledge industry if more broadly defined).

It should be noted that education is a social function of the Sociosphere and it is here that the rate of entropy production is measured. Education for sale is a sub-category that belongs to the set of objects/ function in the Ecosphere. However, the construction of schools, libraries, universities, etc are physical objects subject to the Second Law of Thermodynamics, as is the case of book burning. We make the distinction between: (a) immaterial objects (e.g., educational attainment of a given population) and (b) material objects (e.g., infrastructure such as buildings, as well as the material consumption of the participants). The measure of entropy efficiency is obtained by a mapping of (a) \rightarrow (b).

Valuation in the A-category is difficult, complex and to a large degree inaccessible to any accounting calculus. However, it must be kept in mind that in the hierarchical value-structure posited in SAGE-P the existential value, for instance the education system in the C and B categories is in the A-category accounts. This makes sense since existential value is rooted in, and totally dependent upon, qualitative properties of the larger-scale ecosystem. This universal perspective is embedded in Second Law of thermodynamics, where for instance value of educational system can be neither be separated from its past, (i.e., history) nor from the anticipated future evolutionary trajectory described by the emergent properties of dissipative educational systems far from equilibrium, (Prigogene, 1997).

This paper will attempt to demonstrate, inter alia, methods whereby intrinsic values, which are infinite or zero for the individual, are transformed into a collective set of existential values.⁵ The core accounts

4 "The word VALUE, it is to be observed, has two different meanings, and sometimes expresses the utility of some particular object, and sometimes the power of purchasing other goods which the possession of that object conveys. The one may be called 'value in use ;' the other, 'value in exchange.' The things which have the greatest value in use have frequently little or no value in exchange; and on the contrary, those which have the greatest value in exchange have frequently little or no value in use. Nothing is more useful than water: but it will purchase scarce any thing; scarce any thing can be had in exchange for it. A diamond, on the contrary, has scarce any value in use; but a very great quantity of other goods may frequently be had in exchange for it." Adam Smith, 1775, Wealth of Nations.

5 The word existential is associated with the philosophy of existentialism: A central proposition is that existence precedes essence, which means that the most important consideration for individuals is that they are individuals—independently acting and responsible, conscious beings ("existence")—rather than what labels, roles, stereotypes, definitions, or other preconceived categories the individuals fit ("essence"). The actual life of the individuals is what constitutes what could be called their "true essence" instead of there being an arbitrarily attributed essence others use to define them. Thus, human beings, through their own consciousness, create their own values and determine a meaning to their life, (Wikipedia) Here we might paraphrase employing Karl Jung's 'collective consciousness,' (i.e., the most important consideration for society is that the collective consciousness —interdependently acting and responsible for the indefinite conservation of the LEF as per any well-defined human welfare function.

of SAGE-P describe the inflow (i.e., production) and the outflow (i.e., consumption) from some well- defined stock of the Low Entropy Fund (LEF). The existential value of objects, both material and immaterial, are calibrated to the quantities and qualities of the surplus the LEF available for human consumption. In other words, the value of the object can only be positive (and increasing) if, and only if, the rate of production, or inflow, \geq the rate of consumption, or outflow, of LEF over some well- defined time period.⁶ While it would be tempting to treat existential-value as the residual after subtracting use and exchange values, this would be wrong. In the hierarchical valuation system the exchange-value $<$ use-value $<$ existential-value. Another way to see this is to consider Nature's production function as the primary producer upon which the human-production function is a fully dependent variable.

At one time the economists treated natural capital as gift of Nature. Adam Smith assuming labour theory of values anticipated the notion that Nature transforms the kinetic energy drawn from the solar system into 'work' equivalent to the work of Man, to wit:

In agriculture, too, Nature labours along with man; and though her labour costs no expence, its produce has its value, as well as that of the most expensive workman. (Smith,1994).

However, it was Georgescu-Roegen insight of the Entropy Law is not only basic to the understanding of the nature and limits to the material economy, but the ultimate nonmaterial objective of the human welfare function, to wit:

The significant fact for the economist is that the new science of thermodynamics began as a physics of economic value and, basically, can still be regarded as such. The Entropy Law itself emerges as the most economic of all natural laws. It is in...the primary science of matter that the fundamental nonmechanistic nature of the economic process fully reveals itself (Goergescu-Roegen, 1971) The Entropy Law enables the replacement of the unsound, and impossible to measure, neoclassical accounting of sustainability, (i.e., time-discounted monetized present value of a non-declining human welfare function), with the pragmatic, readily measurable data sets described in SAGE-P as a minima function of some well-defined, socially acceptable, rate of 'entropy production.' (Mayumi, 2001, Friend, A.M., Friend M., 2009, Friend, 2012).

Entailed by SAGE-P are radical statistical/mathematical structures which include inter alia: (a) Bayesian prior probability distributions, (b) algorithms which encode/decode formal inference systems (i.e., models) to natural causal systems (i.e., observed data) and vice versa, (Rosen, 1991), (d) algorithms of sustainability assumed under limit functions described by maximum entropy production per unit of consumption, (i.e., I/O measures of entropy efficiency), and (e) algorithms of ordered structures enabling systemic mining of (computerised) digital databases. available for human consumption. The accounts are constructed from algorithms of

correspondence mapping: (i) objects on objects, (ii) objects on functions, (iii) functions on objects and (iv) functions on functions.

The time period is a function of the rate of replenishment of the object-consumed. Crops grown on an annual cycle are valued at its yield per annum. A 800 year Douglas replenishment value (i.e., ecosystem services, photosynthesis, carbon sequestration, habit etc.) over a 800 year cycle. The stumpage fee based on existential value, rate rather than market-value, would, in itself, conserve the coastal rain forests of BC, without tree huggers and court court battles.

algorithms describe the entropic process in well-defined Topological Domain Spaces (TDS) of the Econosphere, the Sociosphere and the Ecosphere. Where feasible qualitative state variables, (i.e., ordinal or positional values) are mapped on the quantitative state variables, (i.e., cardinal values). This nonlinear method of accounting enables direct (as opposed to indirect) measures of the human welfare function, the ecological footprint, the health and integrity of ecosystems as well as other qualitative measure of state, and change of state, of any well-defined complex adaptive system.

Keywords: *Nonlinear Accounting, Entropy, Pluralism, Evaluation of Ecosystem Services.*

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Human Capital and sustainability as Value Creation Levers in Leisure Sector. A model suggestion through the case analysis.

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The European productive context is characterized by small - and medium - sized firms, often family enterprises, along with a much more limited dependence on the financial market, with limited equity capital and ample use of debt capital. For such firms, even when profits are high, the distribution of dividends is less important than the growth of equity value (Pellicelli, 2007). Achieving a high level of profitability is precisely the condition for increasing the value of the firm's economic capital (Mella, 2005) in order to gain listing on the stock exchange. The most analyzed way to create value is, nowadays, the correct management of what is called “intangibles”. Among what in a firm creates value, but is not touchable, is it possible to find something can connect business to what we can call “social concerns”. This creates economic value and contributes to healthy ecosystems and strong communities, feeding the “systemic living vision” (Golinelli, 2009) they work in. We can talk about the sustainability concept (Gao, Bansal, 2013; Hann, Pinkse, Preuss, Figge, 2014), which is connected to a good human capital practice (Pellicelli et al, 2012) and a continue firm integrated communication (Belch, Belch, 1998, 2009; Duncan, Mulhern, 2004; Romoli Venturi et al, 2014). A firm can lever on its social and environmental involvement not only to beat the competition, but this is a strategic driver to improve the value and the image of a certain territory and, by consequence, to decrease the foreign investors’ perceived risk in investing capitals. We finally talk about the sum of policies and practices that can buster companies’ competitive power meanwhile they improve community economic and social conditions (Porter, Kramer, 2011).

Objective

The aim of this study is to examine case studies, coming from the leisure sector, in order to build a model organizations can follow when they want to lever on human capital, on one hand, and on the sustainability concept, on the other hand.

Research questions

In particular this paper presents an empirical analysis conducted on the relation between human resource practices, the internal and external firm communication and value creation in listed leisure firms. This work reports also about a wider empirical analysis worked out using a linear regression model adopted. Main questions we want to answer to are the following: Is human resource performance practice one of the main variable that could affect value creation performance in leisure sector? Since the theory highlights the importance of a certain degree of sustainability in order to build a stronger firm reputation, what is to significantly improve to rise higher customer satisfaction and thus better value creation performance? In which ways the human capital can be linked to the firm reputation?

Expected findings

The outcomes of the application could be a suggestion method for managers who want to find new opportunities in managing intangibles inside their organization and recognize their effects on shareholder value and sustainability results.

Keywords: *Sustainability; social innovation; leisure sector, intangibles, integrated communication, value creation.*

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Resilient organisations: adaptation versus resistance in the transition to a sustainable future – a concept

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As an indication of development ecological, economic and social frame conditions change due to global adjustments (Grunwald, 2004; Turner et al. 1990). More competition, open markets, changes in political frameworks, structural changes etc. make up the challenges to economies as a whole, organisations and employees. For the most part, however, the discussion about challenges often forgets the consequences for ‘organisational’ resilience, i.e. an organisation’s capacity to anticipate disruptions, adapt to events, and create lasting value and thrive despite the uncertainty of the future. The notion of a resilient organisation is an emerging concept for understanding and coping with the modern day pace of change and associated work stress (Mallak 1999). One may say that currently organisations fail in their sustainable transition process (Folke, 2002; UN, 2012; WHO, 2014). This paper works toward a unified theory of resilience to help embrace and manage organisational change effectively considering a sustainable future. This paper draws upon an idea of resilience within the focus of sustainable transition processes in order to elaborate an approach to the idea of “resilient organisations” by applying an adaptive cycle in a Driving Force-Pressure-State-Exposure-Effect-Action (DPSEEA) framework (Corvalán et al., 1999; Walker, Salt ,2006).

By linking resilience theory with sustainable transition process of organisations, the paper has attempted to explore opportunities for and barriers to the diffusion, institutionalisation and implementation of resilience concepts from an integrative perspective (Carlson et al., 2012). This is one way to embark on a new round of consensus-building processes that will re-envision what was propagated over the last years (Folke et al., 2002a; Martin-Breen, Anderies, 2001; Network for Business Sustainability, 2010). Nevertheless, there is a clear need for: (i) new goals with a broader view of the interconnectedness among long-term, sustainable economic, social, and ecological well-being and its resilience and (ii) better ways to measure progress towards these goals. Furthermore, in order to measure the resilience of organisations properly one cannot just consider the current situation. Any serious assessment of resilience should also bear in mind the future which results from current trends or how it is possible to include risks and limitations both currently and for the future. Finally, the theoretical outcomes of this contribution lead to the following potential fields of research:

How can this conceptual model be made practicable? How can the relationships within the DPSEEA model be analysed by using suitable indicators and data? What are the technical and data requirements for the development of such a model which are also suitable for further research topics?

Does this framework help us to identify areas, which need to be improved or adapted in order to improve organisations' ability to adapt, i.e. organisations' resilience? Moreover, is there a critical mass of areas which need to be changed in order to achieve more resilience or improvement at least – not only at organisational level?

How can the future be taken into consideration? In order to measure organisations' resilience properly one cannot just consider the current situation, but one also has to take into account expectations for the future. Any serious assessment should also bear in mind the future resilience which results from current trends or how it is possible to include risks and fears both currently and for the future?

Keywords: resilient organisations; adaptation; resistance; sustainable transition.

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Proposing a governance model for smart cities

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Purpose

In the wide range of literature on governance there are few contributions aiming at explain the linkages between this concept and the other new one of smart city.

The evolution from the idea of government related to a set of public and democratic institutions to a focus on governance, as a result of the way by which resources are coordinated in an environment characterized by a circulation of knowledge (Paquet, 1997), is strictly related to a different perspective on power and democracy which actually can change from a top down approach to a bottom up one, and vice versa.

The central priority in public policies to create, maintain, and strengthen the relationships among institutions and the different city stakeholders (Roy, 2002), is one of the field in which the development of technology has settled down in order to create a linkage through both hardware and software infrastructures.

The growth of information and communication technology (ICT) has played a fundamental role also in the founding of smart cities, as urban contexts in which the technological components are used towards the creation of a better quality of life for citizens (Caragliu et al., 2009), a more

open environment for business (Schaffers et al., 2011), and a rich soil for the well-defined conceptualization of sustainability (Marsal-Llacuna et al., 2014).

One of the main results of different smart projects all around the world is a strictly collaboration of citizens and all stakeholders in urban life through different processes within a so called smart governance. The many initiatives in the fields of city web portals, e-government, and open data aim to engage people, coordinate the enthusiasm and capabilities of residents, and allowing the co-creation of public services, but all these efforts sometimes have not been included in a wider perspective to stimulate also the abilities of the institutional representatives to aggregate and articulate their citizens' interests (Johnston, 2010).

So there is the need for the creation of horizontal networks between diverse stakeholder groups and city governments to improve governance (Anttiroiko et al., 2014) and this goal can be reached only with the development of new kind of models that link the different types of interactions in smart cities between citizens, government institutions, and citizens and local government (Makhdum, Mian, 2012).

So as it is still very difficult to track contributions on the theme of governance in the smart city or cases relate to the configuration and application of a model of governance, the proposal is focused on the delineation of a innovative way to related these two issues and the delineation of a governance model for smart cities.

Method

The authors chose an inductive approach as the literature review put in evidence a lack in a model to be applied on smart cities projects or in cities already being managed as smart ones. More in detail all the empirical evidences in Italy related to smart cities were analysed and the most relevant elements were highlighted in order to build a proposal to be tested in ongoing smartization processes. The inductive approach (Yin et al., 2006; Bryman, Bell, 2011) is suggested when the focus is on "the nature of the relationship between theory and research" and it is even more necessary when the "theory is an outcome of research". By selecting all the elements considered as relevant the authors achieve to a proposal and to the chance to modify their approach and perspective towards an inductive position to "make sense of the data through generation of an alternative hypothesis" to be tested in empirical contexts.

The chosen context of investigation is composed by 17 cities of different sizes and position inside the Italian territory. The choice was not randomized, as it depends on cities declaring their willingness to perform a transformation towards smartization and through investments. These cities presented a "smart city" project and a governance model to start the implementation of the planned ideas.

Results

The first set of elements to be investigated and connected to propose the model are several and they can even be classified on the basis of the moment in which the project takes place and the city management tries to implement the strategic project. First of all the choice of the kind of model depends on the actors to be involved as pivotal in the governing activity. Then the relationships to be established are one more relevant feature, both to focus on which are the stakeholders to be directly involved in governing activities and on the way they can be carriers of resources in the different parts of the planned project. Moreover another relevant issue is the

financial sustainability as a way to define if a governance model should be shaped by giving a more significant role to the actor (or actors) financing the investments.

One more important feature to be taken into account is the time, as some cities decided to define the governance model before starting every activity, then some changes took place in some cases while the investments were taking place and in some other cases the governance model was deliberately not decided before starting.

Finally other elements can shape the model as they have been seen as impacting on the way the smart investments took place, namely they are the context of intervention, the inclinations of the context, the stakeholders involved even in an indirect way, the previous experiences, open governance approach and the local agencies already operating.

Implications for researchers and practitioners

The creation of a model to be confirmed through empirical testing can be useful for both researchers and practitioners, as the role of the actors performing a governance role are well defined, but the ways they can carry out it can be very different. First of all researchers can investigate more and more this area, due to the lack of models underlined in the literature review performed in the first part of this work. The model can be enhanced during time and compared with elements to be taken into account in different countries, leading to the creation of governance paths to be linked to the several topics related to smart cities, like sustainability, financial models, business models, managerial approach, and so on.

As it concerns practitioners, the usage of a model tested in smart cities can be a relevant support to favour smart interventions in urban and metropolitan areas; the elements of the model can represent a set of guidelines for both local agencies and private businesses in an era when investments in smart cities are becoming more and more, no matter what the geographical area is and the size of a city is.

Limitations and further research

This research offers a proposal to be tested in the future and the elements shaping it are emerging from a national context. In next steps of the investigation new models can be proposed by looking at the empirical evidences from all over the world, to understand if cultural, geographical, and even economical elements can play a pivotal role in defining a governance model for smart cities.

Keywords: governance model; smart cities

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Fighting ecomafias: the role of biotech networks in achieving sustainability

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Over the recent years institutions, policy makers, and scientists have devoted huge attention to the problems relating to environmental degradation, pollution, and ecological variations, as the consequences of uncontrolled progress and prosperity, putting effort in the realization of plans and activities towards sustainable development. Clearly, sustainable development is a complex and difficult challenge for humanity, as attaining sustainability involves the consideration of many, heterogeneous, multifaceted, and sometimes contrasting fundamental issues, as well as a broad range of stakeholders at local, regional and global levels.

What should be noted is that at any level, science and technology play a crucial role to achieve sustainability, and also political decisions assisted by societal support and coordinated policies are essential. Hence, it is clear that to ensure successful initiatives for industrial sustainability, there is the need for a global and holistic view encompassing economic, social and environmental aspects. In this regard, it is important to acknowledge that industrial production globally is progressively attempting to reduce the adverse impact of its activities on the environment but the use of processes and technologies devoted to prevent pollution, rather than intervening barely in a restorative mode, have become a priority only very recently.

In such a complex context innovation processes are becoming increasingly central, and newer industries such as microelectronics, telecommunications and biotechnology are already less resource intensive in comparison with the traditional ones. Nevertheless, this alone does not assure sustainability which requires a step further towards economically viable, environmentally compatible, and socially responsible behaviours. In particular, biotechnologies have gained plenty of faith and credit by public opinion and governments worldwide, over the last years.

The extraordinary development of biotechnology creates expectations and hopes for a tangible and continuous improvement of the quality of life. Also, it brings intimate and profound

reflections that should balance the tension towards innovation, with the power of direct intervention owned by the protagonists of the scientific research. In addition, the improvements are such as to allow the strengthening of the protection of the critical variables for the competitive advantage, more efficient operational processes, less polluting air emissions and waste products, and product innovations to be used in the construction of effective differentiation strategies. These can be considered concrete objectives to pursue but, despite the extraordinary and unquestionable ability of biotechnology to producing radical innovations and improving life conditions, it is quite clear that there is still the lack of precious elements to support a full expression of their potential.

This paper addresses the issues relating to sustainable development to provide a critical discussion on the potential role played by biotechnologies in practically pursuing the expectations for technological, socio-economic, political and cultural changes. The aim of the paper is to deepen the issues relating to the possible contribution of the networks operating in the biotech field to social and environmental sustainability, and to contribute to better understand the role of the diverse research actors and the variety of issues that characterize the structural and relational complexity of biotechnology.

The idea that we put forward is that effective networking relationships in the biotech field can contribute to sustainability, in its broadest sense, not only by reducing the negative impacts of human/industrial activities and the restoration of contaminated territories, but also by creating a territorial and corporate competitive advantage to prevent and reduce the danger of criminal infiltrations in economic and productive activities. More specifically, building on the above mentioned themes, the paper assumes a new and challenging point of view concerning the positive potential of biotechnology and biotech companies to settle the threatens deriving to human health and environmental safety from the increasing infiltration of organized crime in the current economy.

Bearing in mind the rising importance of biotechnology, our contribution deepens the debate on the issues relating to the new discoveries, pointing out their central role to ensure environmental sustainability, also in the light of the threats deriving from organized crime activities and infiltration in the economy, that over the years have damaged a number of areas and territories threatening the environmental and ecological safety. In fact, despite the development of a complex set of norms, standards, and operational suggestions, the debate on the issues relating to the crucial need for purifying companies by criminal infiltration, preserving the corporate going concern, and introducing social and environmental values in the management of the entities, is still rather than being concluded. Also, the real knowledge of the solutions available to restore/preserve the destroyed eco-systems and the compromised health of certain areas appears still limited and jeopardized.

For the purposes of the study we adopt a multi-stakeholder perspective, because the natural resources management involves complex systems, characterized by horizontal connections between organizations operating at the same level, and vertical links between organizations, stakeholders, and the government. In such a complex environment it is unlikely that only one of the parties involved possess all the knowledge needed for the management of natural resources. On the contrary, knowledge and capabilities owned at the different levels are complementary to achieve the shared goal. Thus, the actors involved should “*co-produce*” knowledge, and need systems and mechanisms to ensure participation and dialogue.

Hence, by adopting the case study method, we will examine current networking experiences in the biotech field to understand if the above-mentioned conditions are achieved and what are the

factors that influence effective systems relationships and an enhancement of knowledge production and knowledge transfer, towards an improved sustainability. In this regard, it is worth specifying that the above-cited systemic view adopted in the study will allow us to provide evidences that not only look at the issues relating to the “*corporate social/environmental sustainability*”, but also to focus on the crucial questions of “*systems social/environmental sustainability*”.

Keywords: corporate social sustainability; systems social/environmental sustainability; ecomafias; biotech networks

Financialization, Corporate Social Responsibility and Sustainable Development. An Empirical Analysis on a Sample of European Companies

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In recent years, the global financial and economic crisis are rewriting the relationship between business and society.

The current debate is centered on the role played by the process of financialisation not only in the economy as a whole, but also and within non financial companies.

Although there is not even common agreement about the definition of the term “financialization” and its content (Krippner, 2005), we will focus on two main issues related to this process: the ascendancy of shareholder value as a mode of corporate governance (Lazonick and O’Sullivan, 2000) and the increase of profit shares which occur through financial channels rather than through trade and commodity production (Krippner, 2005).

Shareholder value maximization, together with the commoditization of business has led to a general short term approach “under which leaders are tempted to become fixated on the upside potential of short-term success, and undervalue the downside risk of excessive risk-taking and strategic failure” (PCJP,23) As Pope Benedict XVI wrote: “Without doubt, one of the greatest risks for businesses is that they are almost exclusively answerable to their investors, thereby limiting their social value....” (Caritas in Veritate., 45)

As a response, a significant amount of theory and practice in business ethics and corporate social responsibility has been produced, often focusing on the concept of Corporate Social Responsibility (CSR). CSR has been defined by the World Business Council for Sustainable Development as “the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large.” (WBCS, 1998) For an individual company,

this means the integration of social (including human rights), environmental and economic concerns into that company's values and culture. Corporate Social Responsibility: Meeting changing expectations, p. 3

The purpose of this research is twofold. First, we empirically verify if the standards of CSR reached by a firm may be seen as a sign of good management, being able to mediate between the interests of different stakeholders in a long-term perspective (Freeman, 1984), being therefore the evaluation of the CSR performance of a firm a useful criterion for asset allocation. Second, we try to go beyond CSR and verify if and how companies with excellent CSR standards contribute to sustainable development (economic growth and income inequality at a firm level).

The positive relation between corporate financial performance, together with a business model characterized by a lower level of financialization can represent a vehicle to increase the demand of a stock characterized by excellent CSR standard, which, in turns, would sustain its value, therefore providing incentives to managers to further strengthen its socially responsible behavior. This virtuous circle may have a growingly positive effect on the sustainability of firms and of the entire economy. From an investors' perspective, this leads to an increased scrutiny regarding the non-financial aspects of corporate performance, placing portfolio managers in the position of having to weight the benefits of 'holding the market' against the cost of having positions in companies that could be subsequently found to have questionable business practices.

The paper begins in Section I with a literature review on the relation between financialization, CSR and sustainable development.

Section II present data on the process of financialization within non financial companies in Europe and its correlation with economic growth and income inequality.

In Section III we present the empirical analysis on a sample of European non financial companies included in the Dow Jones Sustainability Stock Index Europe in the period 2001-2013.

Keywords: *Financialization, Corporate Social Responsibility; Sustainable Development*

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**FINANCIAL MANAGEMENT: NEW PERSPECTIVES ON RISK
MANAGEMENT AND FINANCIAL INNOVATION**

Technological Transition of Banks for Development: New Information and Communication Technology and its Impact on the Banking Sector in Lebanon.

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Research on the impact of new information and communication technologies (NICT), and networks in particular, on the banking sector started in the seventies: it has already led to two different improvements in banks. On the one hand, technology supported logistically the internal processing of information and networks within the industry by developing interbank networks. On the other hand, IT-based new systems fastened the access to capital markets, enabled the creation of global electronic markets and modernized stock exchange markets. Today, technology is used to support commercial work at agencies and to develop new distribution channels especially through the use of Internet. However, Internet is not only a new channel of distribution embedded on the pre-existing channels: it influences the evolution of the bank profession and endorses the separation between manufacture and distribution of banking products.

The objective of this research is to show the impact of technological progress on Lebanese commercial banks. Our investigations confirm that new technologies play an important role in the development of the banking industry, strengthening their profitability and improving their productivity. After defining the banking businesses and their evolution (Llewellyn, 2008, 2009, 2010, 2011, 2013; Roux, 2013), we will study the effects of technological change on the functioning of the bank (Webster, 1997; Mizrahi, 2000; Gérard, 2001; Berger, 2003; Casolaro, 2007; Frame, White, 2009). The second part is devoted to empirical validation through which two qualitative questionnaires are analyzed – the first is addressed to the General Management and the Information Technology Management of Lebanese commercial banks, and the second to banks using information technology tools: “front-office” and “back-office” technologies, ATMs, Internet banking, financial derivatives, off-balance sheet credit commitments and other electronic transactions.

The main purpose of this investigation is to analyze first the changes and mutations of the various professions of the bank through technological transition and second to measure technological performance of Banks. Hence, the first questionnaire results show that: i) the desire to develop their sphere of action, for the majority of Lebanese banks, appears to be the first strategic goal of introducing new technologies. In fact, it appears that it is a way for banks to outweigh their competitors; ii) improving productivity is the first benefit resulting from the introduction of new

technologies; iii) the annual rate of growth of spending on information technology is increasing; iv) while technology is a strategic means and an essential tool for the well functioning of the bank, it is not an end in itself. Furthermore and since the aim of the second investigation was to determine the impact of new technologies on the production function, on the distribution function and on the productivity of the bank, the results show that: i) the rapidity and reliability of processing operations are allowed by the introduction of new technologies on the production function; ii) the major effect of the introduction of new technology on the distribution function is the customer satisfaction; iii) overall productivity of the banks is multiplied by two. But this productivity could be better if the number of technical IT problems that occurs in the bank when processing operations or services could be reduced.

Finally, two fundamental questions arise from this research: what could be the future of the banking industry in Lebanon with the predominant invasion of e-banking models? And taking into account the efficiency of this sector, would it be easy to move to virtual banking models? We cannot answer within the framework of this paper these questions, but it is evident that with the New Technologies of Information and Communication, Lebanese banks will always develop and no one today could describe with certainty the shape of the possible changes.

Keywords: *Technology, Internet Banking, the Banking Industry, Banking Business Evolution, Questionnaire, Performance.*

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Systemic Risk and Banking Regulation: Some Facts on the New Regulatory Framework

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The outbreak of financial systems in 2007 underlined the weaknesses of international regulations concerning banking risk supervision. In particular, past regulation on capital requirements was focused on a micro prudential approach where bank was assessed on the basis of its own portfolio and its own risk, while regulatory capital had to be large enough to face bank's risk level. Conversely, the collapse of financial systems stressed the importance of measuring the risk contribution of each bank to the financial stability, thus suggesting to replace the classical principle “too big to fail” into a “too interconnected to fail” perspective (see for instance Bastos et al. (2009) and Strahan (2013)).

The banking sector represents a cornerstone in the analysis of systemic risk due to its important role in the propagation of shocks to global markets and wider economy. As emphasized by the current crisis, bank failures weaken the financial system and spread financial distress. Institutions whose bankrupt may trigger the default of other banks need more rigorous supervision by regulators and should in principle fulfill higher levels of capital requirements. The need to set up an effective systemic risk monitoring motivates the new Basel 3 framework, along with the ESMA-EMIR related regulation. Nevertheless, a huge debate over systemic risk measurement methodologies, capital requirements and effectiveness of the rules is taking place in the banking and academic community.

Although systemic risk has been largely studied in recent times, literature is still trying to propose a widely diffused quantitative definition. In particular, the effective application of any systemic risk indicator requires that its qualitative notion should be clearly set forth. Therefore, its definition should be widely accepted by the financial community and implemented in the effective risk management practices. This leads to a huge literature concerning the identification of the key features of financial stability useful to disentangle bank's systemic risk contribution.

Furthermore, in the international debate the word resilience of a banking system had been largely scrutinized. What happens to the remaining institutions of the system when a large bank fails? This question leads naturally to a Loss Given Default approach. Hence, the systemic features of a bank are related to the losses that it can cause by some contagion mechanism determined by its default. Therefore, by introducing new capital constraints the banking system should be more resilient to such a shock, thus limiting contagion to spread throughout the system. This in turns leads to the investigation of which structures are more prone to spread financial distress. Literature usually indicates two potential candidates: a network with a small number of large banks with a "hub & spoke" topology or a network with a large number of small banks and a more uniform distribution of exposures.

These issues and many others cannot be managed, or at best may receive a partial answer in the current state of the art. In fact, the lack of a complete data set regarding bilateral exposures does not allow an accurate and granular description of the network. In particular, at a local level practitioners can exploit their peer-to-peer links of all available bilateral data, while the scientific community can typically use the aggregate global statistics and some partial network information in order to investigate the network features and/or behaviours. Hence, the introduction of new regulations, such as the European Market Infrastructure Regulation (EMIR) and the Trade Repository implemented by the European Securities and Markets Authority (ESMA) in 2014, could give new relevant insights on the network structure.

Despite the hardness of this field, the paper aims to give an up to date overview of the systemic risk definitions, trying to build a bridge between academy, supervisors and practitioners perspectives. We show how the various types of actors involved in the debate stress different aspects, giving greater emphasis to some features rather than others. In particular, in this section we attempt to bring out the common points proposed in literature in order to identify a level playing field.

In addition, we analyze the impact of new regulations on the structure of the system. Basically, due to the lack of information and the difficulty to match information, often related to cross-jurisdiction situations, it is quite difficult to measure the amount and type of bilateral exposures, netting agreements, and collateral positions between two counterparties. Therefore, regulators are defining a new way to solve the issue of scarce availability of data. In particular, we present the pillars that compose the EMIR, providing details on the effective banking sector practices. This section addresses systemic risk from several points of view. Firstly, we describe the rules concerning the provision of data and the implementation of the trade repository; secondly, we focus on how banking sector activities are affected by the new requirements imposed by the recent regulatory framework; finally, we analyze how the structure of the financial system might change due to the incentive to introduce robust central counterparties in order to clear derivatives.

Keywords: Systemic Risk; Banking Regulation: New Regulatory Framework

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First Exploration of Rationality in Rating Agencies – the Case Study of Bond

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The world has suffered from a recession since the collapse of several gigantic investment banks in 2008, which made countless investors worldwide lose a huge amount of money. After this trauma of financial crisis, people from all walks of life have been thinking and discussing why all of this happened. Investors also criticized some mechanisms which they used to believe deeply, for example, the rating agency.

According to the BBC news dated Apr. 23, 2010, “The behaviour of two credit rating agencies in the run-up to the financial crisis has been criticised by US senators following an investigation.” In this news, Moody’s and Standard & Poor’s, the biggest two rating agencies, were claimed by the U.S. Senate committee to instill “unwarranted high confidence” in some risky financial products. A testimony was held later. Similar stories have not stopped till now. The news “U.S. sues S&P over subprime rating” was reported in 2013 and Standard & Poor’s was facing the lawsuit from the Justice Department of the U.S. over its inaccurate rating of investments which partly led to the financial crisis. Seemingly it is very hard for these rating agencies to be trusted by investors ever since the financial crisis. Yet, it might be just one side of the story.

In fact, it can be seen in the real life that rating agencies are severely criticized but highly valued at the same time. The lawsuit against rating agencies is still going on; however, the public never stops deriving information from them, which can be discerned from the mass media every day. Moreover, in spite of being private enterprises, rating agencies even rate the country under which sovereign they were established. They remain dominant even though being complained by investors about some inaccurate information.

Why are the rating agencies so dominant? Why are the investors obliged to rely on them while complaining about their somehow inaccurate information? Why does the economically strong country also succumb to these private enterprises? How can the influence go beyond the borders? The paper is aimed to explore the domination of the rating agencies from the perspective of Max Weber and the research method is critical analysis. Weber suggested that there are three types of inner justifications as the basic legitimations of domination: traditional domination, charismatic domination and rational-legal domination. In this paper, the domination of rating agencies will be analyzed in terms of traditional and legal-rational domination. The bond market is taken as a case study to explore the domination of the rating agencies including Standard & Poor’s, Moody’s, and Fitch.

Based on the arguments of Max Weber, the purpose of this study is not to claim whether the rating results from the rating agencies are correct or not since it mostly lies in investors’ expectation about the rating agencies. Rather, this paper is aimed at exploring how the rating

agencies as an institution were formed from a historical perspective and how they became dominant in the financial market with their rationality or rationalization. Since the rating agencies have played an irreplaceable role in the modern financial market, it is more meaningful to realize and grasp them with rationality before blaming or criticizing them for any loss in the investment. It is expected from the research that investors can get access to the rating agencies with historical understanding and rational judgment. In addition, the trust of investors on the rating agencies can be won back. Thus, the rating agencies can become not only transparent but also beneficial for investors.

Keywords: *rationality, rating agencies, bond, financial crisis, domination.*

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Financial effectiveness of the EU banks in the period 2007-2013

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The paper will present an analysis of financial effectiveness of entities operating in the banking sector of the EU member states in the period 2007-2013. The paper will be composed of four chapters. The first of them will present the issues of financial effectiveness and its significance for the position of the banking sector with particular emphasis on entities pursuing their business activities in the European Union.

Chapter two will be dedicated to a detailed presentation of selected effectiveness ratios. This chapter will present average values of ratios, median, standard deviation, variance, which will be determined in the course of research, variability of ratios will be specified and a typical range of variability in the analysed period of 2007-2013 will be determined for the examined bank sample. In the third part of the paper, comparative analyses of values determined for the examined bank sample will be presented. The analyses will be performed by individual countries as well as by Eurozone countries and non-Eurozone countries.

Chapter four will be a summary of the paper. It will include conclusions from the conducted analyses and findings of the authors of the paper about effectiveness of banking sectors in the period 2007-2013 in individual EU member states.

Stable operation and safe development of the financial market are particularly important from the viewpoint of economic development of not only individual countries but also the entire European Union. The 2007–2009 destabilisation of the financial system, which arose from the loss of financial liquidity by certain banks, resulted in a considerable reduction of economic growth not only in the European Union but also in the whole world.

The financial crisis we faced and its repercussions, which have still been affecting the EU and global economy, showed that the financial system requires both global and local recovery measures to be taken. The research the results of which are presented in the paper become in a way an inseparable part of the financial system recovery measures. This is because monitoring financial effectiveness of individual national banking sectors and the entire EU banking sector, in particular in the context of the Banking Union under establishment, might constitute a component of a more complex sector risk identification system at the micro- and macro-level. It needs to be also borne in mind that the greater the capability of financial and credit institutions to identify various types of risks in the banking sector, the more effective its control.

Currently, one of the most popular methods of analysing the financial position of a bank is the ratio analysis (Kochaniak, 2010). Its basis is the amounts disclosed by banks in financial statements. The ratio analysis provides a range of significant information about the bank's standing, which – when skilfully used among others for effectiveness assessment – might enable recovery measures to be taken sufficiently earlier, owing to which negative consequences of “*spoiling the market and the economy by a bank*” can be prevented.

The following groups of ratios, which are significant from the viewpoint of the financial position of a bank, can be distinguished according to the relevant literature: profitability, margin, charges on the financial results and effectiveness of employment (Kochaniak, 2010). According to another literature item (Iwanicz-Drozdowska, 1999), effectiveness, liquidity and solvency, stock market and assets quality ratios are enumerated as groups of financial ratios that allow a proper reflection of the financial position of a bank.

Therefore, the presented paper focuses on the ratios used for assessing financial effectiveness of banking sector entities. Values of individual ratios are analysed from the viewpoint of:

- the group of the examined banks – which permitted assessment of the selected banks against the group, e.g. German banks, Polish banks,
- time – the analysis covered the period from 2007 to 2013, which allowed assessment of the changes in effectiveness of activities pursued by individual banks, groups of banks and the community of banks, which occur over time.

Based on the relevant literature, taking availability of separate data in the Bank scope database into account, the ratios used for examining financial effectiveness of EU banks in the period 2007-2013 in the presented research are: ROAE, ROAA, Capital to Income, interest margin. Their values for the analysed community divided into ratios for individual countries, the Eurozone, the EU member states, and non-Eurozone countries in individual analysed periods are presented in chapter two of the paper.

Their economic interpretation will be made in the paper with reference to individual values of the analysed ratios based on the relevant literature as well as knowledge and analytical skills of the authors of the paper.

As regards interest margin, the fact that interest margin is a the ratio of interest result to the bank asset value is allowed for in the research. The value of interest result is determined as a difference between interest revenue and interest costs. It needs to be also indicated that in certain relevant literature items interest margin is the value of the interest result referred solely to the value of interest assets. Both methods of calculating interest margin are applied in the banking practice. However, the latter approach seems to be more reasonable. Interest result is an item in the profit and loss account and refers to a given accounting year. Interest assets are calculated based on the data obtained from the balance sheet of a bank. Thus, their balance ought to be indicated as an average value (Orechwa-Maliszewska, WorobieJ, 2008). Interest assets include items presented in balance sheet assets, in groups II-VII, respectively. Additionally, it is possible to disaggregate the ratio by the subject matter criterion, which enables differentiating between interest margin and entities, such as financial, non-financial and budget sector ones. The value of the interest margin ratio has no model level but, similarly to e.g. ROAA and ROAE, it should be as high as possible (Kałużny, 2012). The economic interpretation of the ratio illustrates how many groszy of interest result were generated by one zloty of the assets used by the bank on average.

ROAA – Return on Average Assets and ROAE – Return on Average Equity can be mentioned among bank profitability ratios that were taken into account in the examination of effectiveness

of the EU banking sector. Another significant ratio analysed in the context of bank effectiveness is Return on Average Equity (ROAE), which enables assessment of the bank's capacity to increase equity.

It should be indicated here that the scope of recognising individual components of the bank's capital as part of equity is a conventional issue. It normally includes share capital together with items charged, supplementary and reserve capital, revaluation reserve, as well as profit or loss from previous years. Furthermore, it needs to be pointed to the fact that return on equity and return on assets form the following relations between them (Kochaniak, 2010):

- $ROAE > ROAA$ – effective use of equity,
- $ROAE = ROAA$ – means the same profitability of equity and assets,
- $ROAE < ROAA$ – liability costs are higher than the earned revenue in respect of their investment.

The values of both ROAE and ROAA ratios have no model level but they should be as high as possible and be comparable to the values achieved by similar banks (Kałużny, 2012). Moreover, the correlation between the above ratios is the first stage in the DuPont analysis based on ratio decomposition, where return on equity and risk are treated as factors shaping the bank's performance (Capiga, 2011).

Additionally, the level of costs is also an important matter in profitability analyses. In this case, both the share of operating costs in total revenue and relations of operating costs to the banking performance are discussed (Capiga, 2011). In the first variant, it is the cost ratio, the growth of which is unbeneficial. In the second case, operating costs ratio is in question, that is C/I, which determines cost effectiveness which is, in turn, affected by the level of banking performance. Hence, the C/I ratio will be used in banking sector analyses by entities pursuing activities on European financial markets.

The values of individual ratios for the analysed banks and groups of banks in the assumed period of 2007-2013, together with the determined average values, median, ratio variability etc., will serve the purpose of not only making appropriate interpretations of the obtained results but also predicting behaviour of the banks from the analysed group in the nearest future. The aim of the presented paper is to answer not only the question whether the EU banking sector was and still is effective but also the question if it has a chance to be effective in the future. The presented research is a part of the research aimed at examining liquidity and effectiveness of the EU banking sector against its present and future financial stability and potential threats to the Banking Union.

Keywords: *Financial effectiveness; EU banks; 2007-2013*

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The Effects of Corporate Governance on Bank Financial Performance: Evidence from the Arabian Peninsula

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Whereas banks operate under different management, board of directors, ownership structures, and government regulations, there is no specific optimal corporate governance model that may be applied to all banks. This study investigates the effect of internal corporate governance mechanisms such as board structure, ownership structure, and audit function; and control variables such as bank size and bank age on bank financial performance. The sample of the study comprises of both conventional and Islamic banks operating in the seven Arabian Peninsula countries, namely Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, United Arab Emirates, and Yemen. Regression analysis (OLS) is used to test the aforementioned effect. The results of this study reveal that there is a significant relationship between corporate governance and bank profitability. Board meetings and bank age have positive and significant effects on ROE. Meanwhile, board independence and bank size have negative and significant effects on ROA. In addition, while bank age and board committees have positive effects on Profit Margin, ownership concentration has a negative effect on this profitability measure. These results are consistent with previous literature that the correlation between corporate governance and bank performance is still not clearly established and that impact of corporate governance on bank financial performance in developing countries is still relatively limited.

Keywords: corporate governance, bank performance, board structure, ownership structure, audit function, profitability, Yemen, GCC countries.

Private pension plans in Poland - possibilities and social awareness

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Financial planning is a process which enables people to optimally use possessed financial resources for the purposes of realizing and achieving life goals. Financial planning involves managing your own money which leads to freedom and financial independence. Financial planning aims to protect life, health and property, to enhance wealth in order to carry out a financial plan of an individual customer. The most important financial goals that must be achieved by a household comprise:

1. pension- securing a level of life after retiring,
2. a flat/house- securing one's own place of living,
3. securing the future of children,
4. wealth- gathering property.

Realization of the pension goal is one of the most important goals of a household. It is partially realized through a state system within a social security system functioning in a particular country. A social security system is an essential element of a modern state. It guarantees payments to non-working people who cannot make a living any more. Social insurance comprises:

- pensions insurance,
- disability pensions insurance,
- sickness and maternity insurance,
- insurance against workplace accidents and vocational diseases (Ustawa z dnia 13 października 1998).

The system of old-age pension insurance is one of the elements of the social insurance system. There are two types of pension systems in the world: a pay-as-you-go system and a capital system (www.tf.com.pl). In the pay-as-you-go system contributions paid in a particular year finance benefits to be paid out the same year. The problem about such a system is that revenues and expenditures have to balance.

The revenue of the pay-as you-go system depends on:

1. regulations defining an obligatory membership to the system,
2. the number of entitled people (population, the employed, the unemployed)

3. the level of remunerations of the employed,
4. the way and the amount of the pension contribution (the rate of the contribution, non-contribution periods, reliefs),
5. an ability of the system to collect contributions.

The expenditure of the pay-as-you-go system depends on:

1. The number of entitled persons and
 - regulations defining who is entitled to receive a pension,
 - the pension age,
 - average life expectancy.
2. The way of calculating the amount of pension (the basis, the calculation rate, limits, defined benefits),
3. Costs of the system.

Balancing the system to a larger extent depends on the correct design of a technical account, the system's ability to collect contributions, to establish and manage reserves. The technical account considering the amount of a contribution, costs of the system, periods for paying contributions, the pension age, average life expectancy and macro-economic factors must secure a balance between system's liabilities related to paying benefits and its receivables related to collecting contributions. The system must possess built-in guarantees of receiving contributions; reserves must take into account incomplete compliance of the technical account to the reality resulting from unpredictability of events (Hadyaniak, Monkiewicz, 1999)

A basic disadvantage of the pay-as-you-go system consists in huge sensitivity to the ageing process of the society and unemployment: both phenomena lead to greater burdens of working people (who have to pay higher contributions). Moreover, the fact that the system is quite dependent on political pressure is also disadvantageous. However, an advantage is that it is not so sensitive to crises of financial markets and inflation (www.tf.com.pl)

A capital system is the other pension system functioning in the world. It is of an individual nature – saved money comes from a particular person and is assigned to them. This system is characterised as follows:

1. each insured person gathers contributions on their own accounts in the pension fund that will pay pensions later on,
2. contributions of saving people are invested in financial instruments,
3. the period of saving is long (Hadyaniak, Monkiewicz, 1999)

A high inflation and crises in financial markets constitute the biggest threats to the capital system. The system is resistant to ageing of the society and unemployment constituting major problems of the contemporary world (www.tf.com.pl)

Apart from presented pension systems there are mixed solutions – their advantage is diversification of risk related to a particular method of financing pensions. This is how the basis for a new pension system was built in Poland.

The reform of the pension system implemented on 1st January 1999 aimed to adjust to unfavourable demographic processes (longer life expectancy, a drop in births as well as early retirement) and to speed up economic development of the country.

The previous system with a defined benefit was transformed into a system with a defined contribution. The obligatory part of the system was divided into a financial part and a non-financial part. The pension contribution was divided into two individual accounts.

Since 1st January 1999 salaries of all employees were grossed up i.e. increased by an insurance contribution. This is how the contribution was divided between an employee and an employer. After the reform the system was divided into three pillars.

The system became secure thanks to diversification of risk. A part of the contribution goes to an institution publically manager- a Social Insurance Institution (ZUS) (1st pillar), the other part goes to the 2nd pillar – open pension funds (OFE). In the non-financial part of the system (ZUS) the return rate depends on the economic growth. In periods of a downturn (e.g. high inflation) contributions are subject to valorisation which compensate for losses or a smaller capital growth in open pension funds. As contributions gathered in ZUS are not subject of a high valorisation, funds earn from ups in the stock exchange. Such a system leads to a reduction of risk and enhancement of security of pension resources. The two first pillars are obligatory as opposed to the 3rd one which is a voluntary, additional way of gathering a capital for the future pension. It complements the 1st and 2nd pillar and constitutes an additional insurance and savings.

Forecasts of pension amounts paid out from the obligatory part show that the replacement rate will reach the level of 30-40%. That is why the contemporary world appreciates pension planning. This goal may be realized based on various forms of investing. The paper will present these forms as well as ways proposed by the Polish legislator in the functioning pension system such as Individual Pension Accounts and Individual Account Securing Pension.

The paper aims to present possible ways of gathering pension savings, evaluation of their attractiveness and effectiveness as well as show the problem of social awareness concerning the realization of the discussed financial plan. The realization of the research goal will be supported by the literature study as well as presentation of the results obtained from surveys conducted among households.

Keywords: *Pension planning, additional pension savings, social security system.*

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Potential risks and disclosure: evidence from the Italian listed companies

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Over the years, contemporary companies (Zanda, 2012) have changed their external disclosure according to both the modifications of Italian civil law and the increasing importance of intangible assets that have produced a significant difference between market and book value.

Authors have noted that, in recent years, especially in entities with a high incidence of immateriality, financial statements have become less significant. The phenomenon has increased since the Eighties; previously, in an industrial economy, characterized by the primacy of tangible assets, it was possible to identify a convergence of accounting estimates, as expressed in the financial statement, and market values, expressed by the stock markets. Many researchers have shown that this correspondence has, over the past few years, undergone a contraction (Brown, Lo, Lys, 1999; Jones, 2003; Lev, Zarowin, 1999).

Nowadays, the balance sheets and its disclosure (Albertinazzi, 2002; Bandettini, 1999; Caratozzolo, 2006; Dezzani, Pisoni, Poddu, 2001; Viganò, 2007; Lacchini, 1994; Onida, 1974, Superti Furga, 1991; Zanda, 2007) are completed by the voluntary disclosure of companies with regards to corporate social responsibility, environment and intellectual capital (Bennet, Klinkers, James, 1999; Elkington, 1997; Higgins, 2002).

Therefore, mandatory economic and financial information have been integrated by the civil law with other data regarding company management (Golinelli, 2000). In particular, article 2428 of the Civil Code has been modified within the provisions related to the management report. Introduction of the legislative decree no. 32 in 2007 led to the amendment of Article 2428 of the Civil Code (the body that regulates the preparation of Italian company documents in Italy), which, following the amendment, provides that "the budget must be accompanied by a directors' report containing a true, balanced and comprehensive overview of the company's situation and

the progress and results of management [...], as well as a description of the principal risks and uncertainties to which the company is exposed. The analysis [...] is consistent with the business entity and complexity of the firm's affairs and contains, to the extent necessary for an understanding of the company's situation and the progress and results of management, financial performance indicators and, where appropriate, non-financial information relating to the specific activity of the company, including information relating to the environment and staff".

This modification enhances the disclosure towards corporate social responsibility. In this way, the board of directors have to provide stakeholders with information regarding environmental and human resources on six well defined categories (compulsory and voluntary) of analysis among which risk recognition and data (Consiglio Nazionale dei Dottori Commercialisti e degli Esperti Contabili, 2009).

Management report needs to include information about all kind of companies risks and uncertainties (Bodnar, Consolandi, Gabbi, Jaiswal-Dale, 2013; Bonetti, Mattei, Palmucci, 2012; Elshandidy, Fraser, Hussainey, 2013; Miihkinen, 2013).

Potential risks are, for example, specific and relevant risks of company, risks arising from occupational safety, risks by lawsuit regarding environment losses and eventually its insurance (Campbell, Chen, 2014; Campbell, Slack, 2011).

In this way, the research aims to analyze the information system of companies listed on the Milan stock exchange, according to civil law, by the representation of risks, in order to match sustainable information and financial data.

To this end, our research, carried out on a sample of 50 companies, aims to prove the current method of representing risk related information and the strategic value of the information, included in the annual reports.

In particular, the sample selection is focused on companies listed for the first time in 2008 and under current quotation in 2013. The criteria in the companies' selection from Datastream database is the "sales net" and the "revenue" by including different sectors.

For each company we have not only analyzed the mandatory annual documents but also all corporate documents: annual and consolidated financial statements, management reports and sustainability reports, if available, for the period 2008-2013. We focused our attention on the risk disclosure section to verify the presence, the level and the evolution of this kind of information.

In this direction, initially, on the basis of the existing literature on risks (Beretta, Bozzolan, 2004, 2008; Deumes, 2008; Dobler, Lajili, Zéghal, 2011; Hill, Short, 2009; Linsley, Shrivess, 2006; Miihkinen, 2013) and of the content of companies' documents, we have developed an appropriate coding scheme or "Grid Risk Report (GRR)" that lists broad content categories and different risk factors related to these categories.

Secondly, we matched the words and sentences in the texts of the risk sections with the coding scheme (GRR) and identified for each text whether or not the risk factor was mentioned. An advantage of this manual approach over a computer-aided content analysis is that humans can provide a better opinion of the meaning of words and phrases within a context. One of the disadvantages is that a manual approach is less cost-effective and flexible. In addition, human raters can make mistakes and are prone to researcher bias (Krippendorff, 2004).

Third, we built a risk disclosure scoring system consisting of one or more indicators.

With the perspective of creating a full disclosure on companies' performance, by the representation of tangible and intangible assets, the objective of this paper is to present further suggestions for the balance sheet, the management and other reports and in order to fill information gaps that were found.

Moreover, the empirical research aims at representing the most important indicators used by the companies to make risk disclosure with the perspective to extend the analysis in the international field.

The research approach is based on a qualitative method with the use of secondary sources such as Datastream databases, papers and books (Yin, 1994). Starting from a single method approach (Myers, 2013), the research is developed according to the study of national and international literature.

In this way, the research question is the following: starting from the empirical evidence about risks disclosure, which are the strong and weak points of current regulation? Can the proposition of the "Grid Report Risk" fill the management and the disclosure about companies' risks? What is the GRR and what is its mission?

Keywords: *Risks, potential risks, risk management, disclosure.*

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Cyber fraud incurrence and bank's preparedness in fighting the cyber fraud risk: evidence from Zimbabwe

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The paper looks at the incurrence of cyber fraud in the banking industry in Zimbabwe and how ready is the banking community to tackle the menace. The paper is based on descriptive study which studied 22 banks in Zimbabwe by 2013. Simple descriptive statistics were used to analyze the data and graphical analysis to present the findings. It was found out and concluded that lack of oversight by line managers or senior managers on deviations from existing electronic process/controls, business pressure to meet set targets, a difficult business scenario and collusion between employees and external parties cause fraud cases to rise. Improvements in technologies and cyber awareness to the bank staff and customers and increase in budget allocation and staff can contribute to fraud reduction. It is recommended that there is need of industry wide framework on strong cyber threat governance and legislation and policies with specific emphasis on tackling cyber channel based threat in the financial sector and support of broader organizational compliance and risk management.

Introduction

Cyberspace has proved hard-wearing to attacks, but the fundamental dynamic of the online world has always been that it is easier to assail than to defend. There are reasons to believe that resilience is gradually being undermined, allowing this dynamic of vulnerability to become more impactful in the wake of the "digitization of things" growth (World Economic Forum, 2014). For financial institutions, the free flow of digital information means that the backdoor is potentially always open to loss for instance, Russian cracker Vladimir Levin, siphoned \$10 million from Citibank and transferred the money to bank accounts around the world (Aseef et al, 2005). Electronic-banking fraud is an issue being experienced globally and is continuing to prove costly to both banks and customers (Usman et al, 2013).

The rapid growth of the Internet and digital usage over the past several years has been fueled mainly by the sharing and transferring of vast amounts of information as a result of increased use of the Internet and digital equipment for commercial business transactions, which gives birth to electronic fraud (e-fraud) problems (Akintoye, Araoye, 2011). The increasing use of wireless technologies and infrastructure and of such cyber fraud threats at various stages is because of the explosion of online banking coupled with the acceptance by consumers to disclose sensitive information over internet. The adoption of digital and cyber technologies in the banking industries have attracted cyber fraudsters to perpetrate cyber fraud at a tremendous pace especially in developing and emerging economies. According to Kritzinger and von Solms (2012)

a number of cyber factors have led Africa to becoming a cybercrime hub. In an attempt to maximize the benefits from technology utilization most banking institutions and customers end up being victims of technology. The fraudsters exploit undercapitalized digital technologies and networks in such economies and Zimbabwe has no exemption. The financial turmoil characterized the Zimbabwean economy since 2003 have led to persisting flawed corporate governance practices. The banking industry has failed to adopt enterprise-wide risk management framework to address operational risks such as cyber fraud risk. More so lack of cyber related laws, cyber education and awareness, ineffective legislation and policies, and lack of technical cyber security measures have accelerated the cyber fraud.

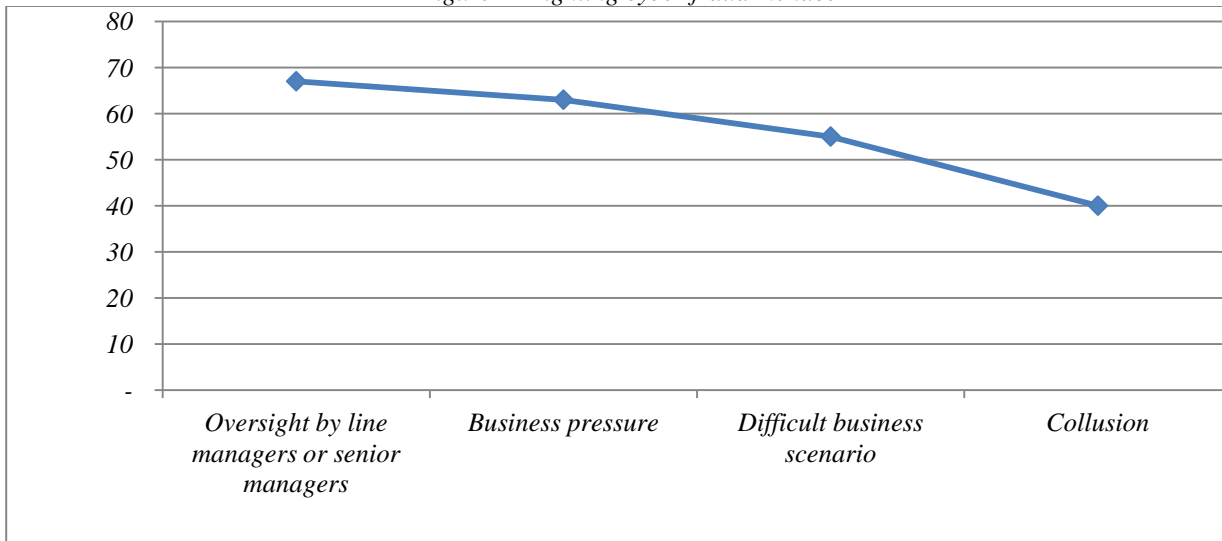
Against this background the paper seeks to observe the occurrence of cyber fraud in the banking industry and how the intricacy can be managed.

Methodology

A descriptive study was conducted within the banking industry in Zimbabwe to describe the cyber fraud phenomena and to provide information about the problem (Plooy-Cilliers, 2014). The researcher used the literature review and the results from the questionnaire and interview survey which was carried out from 22 banks in Zimbabwe by 2013. Purpose and convenience or accidental or availability sampling were used to select the participants that were typical of the study phenomenon and knowledgeable about the question at hand such as Chief Risk Officers, Auditors, CEOs (Kobus et al, 2013; Brink, 2013).

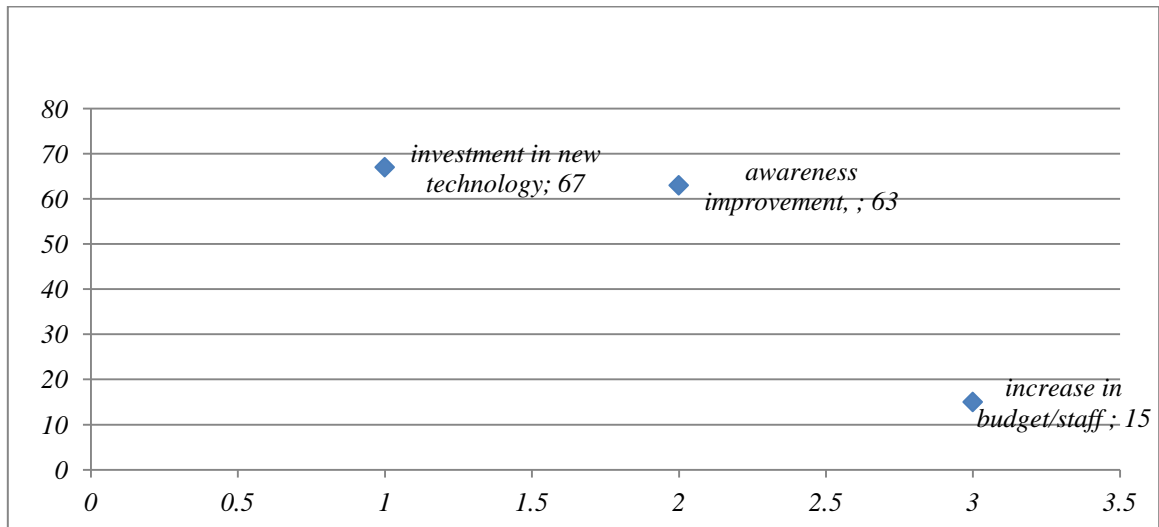
Findings and Discussion:

Figure 1- Fighting cyber fraud menace



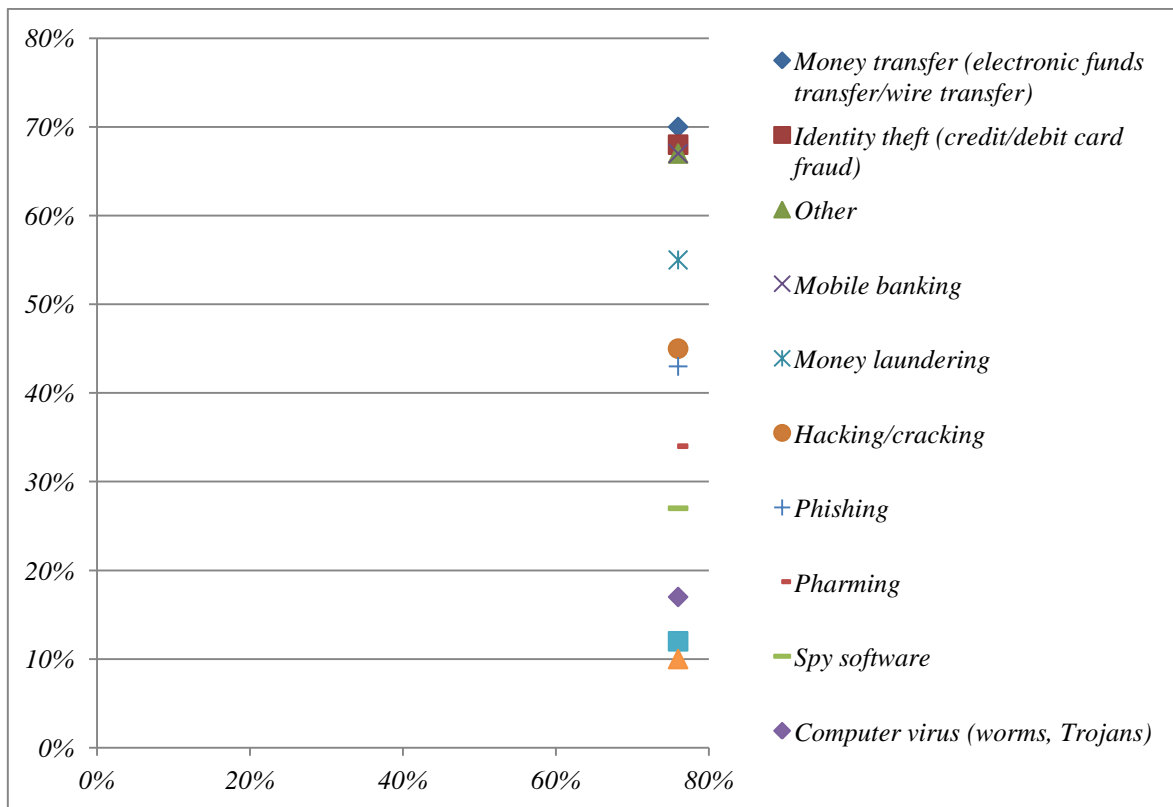
Cyber fraud incurrence and banks' preparedness in fighting the cyber fraud menace is shown by the respondents who cited "lack of oversight by line managers or senior managers on deviations from existing electronic process/controls" as one of the major cause followed by "current business pressure to meet set targets" and "difficult business scenario" as other causes for rising fraud cases. Other respondents revealed that there was collusion between employees and external parties.

Figure 2- Cyber fraud vulnerability reduction



From figure 2, a total of 67% of the respondents indicated that there is a need for investment in new technology. 63% said that there is a need for awareness improvement, 15% of the total respondents revealed that increase in budget/staff should be considered and 8% of the respondents indicated that no new measures are required.

Figure 3- Cyber fraud incurrence by type



It was found that the occurrence of cyber fraud could be classified into two categories namely, direct and indirect frauds. Direct fraud would include credit/debit card fraud, employee embezzlement, and money laundering and salami attack. Indirect fraud would include phishing, pharming, hacking, virus, spam, advance fee and malware. The occurrence of each fraud type perpetrated in the banking showed that, accounting fraud is at the top with highest frequency indicating that the traditional ways of committing fraud are still being used but of late electronically (internal computer fraud), followed by money transfer, identity theft, mobile banking and money laundering forming the top six categories. Other respondents indicated that there are other fraud types such as asset misappropriation, financial statement fraud, bribery and corruption. Also being perpetrated are hacking/cracking, Phishing, Pharming, spy software, computer virus, scams and lastly wiretapping with. The occurrence of the fraud is also divided into institutional related (those which affect directly the bank) and consumer related frauds (those that affect the consumers but ultimately via the banking system).

Intricacies such as lack of resources (detection tools and technologies), inadequate cyber-crime laws and lack of knowledge through education and awareness were found as a difficulty in managing the risk of cyber fraud in the banking industry in Zimbabwe.

Conclusions

It is concluded that lack of oversight by line managers or senior managers on deviations from existing electronic process/controls was one of the major causes of electronic fraud losses, followed by the “current business pressure to meet set targets” and a “difficult business scenario” as other causes of fraud cases to rise. An additional factor was the collusion between employees and external parties who connive either to access systems for account takeover or identity theft. In terms of reduction of cyber fraud reduction it can be concluded that improvements of technologies and cyber awareness to the bank staff and customers can contribute to fraud reduction. Also increase in budget allocation and staff would also give a contribution in reducing the menace.

From the above one can conclude that the most frequently occurring type of fraud is still the “traditional” fraud committed by employees in the banks. Identity theft also constitutes a large percentage of fraud. Other forms of fraud such as spam/scam, phishing, pharming, and money laundry represent a portion that is expected to rise, owing to the ever advancing development of technology.

Recommendations

There is a need to have an industry wide framework on strong cyber threat governance and legislation and policies with specific emphasis on tackling cyber channel based threat in the financial sector.

Support of broader organizational compliance and risk management is needed. The path to this approach includes an IT infrastructure that enables enterprise-wide, real time, and cross-channel monitoring and management capabilities. Bank institutions should work towards developing digital forensic auditors.

Educational and awareness programs on electronic and internet banking need to be steered to alert the users on how to always ensure secure online transactions and cyber traps such as spamming, phishing and pharming. If the afore-mentioned attributes are implemented in unison,

the security strategies implementation will improve from being effective to a much more effective. This would boost the trust of clients and the confidence as well.

Keywords: *cyber-fraud, electronic fraud, electronic banking.*

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POSTERS

Expansion of Social Responsibility in the Business Process Engineering

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Consistency of fundamental values of humanity leads to plurality in religious, cultural, economic, philosophy and moral beliefs and represents bases and outcome of social responsibility of business. Successful business engineering forms social responsibility from social obligation.

Business process engineering is a field of continuous research and innovations. Social responsibility of business is an important component of business process engineering. While many scientists and practitioners (Freeman, Moutchnik, 2013; Visser, Matten, Pohl, Tolhurst, 2008; Sankar, Bhattacharya, Korschun, 2006; Baker, 2008; Fialka, 2006; Carroll, Buchholtz, 2006; Sacconi, 2004; Jastram, 2007; Porter, Kramer; Bulkeley, 2001; Maignan, Ferrell, Tomas, 1999; Friedman, 1970.) are working on these issues, consensus is not achieved yet in a number of areas. The opinion of scientists is still divided between recognizing importance of social responsibility of business and granting compulsory and damageable obligations.

Paper aims to outline logical relationships between business obligations and responsibilities in order to establish a successful business engineering in developing countries. In this study we used methods of logical analysis, scientific abstraction, deduction, induction and statistics.

For satisfying social needs, promotion of entrepreneurial initiative, development and philanthropy is not a direct way for economic profit making. It is performed with the aim of self-fulfillment and implementation of obligations. At the same time, sustainable economic development is impossible without social responsibility of business. Business engineering process must take into account social responsibility borders in which economic agents carry out development of social, economic and environmental spheres. It should be also noted that in many cases this activity is beyond the scope of already defined framework conditions. In the developing countries, social responsibility of business is an accompanying process of companies' operation in all aspects. It appears from the stage of the development of company's mission and later in all components of exogenous and endogenous spheres in varying degrees. In developing countries, it is clear that such voluntary activity is rarely observed and usually it is found mainly in philanthropic nature. By the initiative of Georgian non-governmental organization „Union of People with Different Abilities”, research project was conducted where managers of large companies (100 companies) interviewed. The study revealed the following trends:

- In entrepreneurs with traditional setting dominates personal wellbeing motives;
- 27% of respondents reported that they have the necessary infrastructure to adapt people with disabilities at work, 18% reported that they do not have such conditions, while 55% of respondents do not know if there is such a possibility;

- 56% of respondents are not aware about the existence of capabilities for adapted to the environment for people with disabilities, 33% of respondents are aware of the existence of such capabilities, while 11% of respondents denied the necessity of existence of capabilities;
- 86% of respondents express readiness to give disabled people adapted to the environment, if the state has a partial or full financial support and cooperation.

The empirical results are similar to those based on data obtained from studies in post-Soviet countries (the program was implemented by the financial support of the U.S. -Agency for International Development USAID). In general, survey results from post-soviet countries has shown that the majority of businessmen want to carry out social responsibility at state expense (government subsidies, tax breaks, preferential public procurement decisions and others). Obviously this situation is due to the following issues:

- Low level of economic development;
- The absence of a stable economic interest groups;
- The role of inertia assigning excessive priority to the state;
- Partial recognition of the requirements of a market economy by the society's value system.

Despite the reasons for the existence of such an approach, it is unacceptable because it leads to initiate corruption schemes and make it more difficult to fight against it. In terms of rational economic policy developing countries must focus from the benefit and subsidy methods to the development of obligations. Only directive decisions, propaganda and social advertising introduced by the state, can establish business engineering and correct perception of social responsibility in the society.

Based on the structural scheme of business engineering scope, it is expected to define the elements of social responsibility and their involvement in a variety of fields.

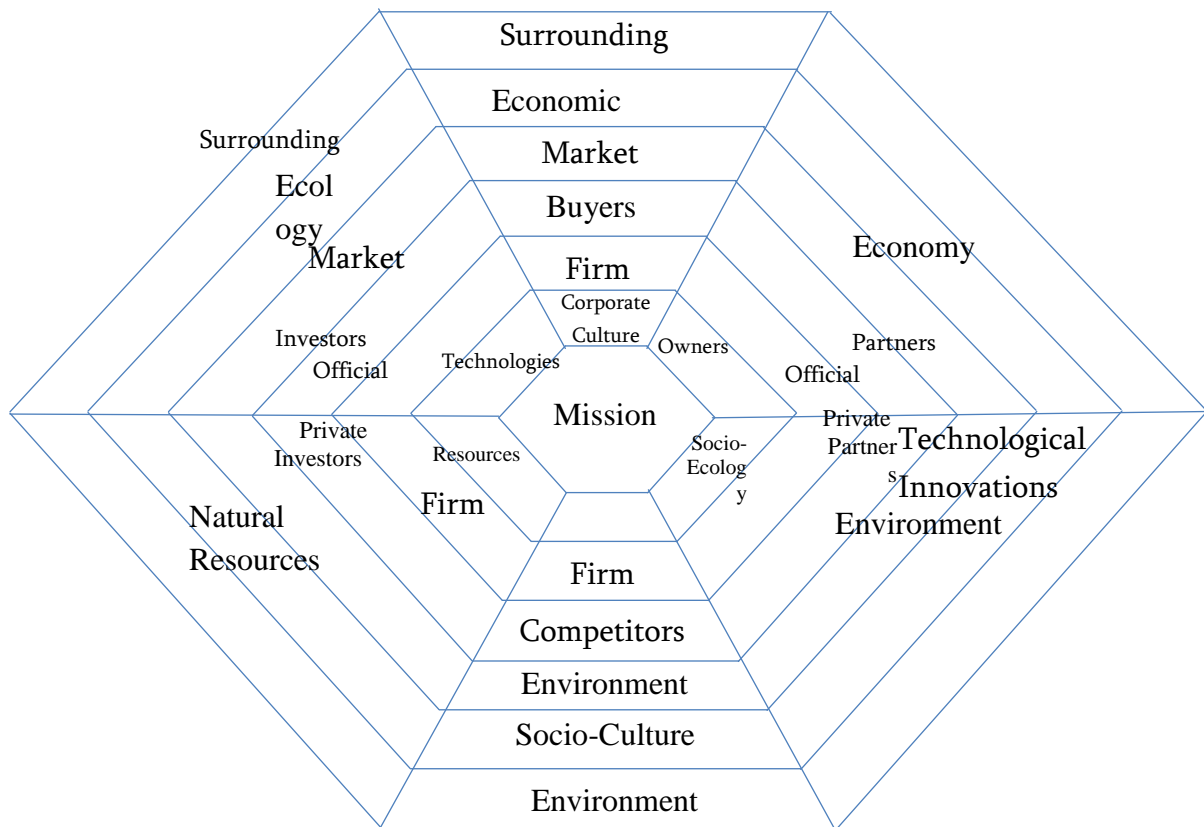
Involvement of elements of social responsibility in exogenous and endogenous factors influencing firm's business engineering can be structured as follow:

Firm's external key limitations and opportunities:

- Economics - 6.3.9; 6.3.10; 6.5.4; 6.6.3; 6.6.5; 6.6.6; 6.6.7; 6.7.5; 6.8.5; 6.8.6; 6.8.7;
- Technological innovations - 6.3.3; 6.7.5; 6.8.6; 6.8.8;
- Economic policy - 6.3.4; 6.3.5; 6.3.7; 6.3.8; 6.3.9; 6.4.3; 6.6.3; 6.6.6;
- Socio-cultural - 6.3.3; 6.3.7; 6.3.8; 6.4.5; 6.6.6; 6.6.7;
- Natural resources - 6.3.3; 6.5.4; 6.5.5; 6.5.6; 6.6.7;
- Ecology - 6.5.3; 6.5.4; 6.5.5; 6.5.6.
- Firm's internal key limitations and opportunities:
- Strategic competitive advantages (what the firm can do well in comparison with competitors) - 6.7.3; 6.7.4; 6.7.6; 6.7.8; 6.7.9; 6.8.3;
- Firm's key technologies (managerial, operational, information, computer and etc.) - 6.4.3; 6.4.5; 6.7.3; 6.8.6;
- Firm's key resources (assets - both physical and financial capital, personnel - human capital, knowledge - information (virtual) Capital) - 6.4.3; 6.4.4; 6.4.6; 6.8.4; 6.8.5; 6.8.6; 6.8.8; 6.8.9;
- Firm's corporate culture (formal and informal) - 6.3.6; 6.6.5;
- Firm's owners - 6.3.10; 6.4.5; 6.6.3; 6.6.7; 6.7.5; 6.7.7; 6.8.9;
- Firm's socio-ecology - 6.5.5; 6.5.6; 6.8.4.

In this scheme of business process engineering possible involvement (installation) of social responsibility tools (provide as a digital code) is based on the recommendations of international standard ISO26000: 2010 and standard IC CSR-08260008000 approved in April 1, 2011. These standards have to become a target example which will be driving force for a series of changes during the transition period of implementing Deep and Comprehensive Free Trade Area Agreement (DCFTA) between Georgian and EU.

Figure 1.



Keywords: *Social Responsibility; Business Process Engineering*

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Simulation model of labor force in the manufacturing company based on System Dynamics

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The main objective of the article is to present the following steps of the constructing the LABOR FORCE simulation model in the System Dynamics approach. The research questions are, as follows:

1. Can we use System Dynamics method to build a simulation model of the labor force in the manufacturing company?
2. What about following steps of building that type of model?
3. What about validation process of the constructed model?

The simulation model of the labor force that can be applied to the simulation of the volume of employment in a manufacturing company is the main finding of the study.

The investigations that were used to construct the model, were conducted in three manufacturing companies in Poland. The study included observations of subsequent actions determining the appropriate level of employment, in-depth interviews with the management of the companies and the study of their source materials. Therefore, the model was based on empirical research.

Profiles of the companies are as follows. NajlepszeFoto.pl. was the first company. The company is a medium-sized enterprise. It makes products associated with photography, for example photo albums, photo books or photo calendars. The company has operated in the photo market for over a dozen years. It cooperates, among others, with Kodak corporation. The study focused on determining the size of the labor force for production of photo books. The production takes place according to specific orders only.

The investigations were also conducted in the Zelgraf company. It represents sector the small enterprises. The company has produced since 1996. It produces professional silicone dies and steel dies for printing, used for decorative glass and plastics marking. The research was focused on determining the size of the workforce to manufacture silicone stamps (or silicone dies), which make it possible to mark a product on any surface and curvature. As in NajlepszeFoto.pl, the production in Zelgraf takes place according to specific orders only.

The Alpha company is the third company, in which the studies were carried out. It is a medium-size clothing company based in the Subcarpathian (Podkarpackie Province). It sews smart,

evening trousers for men for the Polish and overseas markets. The production is based on repetition.

The methodology of the construction of the simulation model was as follows. First, variables of the mental model connected with labor force were designated and defined. There were variables such as, for example Total demand for labor, Average worker productivity, New employees, Experienced staff, Hiring rate, Departure rate and Percentage of additional workers. The impact of variables on each other was analysed and a diagram of cause - effect relationship was constructed. At this stage, no distinction between physical flows and information flows were made. During the construction of the diagram, the types of feedback between the variables were determined. They informed about the dynamics occurring in the system of the labor force.

Then, the cause - effect diagram was transformed into a simulation model of LABOR FORCE. Mental model variables were presented as variables and mathematical constants. The coefficients required were added. Accumulation variables and flow variables were indicated and the mathematical relationships occurring between all variables were defined. The model was built using the Vensim DSS software. The mathematical apparatus was presented using functions and mathematical expressions available in that software.

After that, the validation of the constructed model was performed. The validation was conducted by means of the following methods:

- assessing the correctness of the boundary of modeling, adequacy of the model structure and adopted values compared with available knowledge about modelled system,
- test of accuracy and consistency of the units of variables adopted in the model,
- comparison of the simulation values of variables with historical (empirical) values,
- test of the model behavior in the extreme conditions.

The above methods have confirmed the correctness of the model.

Finally, the employment level in response to the assumed size of the order for production for all three companies was simulated. Real and empirical data was used. Simulation results were presented in graphs as well as their analysis and evaluation were made.

The article ends with summary and indicates the directions for the use of the constructed model.

Keywords: *Simulation model; labor force; manufacturing company; System Dynamics.*

Cybernetics of Value Co-creation

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Research questions and aims of the study

The paradigm shift from value creation to value "co-creation" calls for a deeper grasp of organizational learning in marketing theory. This paper adopts a cybernetic view of the process of value co-creation to shed light on its relevant aspects and to supply a framework to implement operations and strategies to foster this process. Can cybernetics help to better understand the process of value co-creation? *Can the Viable System Model (Beer, 1979) be a sound approach to shape a more effective value co-creation process able to achieve higher satisfaction and value?*

In this theoretical paper we will show how cybernetic can be effectively used to give a positive answer to both questions above.

To this aim, after describing the issue, we apply a comprehensive systemic approach to:

- Offer a theoretical framework for value co-creation grounded in second-order cybernetics.
- Depict value co-creation as a dynamic process through a series of cybernetic loops of interaction. In this perspective the product is considered as a stable recurrent outcome or eigenform (Miles, 2007, von Foerster, 1981a-d) deriving from an on-going dynamic seeking satisfactory complexity management in the co-creation process.
- Shed light in how consumers and producers can engage in increasingly effective co-creation processes.
- Supply, through the method of variety balances, a framework to manage and improve the quality of co-creation processes and to explore effective ways to foster collaborative strategies. This implies modelling co-creation relationships as homeostatic loops underpinned by amplifiers, attenuators and transducers of complexity.
- Clarify the recursive cognitive and behavioural nature of these loops to support and improve the necessary dynamic stability between enterprises and consumers.

Theoretical framework

The paradigm shift from value creation to value "co-creation" has gradually developed as a marketing concept in parallel with the development and diffusion of digital technologies and a deeper grasp of organizational learning in marketing theory since the beginning of the new millennium. As anticipated by Toffler (1980) more than 3 decades ago, the increasingly

empowered relational capabilities of individual consumers, as made possible today by advancements of digital technologies, have generated a shift in the concept of value creation. Indeed, the old logic of marketing based on the production/supply of goods to a target has become obsolete and ineffective to depict and understand effective processes of value creation (Dominici, 2009; Zuboff & Maxmin, 2002). The field of "Service Dominant Logic" (Vargo & Lusch, 2004 and 2008; Lusch & Vargo, 2014) emerged and value co-creation assumed a key relevance in the marketing literature (Grönroos 2006 and 2008; Woodruff & Flint, 2006; Kalaiganam & Varadarajan, 2006) highlighting the processes by which both consumers and producers interact and participate in the process of creation/production of value (Bendapudi & Leone, 2003; Etgar, 2008). The above mentioned shift means that the consumer is increasingly an active participant and not a mere target that passively receives the producer's stimuli (in terms of offerings and communication). Together consumers and producers, or prosumers, can create an active system of shared meanings through recurrent communications. Consumers' empowerment is challenging the old deterministic and reductionist marketing models (Dominici, 2012; Dominici et al, 2013).

The "co-created" value depends on how prosumers together create the market offerings (Pongsakornrungsilp & Schroeder, 2011) as symbolic meanings of the co-created experience of consumption (Firat & Dholakia, 2006; Firat et al. 1993). Value is, indeed, a complex adimensional experience which assumes different connotations depending on time and context (Holbrook, 2006). This Künian shift goes to the core of the market economy. The most relevant shift is that from an uncontroversial "thing" to that of reality grounded meanings produced by recurrent communication "processes". More than "what" is produced (its physical attributes supplying a "value in use") the focus is on "how" co-created meanings are shared in dynamic communication processes. It is not either the product that creates the symbolic image of itself or a market image that creates the product; it is the potentials of a product, with all its inherent constraints, that are catapulted by producers and consumers communications. Innovation and creativity are grounded in symbolic embodied production reality. Therefore the product is the **crystallization of value in co-creation processes**, or in cybernetics terms, in what may be called structural couplings (Maturana, 2002) and "eigenform" as described in the next section (von Foerster 1981a-d; Kauffman, 2005) .

The above mentioned paradigm shift in marketing was predated by about two decades or more by cybernetics. The epistemology of the so called "first order" cybernetics of the 1940s (Wiener 1948) changed from the 1960s onwards in the direction of what today we call "second order" cybernetics, or Cybernetics of cybernetics,(von Foerster, 1974 and 1981a-d, Maturana, 2002). Von Foerster (1974) discerned between the cybernetics of observed systems and the cybernetics of observing systems (2nd order cybernetics). First order cybernetics gave preeminence to observers observing black boxes out there as "real" things whose existence was independent of the observer. Second order cybernetics put the observer inside the black box as a reflexive observer, contributing to producing as well as being produced by the black box's outcomes. Objects of observation are not anymore conceived as "things out there" but as self-constructed and self-referential systems that "we name them and by doing this we are bringing them into existence" (Espejo & Reyes, 2011: 4). This change represented a shift from the "modern" perspective of the detached observer to the recognition of the observer among the constituents that construct reality (Krippendorff, 1996). As the anthropologist and social scientists Gregory Bateson (1972, 1979) pointed out, individuals always take part in the circularity of the world,

through a reflexive turn that interactively constructs a "reality" (Krippendorff, 2008). This epistemological emphasis "favors the construction of realities that preserve the circularities of participation in networks of conversation" (Krippendorff, 2008: 182). In this framework, we can see the value co-creation as a process through which the human constituents of the value system coordinate themselves in the creation of symbols and artifacts that become part and at the same time modify the relational systems which create them.

In the above epistemology a "product" is the crystallization of value in a co-creation process between producer and consumer, which can be conceived as what von Foerster (1981a-d) called an "eigenform". Therefore the "product" is an embodied token underpinned by processes of value creation, which co-create, through recurrent producer-consumer relations a stable form. In other words for processes of co-construction it is more accurate to say that "the map is the territory" rather than the famous expression of Alfred Korzybski "the map is not the territory". In value co-creation producers and consumers are structurally coupled or in Maturana's and Varela's terms "*we speak of structural coupling whenever there is a history of recurrent interactions leading to the structural congruence between two (or more) systems.*" (1992: 75). By "structural coupling" of organizational actors, in cybernetics terms we mean their structural adjustments in a history of recurrent interactions. Recurrent two-way interactions between producers and consumers are increasingly feasible and common in the digital economy. Whenever this is the case the outcome of these recurrent interactions can be shared meanings for products; together prosumers can be co-creating innovative, symbolic meanings. From the perspective of the producer, accepting that it is an operationally closed autonomous system that is able to develop a capacity to create, regulate and produce social meanings (Espejo and Reyes, 2011), inputs and outputs produce two principal feedback loops; one is the external feedback or market disturbances and the other is, as an active observer of its own states, the producer's internal computing of self-reflective states (Soros 2009).

These recurrent feedbacks trigger operational adjustments or structural coupling of the producer with its market. Behavioural outcomes are congruence between them. Each, producers and consumers as an outcome of these recurrent interactions, reach stable positions or eigen behaviours. This is a process of value co-creation underpinned by the producers and consumers learning (Espejo, 2000). Sustained recurrence may trigger new *eigen forms*; their relationship may be a system in its own right.

In highly effective communication set ups a product is an eigenform which means an embodied symbolic entity, participating in a network of interactions, assuming its wholeness from the producer's structural capabilities and constraints. Products as embodied eigenforms are the outcome of congruent eigen-behaviors between the consumer and the producer, in the process of co-creating a reflective objectivity. It is this stability of the process that constructs the symbolic value of the product. Therefore the product is not a separate object; objects are recursively constructed objects in language. Perceiver and the perceived arise together in the discourse of value creation.

Though value co-creation is a manifestation of productive relationships and eigen-behaviors, its scope is constrained by production and communication capabilities. In cybernetic terms we talk about negative explanations driven by requisite variety. "Variety" is the number of possible states of a system, which can proliferate to very large numbers. Requisite variety (Ashby, 1964) tells us that the variety of producers' outcomes is larger (or equal) than the ratio between the consumers' disturbances and producers responses (Espejo and Howard, 1982) and that if necessary outcomes

to achieve eigen values is smaller than that ratio, stability between producers and consumers will not emerge; their relationship will not have requisite variety.

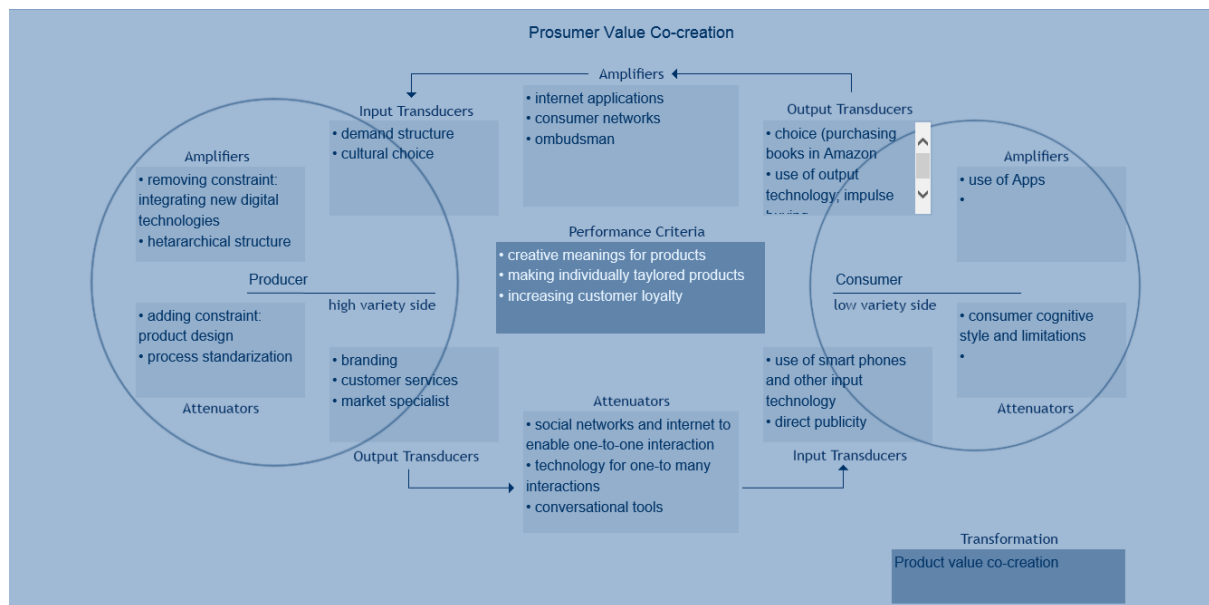
The Viable Systems Model for managing value co-creation.

The Viable Systems Model –VSM- (Beer, 1966, 1979, 1981; Espejo & Reyes, 2011) is an advanced model that includes the concepts of second order cybernetics and Ashby's Law of Requisite Variety to depict, understand and manage organizational and inter-organizational process like that of value co-creation. The VSM, supported by an effective methodology, can shed light on the relational dynamics of value co-creation by supplying a deep and cohesive framework that highlights the relevant relations among co-creation agents, allowing us to consider the whole systemic context. The application of the VSM helps to shed light on how consumers and producers can engage in the co-creation process.

The co-creation system relies on producers (supply) variety and consumer choice. From a cybernetic's perspective, the more these relationships are dominated by poor variety balances that impose the values of either consumers or suppliers at the expense of the other, the more likely is that the loop between them will push undesirable markets or weak enterprises or both, reducing the chances of desirable, ethical and innovative products and/or services that increase quality of life and contribute to a better society. Consumer/producer relationships can be predatory or collaborative (Mulgan 2013) and the VSM can be applied to explore strategies to reduce the former and increase the latter.

Current technologies are increasing producers' capabilities but consumers' competencies for making choices are increasingly over demanded. As variety overwhelms customers' cognitive capabilities, redressing this imbalance is necessary to make more sense of the markets. Too much choice may paralyze individuals' decision making, leading to a waste of resources and increasing psychological dissatisfaction (Schwartz, 2009). People find themselves under pressure to choose and may not have time for good decisions. The challenge for prosumers, relationships is enabling behavioral options in between what Schwartz (2009) defines as the open ended satisfizers, who accept whatever product is vaguely satisfactory and the inward looking optimizers, who become increasingly paralyzed by a chaotic decision space beyond their evaluation capacity (Boisot and McKelvey 2010). From a cybernetic perspective, as implied in the previous section, when the variety of disturbances is high and the variety of responses is low, questions arise of whether customers are operating under any form of unnecessary structural, conversational or cognitive constraints (Espejo and Watt 1988). The principal argument is the need to consider the functioning of homeostats; how is the Law of Requisite Variety asserting itself in each occasion? (Espejo, 2000 and Espejo & Reyes, 2011). These relationships by nature are homeostatic loops. They are increasingly bi-directional thanks to the digital technologies (Tapscott et al. 2008, Tascott 2009), which enable co-creation process through one-to-one and one-to-many transactions (Rust, et al. 2010). In the cybernetic language of this paper digital technology and communications enable improving an enterprises' complexity management through more effective cognitive, conversational and organisational structures. To this aim we propose examining a model of variety balances for "Prosumer Value Co-creation" (Figure 1). We propose this model as a heuristic for eigen values in value co-creation processes.

Figure 1- Prosumer Value Co-creation



Keywords: Value Co-creation, Viable Systems Model, Cybernetics, Eigenform, Requisite Variety

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Marketing as a Luhmanian System

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This study is focused on a twofold observation through Niklas Luhmann's systemic theory (1927-1998). On one side, we see marketing as a methodology/topic in the relentless process of sense and meaning construction by each system through its specific code and program (e. g. science, economics, law, religion, politics). The process of making of sense and meaning can be depicted as communication: (Marketing = Code -> System = Market System). As in Luhmann's words:

«For a theory of autopoietic systems, only communication is a serious candidate for the position of the elementary units of the basic self referential process of social systems» (Luhmann, 1990: 6)

In the *self referential* process marketing is an *allo-referential topic* framed in a self referential and autopoietic process. Therefore marketing can be seen as a mere *thematization* differently shaped by each different system composing that heterarchical constellation (Pitasi, 2011) which describes Luhmann's social system.

The first part of this study attempts to build a systemic hermeneutics of marketing focusing on the above mentioned *allo-referential* thematization in which, for example, religion might thematize marketing as that immoral discipline which tries to turn God and the Church into a mere mass consumption product, while science might be that system which thematizes marketing as an exemplary case of how consumer behavior might be analyzed in the same way as rats behavior in the Skinner 's Box.

The second part of this study tries to draw that distinction (Spencer Brown, 1999) which would allow to shape marketing as a system with its own code and program. Considering Giesler's inspirational attempt to introduce Luhmann's systemic theory in marketing (Giesler, 2003), we try to evolve a much more strategic challenge: a proposal in progress to redefine marketing epistemologically (and ontologically) as a Luhmannian system being featured by an *abstract /empirical code* (which describes the function of the systems to turn empirical, concrete,

physical things, for example a chair, into an abstract, intangible asset as, for example a brand (as already sketched out by Giesler 2003). Nevertheless, this coding function would not be viable *per se* to create systemic meaning: the program is required as the star gate which effectively shapes the meaningful borders of the system. In the marketing system case the program might be globalization meant as the relentless expansion of markets on a planetary scale as the "*Vollendung* (fulfillment) of the whole planet as a net or "*globus*" (Pitasi 2010) in which everything circulates worldwide once turned (*Kehre*) into its intangible and abstract symbol, which represents an unlimited opening to the possible (Schuermann, 1990).

The convergence of allor-eferential thematization of marketing by different systems and of self referential emerging distinctions to shape a specific marketing system can be performed, for instance, by the art system. Indeed, among the heterarchical systems theorized by Luhmann, art (Luhmann, 1990, Luhmann 2000) can be a crucial one both for the thematization of marketing and for structural couplings and interpenetrations between systems, specifically between the art and marketing ones. As a matter of fact the art system let emerge the phenomenon of *dematerialization of art*, which is increasingly evident, in fact, from objects to concepts, to symbols and to brand trends. This is a process that we can observe in Pop Art, but even more clearly with abstract expressionism and conceptual art. The above mentioned phenomenon of increasing abstraction is emerging in complex evolutionary systems of communication in multiple forms (from the real economy to finance, from human resources management to the expansion of intellectual capital formalized in trademarks, patents, licenses, copyrights, etc.) The abstraction of contemporary art reflects a complex emergent phenomenon that can be defined as *Hypercitizenship* (Pitasi 2013) in the sense that the levels of observational and operational expertise (required for a system to evolve autopoietically) are increasingly sophisticated in terms of cosmopolitanism, entrepreneurialism and social autonomy, as compared to the specifics of the art system. As for art and the above mentioned systems, we can depict the marketing system as a fully dematerialized system.

Keywords: Marketing; Luhmann System Theory

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The analysis of business performance in small and medium hospitality enterprises in the Republic of Croatia

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The role of small and medium enterprises is crucial for the European economic recovery - their number, employment capacity and value added constitute a large share of the European economy. Providing the right conditions in which small and medium enterprises can flourish is paramount for ensuring a sustained recovery and achieving prosperity for all EU citizens.

One of the main barriers of achieving better business results of the accommodation industry in Croatia lies in the unfavourable structure of total accommodation capacities and the level of their quality. The offer is characterized by far too small share of hospitality enterprises (12% in 2012) and far too emphasized share of complementary accommodation capacities. Small and medium hospitality enterprises, with privately owned rooms and apartments being predominant (46% in 2012). Additionally, even the average size of the hospitality enterprises in Croatia is far the biggest, compared with other European countries, which evidently does not contribute to tourism competitiveness. Small and medium hospitality enterprises are an important factor in the economic development. Considering the fact that tourism and hospitality industry are of great national interest for the Republic of Croatia, as well as the fact that there is a growing trend in the number of small and medium hospitality enterprises, it should be explored their business performance due to their importance for the development of the Croatian hospitality industry.

In order to provide deeper understanding of small and medium hospitality enterprises business performance the study aims to analyse data from Croatian Bureau of Statistics and author's earlier work. The data used were part of a longer scale and previously published survey into the business activities of small and medium hospitality enterprises in the Republic of Croatia and the project named “The networking in clusters with the aim of more efficient operations of small and

medium hospitality enterprises". The aim of this paper is to analyze the situation and the conditions in which small and medium hospitality enterprises do business in Croatia.

The small and medium hospitality enterprises category has been chosen for a number of reasons. One possibility to improve the opportunities for the poor is to provide a favorable environment for small and medium hospitality enterprises. For example, small, and medium enterprises typically have high labor intensity and thus support job creation, especially in the services sector. With 99% of businesses classified as small and medium hospitality enterprises in Europe, when grouped together collectively have a considerable influence on both national and European economies and particularly within the hospitality industry.

Recent studies on small and medium hospitality enterprises and their contribution to growth have shown that framework conditions within which they operate and the entrepreneurial culture are key factors in determining the extent of small and medium hospitality enterprises performance and consequently their contribution to macroeconomic growth. Even in the presence of a strong entrepreneurial culture, however, small and medium hospitality enterprises would struggle to perform if basic framework conditions were not present.

Therefore, considering the high proportion of small and medium hospitality enterprises within this sector, its volatility and its potential importance to the Croatian economy, further clarification of the determinants of success should make a useful and practical contribution to business practice in the hospitality sector.

Keywords: Business performance, small and medium hospitality enterprises, Republic of Croatia.

Mihajlo Pupin, the scientist who had lived social responsibility, before the System CSR was born

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This paper is an attempt to examine the humanistic character of the famous scientist Mihajlo Idvorski Pupin (1854, Idvor, 1935), whose inventions changed the world. This is a reminder of the beneficial book "From Immigrant, the Inventor," which he dedicated to his mother Olympics, published in 1923, which a year later was awarded "Pulitzer Prize." Scientist of world renown, one of the most famous in the history, became famous for living. Yet 160 years after his birth insufficiently illuminated the facts indicate that Mihajlo Pupin lived socially responsible, rather than social responsibility has become synonymous with successful business and Corporate Social Responsibility (CSR), whose system by applying again and profit and respect.

The Information Revolution in the USA is unthinkable without scientific discoveries of Mihajlo Idvorski Pupin and Bill Gates believes that the scientist most responsible for the modern computer system of his country. The latest research confirms that the author of 84 of the inventions and his contribution to humanistic world does not know enough. Three of his students are winners of the Nobel Prize. Mihajlo Pupin Idvorski is founder many humanitarian funds in the world, for development, science, education, art, eradication of poverty, assistance to vulnerable populations.

Keywords: Mihajlo Pupin; CSR

The significance of market research to businesses

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This work explores the role and importance of market research in Kosovo based on the need of market research and marketing to influence the effective management of businesses. Today, marketing plays a significant role in the company's strategy. Unfortunately many businesses do not solve this problem adequately, without giving the necessary importance of market research. This paper shows the importance of marketing research and market research, and what exactly it means to invest in market research.

The main aim of this thesis is to explore the state of business in the last 5 years in Kosovo. The research aims to test several variables that affect the businesses to invest in marketing in general and particularly market research. The main question the study raises is: How much is estimated market research in decision making by businesses? This thesis will be explored primarily through the prism of business decision-making and impact of research in their development. Also, there are other sub-questions that contribute to the main research question, other sub-questions would be: Does the company have, the business plan or strategic plan? Did Marketing included in your business plan? Are you planning to invest in market research? What percentage of revenue, you invest in marketing?

The study was conducted through quantitative methods, which are collected and processed data from interviews of business activities: production, service and trading, through a representative sample, where the sample population, will be the register of business registration in Kosovo. Interviewing was conducted face to face with the owners or managers of businesses through a structured questionnaire. Sample selection was random. Data analysis and processing are carried out through SPSS.

The study has two objectives:

The first objective is a comprehensive analysis of the current situation in Kosovo businesses, exploring what percentage of the spending budget for marketing and market research. This general analysis will be realized by reference to the official statistics on the state of business in Kosovo.

The second objective is to identify the willingness of companies, that their business be realized through market research. This analysis will focus on realizing research with all sorts of business activities in Kosovo through a representative sample.

The hypothesis of this study is: Investing in market research by the companies, affects business development of companies, by reducing uncertainty in decision making.

Market research often spreads consultancy, generating ideas or solving problems. Good research often includes all these elements. This is also a time of change for the market research industry and for this reason it is difficult to determine its limits clearly (Keegan, 2009).

To convert successfully any business idea into higher capital gains, it is important for managers to understand and to determine the fair value of their investment. For this reason, it is important thesis that we will discuss how investing in market research proves the usefulness or profit for businesses and is the significant for business development.

Keywords: Business Development, Decision Making, Effective Management, Market Research, Marketing.

The Black and Scholes Model: a report on the state of the art

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Purpose

The aim of the paper is to investigate the Black and Scholes model by providing an updated conceptualization of the topic through a systematic literature review in the international field. In this direction, the purpose of the research is to define what is the relevant literature between 1999 and 2014 and which are the most important perspectives on the Black and Scholes model analysed by scholars, in order to provide to academic community an useful support for their studies. The investigation has been conducted only for the economic and corporate insights, with the objective to identify strong and weak points coming from a defined framework.

Methodology

The research approach is based on a qualitative methodology with the application of a single method approach.

The research has been developed through the utilization of two databases (Google Scholar and Ebsco) in which we have used four keywords able to provide a wide range of scientific contributes to set up our literature review:

1. real Options Valuation;
2. real Options Assessment;
3. Black and Scholes;
4. real options Pricing.

The range of contributes considered is made mainly by articles, books, citations.

In order to restrict our research to more recent contribution, we have chosen the period from 1999 to 2014.

For each search with a keyword, we have analyzed the first 6 pages of resulting pages, avoiding in this way that results may lose relevance.

The number of results for Google scholar has been 240 and for Ebsco has been 480.

From the initial number of 720 results, we included 263 scientific products inherent the economic and corporate perspective.

Findings

The Black- Scholes formula is the most widely known model to evaluate options. Since 70's (Black, Scholes, 1973) it has been used to demonstrate, in particular conditions (boundary conditions), that its results are very similar to the binomial model.

In our review, respect to the time period from 1999 to 2014, we have observed that this method has been applied to many cases, from different field: valuation of construction projects (Ford, et al., 2002), R&D investment in pharmaceuticals firms (Gunther McGrath, Nerkar, 2004), valuation of IT projects (Tiwana, 2002), portfolio insurance strategies, customer relationship management (Maklan, et al., 2005).

Success of this method depends on the ability to provide a quick estimation of the value of a real option using a limitate range of inputs. Nevertheless, there are some criticism:

1. many contributions (Huang, Chen, 2002) complain that the reliability of this method is related to very restrictive conditions;
2. part of the doctrine (Triantis, Borison, 2001) considers the binomial option pricing model, as more flexible in allowing the optimal timing of the exercise decision;
3. some contributions (Damodaran, 2005) consider the Black and Scholes formula as an easy way to get a rough value reliable just for simple investment opportunities, with the limitation of a specific exercise date.

Quantitative Results

Real Option topic was born in the first half of 70's and is made by very extensive literature that cover a wide range of subjects and fields.

Our research demonstrates that the Black and Scholes model and other models of real options evaluation, have been applied to meet various needs of assessment and prediction.

From the initial number of results, we have selected 263 contributions related to the economic and corporate perspectives as in the following tables 1 and 2 for each database.

The following table 1 reports data concerning the 1st database: Google Scholar.

Table 1 – Google Scholar

KEYWORDS	TOTAL	RELATED TO BUSINESS ADMINISTRATION	AVAILABLE		ANALIZED
			TOTAL	RELATED TO MORE KEYWORDS	
<i>REAL OPTIONS VALUATION</i>	60	39	9	5	21
<i>BLACK AND SCHOLES</i>	60	15	4	0	
<i>REAL OPTIONS ASSESSMENT</i>	60	17	3	3	
<i>REAL OPTIONS PRICING</i>	60	38	15	9	
	240	109	31	17	

The following table 2 reports data concerning the 2nd database: EBSCO.

Table 2 - EBSCO

KEYWORDS	TOTAL	RELATED TO BUSINESS ADMINISTRATION	AVAILABLE		ANALIZED
			TOTAL	RELATED TO MORE KEYWORDS	
REAL OPTIONS VALUATION	120	48	33	7	84
BLACK AND SCHOLES	120	20	14	0	
REAL OPTIONS ASSESSMENT	120	41	16	6	
REAL OPTIONS PRICING	120	45	30	3	
	480	154	93	16	

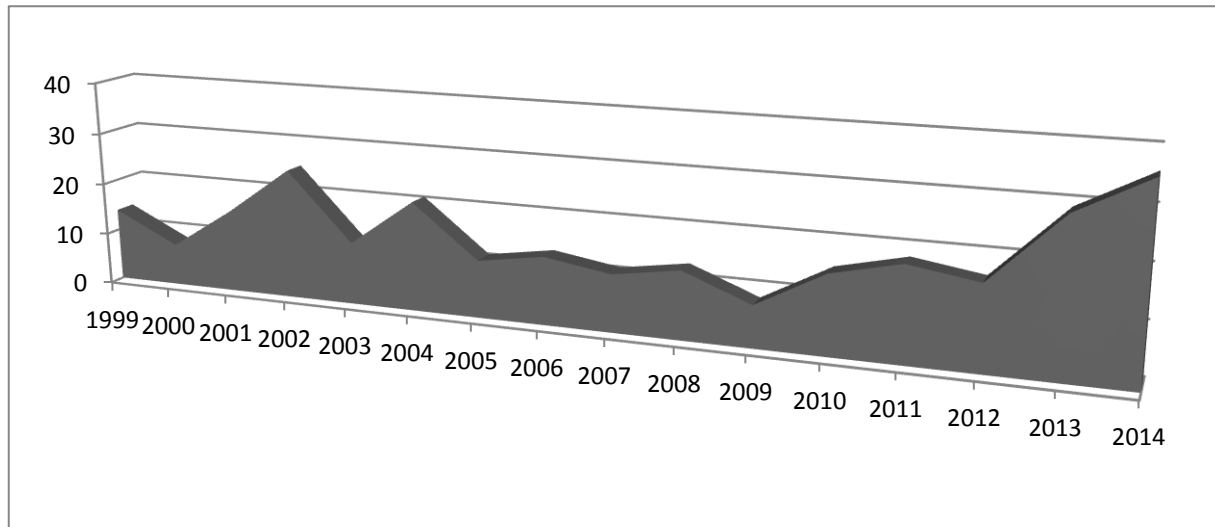
One hundred and twenty one contributions, in which we have found nineteen duplications, have been used for the definition of the state of art, to get an analysis on the existing schools of thinking. The other contributions have been used together with ones used for the state of art to set quantitative data concerning the years of publication and the topics. Over the time period analyzed (1999-2014), the existing literature can be identified as follows in the table 3.

Table 3 – Quantitative results

SCIENTIFIC PRODUCTS YEAR	ARTICLES	BOOKS	CITATIONS	BOOK CHAPTERS
1999	12	1	1	0
2000	6	0	2	0
2001	15	1	0	0
2002	24	0	1	0
2003	11	1	0	0
2004	20	1	0	0
2005	10	0	1	0
2006	11	2	0	0
2007	9	2	0	0
2008	13	0	0	0
2009	8	0	0	0
2010	15	0	0	0
2011	18	0	0	0
2012	14	1	0	1
2013	28	1	0	0
2014	36	0	0	0

The following figure 1 reports the development of the literature production in the analyzed period according our research.

Figure 1 – Literature development



Qualitative Results

After the first step of analysis, we can classify the contributions by scholars through the topics investigated.

Some author (Avanzi, et al, 2013; Bauduns, 2013) used the real option theory in the field of decision making (Yonggang, Mingli, 2014; McCarter, et al., 2011). Benaroch and Kauffman, for example, use this theory to solve problems in information technology (IT) investment decision. Other authors tried to validate the real option theory (Triantis, Borison, 2001) or fill a gap in the theory (Peng, 2010).

The real option model can be used also in portfolio selection and management, as well portfolio or project or asset assessment. Wang and Hwang (2007) apply the theory to the R&D Portfolio decision, instead Moore and Jun (2006) used daily data for warrants traded on the Johannesburg Stock Exchange between 1909 and 1922 to test how close derivative prices are to Black–Scholes (1973) prices and to compute profits for investors using a simple trading rule for call options.

Some authors criticize the real option approach. Borison, (2005) analyzed the approach applicability, the notable assumptions and the steps involved in applying the approach to use. Concluding, we find the use of real options models in risk analysis both to demonstrate the importance of the “option to wait” due to uncertainty over future shocks to project cash flows and the uncertainty over the permanence of past shocks (Steven et al 2015).

Two hundred and sixty-three contributions related to business administration were found, forty two were duplications, so we have two hundred and twenty one contribution on real option theory related to business administration.

It is possible, under the previous assumptions, classify the existing literature by the main topics as follows in the table 4.

Table 4- Qualitative results

TOPICS	NUMBER OF CONTRIBUTION
<i>DECISION MAKING</i>	42
<i>VALIDATION OF REAL OPTION THEORY</i>	30
<i>CRITICIZE REAL OPTION APPROACH</i>	4
<i>PORTFOLIO SELECTION AND MANAGEMENT</i>	33
<i>VALUATION OF ASSET/ PROJECT/INVESTMENT</i>	92
<i>ANALYSIS OF THE RISK</i>	20
	221

The analysis points out that main topic in the contribution is the application of real option model to evaluate assets, projects and investments, after there is the use of the model for: decision making (42), portfolio selection and management (33), validation of real option theory (30), analysis of the risk (20) and criticize real option approach.

Originality/value

Investigating the literature review on the real options model, we have given a quantitative study on the literature production between 1999 and 2014 and an updated conceptualization of the topic by classifying contributions. The analysis is finalized to issue a new research perspective on the Black and Scholes method in the economic and corporate perspective.

Practical Implication

The paper aims to provide quantitative data on the literature production, by identifying strong and weak points of the literature analyzed for academic community.

According quantitative data, we are able to represent the evolution of literary production during the time period 1999-2014. More specifically we divided contributes in the following categories: citations, articles and books.

The analysis of the selected literature gives the possibility to identify the main application of this method in the business administration offering new spaces to be filled with literary production.

Keywords: Real Options Valuation, Real Options Assessment, Black and Scholes, Real options Pricing.

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Social Network Sites as marketing and communication tools: opportunities and constraints between internal management and outsourcing

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This work aim at highlighting the eventual commitments and opportunity in using the social networking as marketing tools; more easily, they can be used as strengthening support to the communication actions toward the inner and external side of the company. Some companies use social networks as technical support to the marketing strategy – collection of data, analysis and development of medium and long terms relationship -; other ones, on the contrary, prefer an use that is related to the strengthening of the identity and relationship dynamics of the brand and to the mutual relationship between the company and the customer.

The diagnostic use of the data collection and the elaboration of statistic involve a specific knowledge of the web and the main social network tools; as well, it is also related to the destination of time and resources (both the economic and human ones) in case these resources are some way taken on by the companies; on the contrary, the mere communicative use. Allow better chances to outsource the tools management.

In this work we rough out, by selecting data proceeding from researches of different matrix, the current trend, within the Italian web scenery, of the relationship between small-medium companies and the social network site and we analyse the opportunity and the commitment of an internal or outsourced management.

Keywords: *Social Network Sites; communication tools; outsourcing*

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Social media for the management of luxury brand

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The developments in Web 2.0, defined by users-generated contents (UGC) and social networking sites (SNS), led to significant implications for the consumer and the study of cultures of consumption (Beer and Burrows, 2010). Internet has enabled a new era of UGC, threatening the hegemony of traditional content generator like advertising and experts or as the primary sources of information (Dhar and Chang, 2009). The multi-channel marketing and integrated has pervaded the web and SNS are tools that give significant input to the processes of communication, but at the same time, it also detects instruments output both internal and external organizations; Enterprises adoption "competitive strategies" by defining symbolic meanings, in order to be always present among consumers (Heil et al, 2010; Tynan et al 2010), multiplicand the levels of loyalty and developing incremental levels of affection.

Luxury brands have to evoke the uniqueness and exclusivity due to high quality, premium prices and controlled distribution.

The main channel of retail sales for luxury brands is represented by offline stores, remains in any case the problem of having to oversee the different channels of communication among them, the online channel in this case represented by the social network sites that contribute to the creation of virtual communities of brand, experience and unconventional brand value improvement (Muniz and O'Guinn, 2001, p. 412). In parallel, the web is a "free place" where everyone can express themselves in a more or less controlled (Stokburger-Sauer, 2010), and the garrison of that channel is key to reducing the impact on the brand may be negative from stakeholders to reduce its value and, therefore, in need of supervision that channel, strengthening the Communication in an incremental process and continuous.

The work, with the support of the literature as reference, through the analysis of a case, intends to uncover any evidence that, in luxury, helping to develop the brand value and strengthen its affection.

In this regard, the present research will examine the marketing potential of social media as a tool for luxury brand management and will address the challenges luxury brands encounter in managing their interactive and dynamic relationships with consumers who utilize social media.

Purpose

Take over the role of the SNS in the process of construction and development of the brand value and the transition from brand loyalty to the "brand confidence".

Methodology/approach

A survey will be conducted to induce participants to explore the Facebook page of a luxury brand and complete a questionnaire to measure the role of SNS in the path of development of brand value and strengthening of affection to the brand.

Findings

The work, with the support of the reference literature, through the analysis of a case, intends to detect the elements that, in luxury, contribute to developing the brand value and strengthen the affection

Keywords: *Consumer behavior, social media, brand management, user-generated content, luxury brands.*

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Using Real Option Theory to evaluate a technology investment in Italian network industries: "Entrepreneurial perspectives on Next Generation Networks"

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This work fits in a research context about the formulating of evaluation dynamic models of an innovative investment typical of network industry, showing how the use of Real Option Theory can be an indispensable tool in efficient resources allocation.

The evaluation of an investment project can be a task that is not easy to apply to professional practice, especially in the presence of a large use of capital employed in unexplored industrial realities.

When undertaking intends to adopt a pioneering strategic orientation also called "first-mover strategy" does not have a large set of information to define an adequate level of idiosyncratic risk. This lack makes it impossible to assess fairly an extra return/opportunity cost to be paid to an investor who maintains a high level of uncertainty typical of an entropic market context characterized by complexity and contingency (Trigeorgis, 1995)

As above, the objective of this work is to highlight the strategic opportunities belonging to the class of capital-intensive investment, peculiar of a network industry. In this case, will be rebuilt the main strategic options arising from investing in telecommunications infrastructure networks, having as underlying the development of a Next Generation Network (NGN) in Italy.

The use of Real Options Theory applied to a high-growth sector like telecommunications, is intended to capture the best competitive strategies that a telecommunications operator "first-mover" could implement gradually and optimally over time. This approach, thanks to the aid of quantitative instruments typical of the option pricing, on the one hand allows to improve the measurement of the strategic value of an investment in a new technology (NGN); on the other hand it provides a significative rate of return that investor requires before he will commit funds to irreversible investment (Tahon et al.).

Therefore the aim of this endeavour is to expand the range of strategic real options to be considered in the development of a new communication technology, examining how the use of strategic partnerships or forms of coepetition between competitors can enrich the decision-making framework of a company that invests in a network industry.

Inevitably the digitization of a community would fuel the emergence of new social needs that the telecom operators should be able to grasp, starting an incremental process of "smart innovation" aimed at developing technological and commercial solutions. The involved sectors would be

strategically challenging for a company that supports a large amount of sunk costs and it is easy to see that an ultrabroadband network infrastructure would create a number of facilities for the emergence of new competitive environments: digital healthcare; cyber security; enterprise networks; smart cities; Cable TV; etc.

The above market areas are strongly interconnected to the development of a Next Generation Network; therefore the opportunity to take advantage of new infrastructure would allow other companies to redefine their business model as a function of the amount of content transmitted on the same.

A telecommunications operator, if able to identify proactively business opportunities arising from its investment, could define the relational network that allows it to get more useful information to provide better services Business to Business or eventually to acquire the right know how to diversify its activities into new competitive realities.

To evaluate in financial terms the adoption of each alternative strategy, it would be reasonable to consider the existence of compound real options, pointing out that sometimes a real option can have as payoff an additional strategic option and the exercise of a strategic option can take place simultaneously with the exercise of another. An example appropriate to the analysis described above, may occur when a Telecommunications Company establishes a relationship with a Media Company until to learn gradually the know how and decide to offer multimedia content through an own infrastructure.

This entrepreneurial orientation, not only would improve internal productivity of a Country, but would also increase the level of welfare of all those who for various reasons would benefit from the development of a new communication infrastructure.

The following paper intends to optimize the decision-making process of the Next Generation Network deployment, structuring the capital allocation according to real option approach and taking into account the possible realisations of several strategic value drivers.

Keywords: *Extended Net Present Value; Real Option Analysis; Option Pricing; Risk Analysis; Network Industries; Next Generation Network; Strategic Alliances; Competition; Social Innovation.*

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Strategic networking to small and medium hospitality enterprises and farmers in improving gastronomy in Croatia

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Strategic networking became a reality of the global economy and successful performance in the tourism market. Cooperation and partnerships between small and medium hospitality enterprises all the more necessary because the tourist market permanently increases the productivity of their business and continuously generate innovation in business. Small and medium hospitality enterprises by linking and business cooperation received various forms of strategic networking based on common interest: hotel offer higher quality, increased productivity, better collaboration with suppliers, innovation, improved monitoring of competitors and joint appearance in the tourism market. Linking small and medium hospitality enterprises with equal or equivalent activities enabled them to realize the effects of economies of scale. In addition, these enterprises by linking to have greater influence on policy makers and authorities (regional and local) towards the acceptance of their proposals for measures to increase business efficiency, encouraging the development and increasing competitiveness in the domestic market. Addition to increasing productivity by linking small and medium hospitality enterprises encourage the development and the quality of the local community. Small and medium hospitality enterprises are an important factor in the economic development. Considering the fact that tourism and agricultural production activities are of great national interest for Croatia, as well as the fact that there is a growing trend in production of organic food worldwide, Croatia should explore its high production potentials due to its geographical position and natural conditions. Organically produced foods are becoming an increasing attraction to tourists and herein lay an opportunity for small and medium hospitality enterprises to enhance their gastronomy offer. Therefore, the networking of small and medium hospitality enterprises with local producers of quality foods and wines is essential. By participating in the activities of the business cooperation of small and medium hospitality enterprises and agricultural producers can achieve numerous benefits that could eventually contribute to their better business results. Small and medium hospitality enterprises and agriculture have great potential for their business through synergy effects. Synergistic effects are the main advantage of business cooperation because of which small and medium hospitality enterprises are linked to agricultural producers. An important advantage is the improved transportation system that farmers use as easier access to potential market when compared with independent performance of the market.

Foodstuffs prepared in a traditional, natural or ecologic way raise the value of gastronomy offer in hotels. This challenges small and medium hospitality enterprises to raise high standards in

preparing authentic cuisine, as well as the manufacturers to create a significant market of high quality products. Improved infrastructure assists agricultural producers, but also allows guests staying in small and medium hospitality enterprises that have a "fresco" and naturally grown foods consumed in these enterprises. Also they have the possibility to visiting agricultural farms that cultivated the foods that are offered in small and medium hospitality enterprises, and they are enabled by visiting the on-site farm consume domestic products, thereby enriching the tourist offer. This creates an additional advantage of synergies between agricultural producers and small and medium hospitality enterprises. It should also be emphasized that the strategy of linking small and medium-sized hotel companies and farmers must be geared towards increasing the competitiveness of domestic agricultural products, better use of domestic resources and initiating strategic networking between them. The aim of this paper is to indicate the status and capabilities of a strategic networking between small and medium hospitality enterprises and agricultural producers in selected hotels in Croatia, and to provide future guidelines for the development of gastronomy offer for the hotels. For this purpose, an empirical research using questionnaires and interviews has been done.

Keywords: Strategic networking, small and medium hospitality enterprises, farmers, gastronomy offer, organic foods.

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