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Combining System Dynamics Modeling and Performance Management Systems to Frame the One Stop Shop Service: a Case Based on Palermo's Municipality

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Abstract

The Italian public sector is characterized by a great number of stakeholders, both public and private. That's the reason why, in the past, dealing with public issues meant to face different actors and administrations, to solve the several number of bureaucratic requirements. In particular, the field of new business activities was very complex. This area was characterized by huge fragmentations among the public bodies involved. In fact, if an entrepreneur wanted to open a new business, it was necessary to deal with different subjects to obtain the mandatory permits, license and authorizations. Accomplishing all the steps, without any support from the public sector, implied an increase of costs and delays. Furthermore, the interactions among administrations were generating inefficiencies as a result of a lack of coordination and communication.

To tackle these issues the One Stop Shop service was introduced. P.D. 447/1998 was the first law to regulates the Italian One Stop Shop. The latter aims to manage the bureaucratic processes behind the opening of new activities. This innovative service brought a relevant change of perspective. In fact with its support, potential entrepreneurs, are now able to deal with just one agency, that has the duty to take into its matters user requests, and contact the related administrations to obtain the specific licenses in place of the entrepreneur.

The aim of this thesis is to evaluate the performance of Palermo's One Stop Shop, by suggesting a methodological approach, that is able to tackle potential inefficiencies, to govern and improve the performance of the service. With the purpose of guaranteeing a multidimensional perspective, capable to go further than the financial aspects of the system, a Performance Management (PM) approach is suggested. This methodology focuses its attention on a result oriented perspective, that bases its analysis on the final outcomes of the service . Furthermore,

the PM intent is to understand how such end results are influenced, and how it is possible to affect them, by identifying the so called levers of intervention, on which a decision maker can leverage to influence the behavior of the service.

Adopting this methodology to the specific case of Palermo's One Stop Shop, will help to find the main cause and effect relations between the detected variables and the related performance indicators, in order to clarify the provided contribution that every single resource has on the system.

Due to an environment that is characterized by non linear relationships, delays and unpredictability among the variable involved, such as in Palermo's public sector, it becomes useful to adopt a multi-method approach. In particular combining PM with System Dynamics will foster the understanding of dynamic complexities inside One Stop Shop processes, whit the purpose to improve a sustainable growth dimension, that increases the efficiency and the effectiveness of the service.

The Analysis that will be provided focuses on two different perspectives. The first, is a qualitative study based on the identification of the main actors, variables and key performance drivers, to understand their interactions and the feedbacks structure that these produce. The second, a quantitative representation supported by a SD model. Its specific intent, is to built awareness of service dynamics among decision makers, in order to create a powerful instrument able to simulate all the crucial relationships of Palermo's One Stop Shop and test possible reactions of the system over time.

Furthermore, this study will suggest possible policies to be implemented, to face potential criticalities among the mechanisms of the service. The goal of both qualitative and quantitative analysis is to develop a sustainable growth path of Palermo's One Stop Shop based on a learning oriented approach.

LIST OF CONTENTS

List of abbreviations

BSC Balance Scored Card

CLD Causal Loop Diagram

D.I.A. Italian acronym for a specific type of self-certification (Dichiarazione di Inizio Attività)

H.R. Human Resources

ICT Information and Communication Technology

IT Information Technology

NPM New Public Management

O.U. Operational Unit

P.D. Presidential Decree

P&C Planning and Control

P.A. Public Administrations

P.M. Performance Management

P.P.M Public Performance Management

S.C.I.A. Italian acronym for a specific type of self certification (Segnalazione Certificata di Inizio Attività)

SD System Dynamics

SUAP Sportello Unico per le Attività Produttive (One Stop Shop)

List of Figures

List of Table

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

For the last 15 years, Italy has been the set of many reforms and changes that target, better performance in the public sector and a lighter bureaucracy system. One Stop Government, was one of the main achievement pursued by those reforms. This new approach, sets a totally different idea of offering services to users who can now get all they need in just "one stop", without having to contact different administrations. Indeed, this means that turning to a government, a citizen could expect to find all his needs provided by a single office**,** without having to deal with different administrations. It will be the agency's concern to take care of all the bureaucratic procedures for the "clients", in order to give them back the expected outcome **(**Bent, Stephen, Kernaghan, Kenneth, and Marson, Brian D.,1999).

The needs that brought Italy to focus on One Stop Government, were related to the historical administrative changes of the second half of the nineties. In fact, by giving more and more responsibilities to local authorities, the Italian public administrations have been delegated to detain certain branches or agencies. In addition, there is to consider the typical divisions, that exist in the legal and/or operational authority, that range from the national, the regional and the local levels of government. Also, semi-private or private organizations have been entrust to

carry-out public services. The results is a highly fragmented public sector which does not reflect a customer's perspective, who expects or prefers to have all related matters that concern a certain event or situation to be taken care of by one or a few service providers. What is needed is a new organizational model to deliver services from the point of view of the "customer", as citizens and business can be called in their particular role in the process of service delivery (Bent, Stephen, Kernaghan, Kenneth, and Marson, Brian D. (1999)).

In Italy, fragmentations and inefficiencies were really deep in the field of bureaucracy for new business activities. If an entrepreneur wanted to open a new firm or expends his own activity, it was necessary to activate the submission procedures, among the public administrations involved, by requiring the appropriate application forms, permits, concessions and licenses. To follow all the bureaucratic steps implied a great amount of resources consumption, meaning an increase of costs for the single business activity, not only in terms of money (all the expenses related to the bureaucracy fulfillment) but more likely in terms of time. Moving from one public office to the another and get all the needed documentations can be frustrating for the entrepreneur, especially if he has to deal with administrative delays. These costs are none other then results of the implementation of regulative polices that are sometimes difficult to handle, that prevent firms from development. The complexity of the administrative system and its bureaucratic delays, have negative consequences on the economical system. For these reason it became necessary for P.A. to deal with such inefficiencies and try to reduce those costs with the support of the right tools (Caron, Daniel and Bent, Stephen,1999).

The solution to these issues was identified in the One-Stop-Government, as it is strongly supported by public administration experts underscoring the crucial role of "integration" for achieving citizens or customer-oriented government (Fountain, 1994; Seidle, 1995; Federal Benchmarking Consortium, 1997; Intergovernmental Advisory Board, 1998; Bent, Kernaghan et al., 1999; Office of Intergovernmental Solutions, 1999).

In order to solve these criticalities, the Italian government published the P.D.(Presidential Decree) 447/1998, the first legislation that regulates the Italian One Stop Shop, namely SUAP[1]. A unique P.A. managed by the municipality.

The main role of this structure is to handle the processes behind the opening of new activities. An entrepreneur who wants to open a new business needs first to activate a procedure **to** the One Stop Shop, that will take care of the application by doing the necessary bureaucratic steps for the client. The office will send the documentations to the public administrations involved, which will provide their response to the One Stop Shop. The latter will forward the final authorization or rejection to the user.

The aim of this thesis is to analyze Palermo One Stop Shop, a mid-size municipality (650.000 inhabitants, www.anci.it) located in Sicily, Italy. A performance evaluation of the structure will be provided, based on the internal processes and external relationships whit the public environment. The presented case study will show how Palermo's SUAP developed, and how adopted itself to reforms that change the One Stop Shop scenario. Evaluating the true efficiency of the structure and its dynamics, it will be a great opportunity to test SUAP, and eventually the problems which have not been solved yet.

The One Stop Shop represents a great opportunity for the development of the local territory because its functions work has a perfect "trait d'union" between the public and the private sector. It fosters the private sector, it reduces the time bureaucracy, absorb and assumes the role of intermediary with the public administrations. These functions and duties help to create an higher accountability among the public sector. Moreover, the capability to deliver better services and rules to the private sector, may generate economic and social value, in the system (Moore, 1995). Part of this value may, in turn, feed back to the public sector again, not only in terms of

[1] SUAP: Sportello Unico per le Attività Produttive

taxes and other financial contributions but also in terms of consensus, image, etc (Bianchi, 2010).

Figure 1

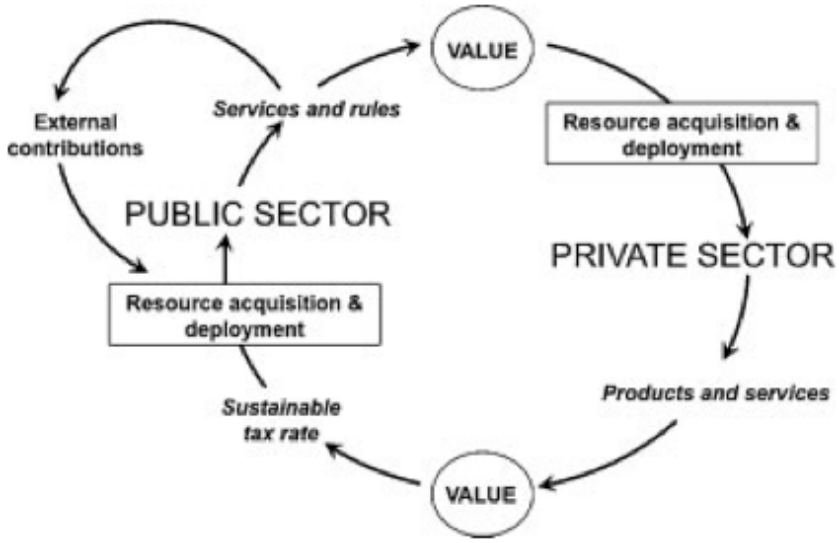


Figure 1 *A systemic framework embodying both the public and private sector: value generation as a focus for assessing performance and a prerequisite for sustaining growth (Bianchi, 2010).*

Figure 1 shows the interaction between the public and private sectors, as part of the same system. The capability to create value is the main factor that guarantees the development and the connections of both sectors, to make growth sustainable. It is important to highlight how the performance of the public sector does not feed back only in the form of taxes and financial contributions, but also in terms of external contributions, generating a qualitative value through the outcome services put inside the system (e.g. in the case of health care, police or environmental care services, whose indirect outcomes have, however, an economic value too) (Bianchi, 2010).

1.2 Research Objectives and Motivations

Measuring SUAP performance, and suggest a methodological approach useful to decision makers, in order to solve possible criticalities and govern the service performance, is one of the thesis main goals.

A complete evaluation of the structure and its processes will be provided, even knowing that is not an easy task due to the immaterial variables involved in the service. Measurable **factors,** such as number of applications, number of employes etc… will of course be taken in care by the analysis, taking into account that they can be easily studied. The focus will be also pointed on the so called soft variables. These relate to attributes of human behavior or effects that variations in such behavior produce. As far as soft variables are concerned, numerical data are often unavailable or non-existent (https://www.systemdynamicsapplications.com). Intangible variables such as productivity, image, quality, are just a few examples. The analysis will provide a complete scenario of the service, underlining possible inefficiencies and bottlenecks. If those exists, the objective of the thesis will be to understand how they developed inside the system, and suggest possible policies to help decision makers to overcome those limitations. In fact, the need to ensure the efficiency and effectiveness of essential public services, represent one of the most relevant element concerning citizens life quality, and competitiveness of the modern municipalities. If is true that public services need to achieve the widest diffusion among the collectivity, on the other hand they need to provide a satisfactory level of quality. A quantitative and qualitative adequacy and provision, according to criteria of efficiency, effectiveness and economy, represent the challenge that the present and the future pose to the local institutions. On this regard, trying to improve the combination of both service quality and spread, suggest possible options to achieve better One Stop Shop outcomes, are the main motivations that inspired this research.

Considering the economical austerity of nowadays, fostering the development of such a public service, which is one true connector between public and private sector, could be the first step to develop the local economy. In order to achieve these purposes, this study identifies, and attempts to answer the following research questions:

- Are processes and mechanisms of Palermo One Stop Shop efficient, or they can be implemented in order to provide a higher level of service quality?
- What strategies did the municipality of Palermo adopted to develop its One Stop Shop, and what does it do to allow it to become more accessible to citizens?
- Which areas of improvement can be identified, and how is possible to intervene to suggest one or more policies that can improve the service?

To answer the questions above, this research will firstly analyze the internal processes and the governance system of SUAP; secondly, it will identify the causal relationships between the key variables involved in the system, and thirdly, it will underline those relationships with the support of the System Dynamics (SD) methodology[2]. The main objective of this study is to build a quantitative model, which will provide the readers of powerful lenses capable to clarify and make them understand the mechanisms and the dynamics behind Palermo's One Stop Shop.

1.3 Research Methodology

The analysis will be conduct through the lenses of performance management (PM). This methodology can be defined as "a process which contributes to the effective management of

[2] Next paragraph will clearfy the main elements of SD methodology

individuals and teams in order to achieve high levels of organizational performance. As such, it establishes shared understanding about what is to be achieved and an approach to leading and developing people which will ensure that it is achieved" (Armstrong and Baron, 1998). The main innovations and changes that the PM approach brings are crucial. The focus move from economic results to a wider area of interest, that aims at identifying and creating the right tools to evaluate, control and manage, not just the outcomes but mostly the means used to achieve them; switch from a mono-dimensional to a multidimensional analysis is the most important change brought by performance management (Fitzgerarld,1991). With a change of perspective, is possible to define a new approach that targets the public sector: the Public Performance Management (PPM). It Implements a result oriented perspective, that focuses on provided services to the community, and combine both short term and long run management. These are two relevant changes brought by this approach. Furthermore, It's crucial to underline that Public Performance Management methodology focus not only on the outcomes, the true connectors that links users and administrations, but its intent is to analyze how such end results are influenced, and in which way these create feedbacks to the other significant resources in the organization. Helping understand those feedbacks is the main goal of PPM. Adopting this approach in the specific case of Palermo One Stop Shop, will help the understanding of the mechanisms behind the outcomes, and will clarify the reasons why the administration is performing the way it is.

The PM it is consider a proper methodology when it's applied to the government of a static system, namely a system characterized by a number of variables that interact with each other with regular and uniform relationships(J. Sterman, 2000). Different is the impact of PM when we are dealing with a complex and dynamic system, based on unpredictable and uncertain relationships among the variables involved. In such environment, where it is crucial to deal with non linear relations, and time delays between cause and effects, like in Palermo's urban area, it seems appropriate to integrate PM with another tool that is able to reduce the criticalities just

mentioned. The identified tool is the System Dynamics (SD) methodology. SD is "well suited for dynamic environments, in which human behavior interacts with the physics of an operation, and in which there are multiple feedbacks connecting employees, managers, customers, and other actors"3. In fact SD, by studying the causal-effect relationships between the variables of the system, is able to deal with dynamic complexities. (J. Sterman, 2000). System Dynamics is a relatively young methodology, introduced in the early 1960's by Jay Forrester in his book, Industrial Dynamics. Wolstenholme defines it, as a rigorous method for qualitative description, exploration of complex systems in terms of their processes, information, organizational boundaries and strategies; which facilitates quantitative simulation modeling and analysis for the design of system structure and control (Wolstenholme, 1993). It is used throughout the public and private sector for policy analysis and design (Radzicki and Taylor, 2008). The aim of the SD is to clarify the dynamic complexities by using and creating models that are able to report the observed variables, explaining the causal relationships among them. By comparing these models to the reality it is possible to interpret the changes that happen over time, and attend on key variables, when possible, to influence the system in the way the decision maker wants.

On this concern, the modeling process is composed of two different approaches, the qualitative and the quantitative. In detail, qualitative system dynamics models are used to represent feedback processes around the central topic of interest, they are not numerically expressed. Therefore, they are not used for simulations and policy testing. It is possible instead, to map the logic relationships between the variables identified. Those relations are made explicit by the Causal Loop Diagram (CLD).

Quantitative system dynamics models, on the other hand, are fully numerically supported, aim to run simulations and test different policies. In detail quantitative models are realized by making use of particular software (Powersim, Ithink and Vensim are the most relevant). It is possible to

3 Oliva, R., Sterman , J. 2009. "*Death Spirals and Virtuous Cycles: Human Resource Dynamics inKnowledge-Based Services"*. The Handbook of Service Science. P. Maglio, J. Spohrer & C. Kieliszewski. London. Springer.

place quantitative values, explicit functions previously identified, to reconstruct the relationships between the variables of the system, and obtain graphical simulations of their behaviors in a well defined time-frame. More specifically, simulations show how the key variables respond over time, and enable decision makers to be aware of the delays and of the exogenous constraints which characterizes the system under analysis. For all these reasons, SD can be applied to the phase of strategic planning in order to promptly perceive and assess the changing requests coming from the external environment, and to evaluate through simulations the impact of alternative policies.

There are other instruments that tried to deal with dynamic complexity, measurement of intangible resources, detection of delays, and an adequate understanding of the linkages between short and the long term perspectives. One of the most important is the Balanced Scorecard (BSC). Created in 1996 by Kaplan and Norton, its main innovations focused on analytical organizational performance, stating that end results needs to be understood; it is crucial to point out how these are generated, which factors affect them, and how they can be influenced by the decision makers. Kaplan and Norton wanted to create an instrument which shows that performance cannot be measured only in financial terms. They also wanted to give a customer, processes, and learning growth perspectives to provide a complete analysis of performance (Bianchi, 2012). The reason why the author chose not to use the BSC in favor of a SD approach, lies on the bases that the BSC fails to translate company strategy into a coherent set of measures and objectives, because it lacks a rigorous methodology for selecting metrics and for establishing the relationship between metrics and corporate strategy (Linard, 2002). Also, Kaplan and Norton pointed out the importance of feedbacks relationships but always conceived as a bottom-up causality, which totally ignores feedbacks, thereby confining attention only to the effect of variables in the lower perspectives (Linard and Dvorsky 2001).

Consider the topic that this thesis aims to study, combining both SD and PPM methodologies, avoiding the BSC perspective, seems particularly appropriate. In fact Palermo's One Stop Shop

is dealing with an environment characterized by a high level of complexity, due to the numbers of administration involved, and to the non-linear relations among the key variables of the agency which generates delays inside the system. Those are the results of lack in P&C, and a consequence of to many decision makers and stakeholder involved in every single procedure. In such an environment it seems difficult to provide a complete analysis with just one methodology. In fact with the support of PPM it will be possible to provide a picture of the structure under analysis, by identifying the key variables of the system, their relationships, classify them and recognizing the drivers on which decision makers can leverage to drive the organization towards a learning-oriented strategic process of change, aimed at ensuring the sustainable growth of the organization (Bianchi, 2012). At the same time, with the support of SD it will be possible to go beyond the static picture made clear by the PPM approach. Moreover, a model will be provided which will make the dynamics of the structure understandable. The model will display all the links between the variables previously identified and their development over a certain time horizon. The simulation will help to clarify the feedback-loop structure, underlying performance and identifying alternative strategies to adopt so as to change the structure for performance improvement (Kaplan et al. 1996, Linard 1996, Morecroft 2007; Richmond 2001; Ritchie-Dunham 2001; Warren 2008).

1.4 Thesis Structure

This thesis was developed to provide a broad overview of the One Stop Shop service, with a specific focus on the case study concerning Palermo's SUAP. The framework of the research is primarily thought out to be ideally identified in three parts. The first one, introduces the argument, clarifying the objectives and the boundaries of the studies. This specific part wants to explain the One Stop Shop structure and its means. It provides the reader with the full legal

background on which the service is based on. The second part, is dedicated to the methodologies that inspired this study, the PPM approach, and the SD will be thoroughly explained. Furthermore, the potential that drift from the combination of both in order to face the complexity of the system will be argued. In the third part, Palermo SUAP case study will be introduced. A qualitative analysis will first be provided, then the specific SD model will be shown and explained, to clarify the mechanisms inside every processes and understand the cause-effect beyond the One Stop Shop dynamics.

In detail the thesis is structured in five chapters:

Chapter one: is an introduction to this dissertation that shows a general perspective of the study, of its objectives and boundaries, and a presentation of methodologies that will be used in this research.

Chapter two: It provides an overview of the One Stop Shop and its structure, its attention focuses on the legal framework of the service. The most relevant reforms regarding SUAP are analyzed together with their own real applications.

Chapter three: in this chapter, the focus is totally aimed at the methodologies that have been chosen for this thesis; a PPM approach and a Dynamic Performance Management will be introduced and explained. A complete analysis of SD will be provided pointing out both the qualitative and the quantitative approach. The contribution generated by the interaction of SD an PPM will also be highlighted and it will show in which way it can be useful to evaluate SUAP performance.

Chapter four: It shows the specific case of Palermo SUAP, its organization, structure and description. The qualitative approach will present a description of the causal relations that govern the variables of the system under analysis. Then the quantitative model of Palermo's One Stop Shop will be provided and explained; all the variables involved will be mapped, and the feedbacks that this system generates will be described. Eventual policies to improve the efficiency of the service will be also taken into account.

Chapter five: the fifth and final chapter, will focus on the conclusive thoughts and on the limits of this study. This research will end with suggestions, that can be valuable for furthered research and inspire future topics.

CHAPTER TWO

ONE STOP SHOP LEGAL FRAMEWORKS AND APPLICATIONS

2.1 One Stop Shop Overview

"The administrative burden imposed by a traditionally heavy regulation of the economic activity, has always been a factor negatively affecting the performance of businesses in Italy, and especially of this crucial category"[4]. In order to fill this historical gap and improve the interface between the public and the private sector, in the late 1990s One Stop Shop for new business was introduced. The One-Stop Shop has been created with the aim of easing businesses activities from most of their administrative burden by organizing a single structure which serve as a unique interface for releasing business licenses between the public administration and the user, identified as an entrepreneur. Increasing coordination among public entities involved in the procedures is One Stop Shop main competence.(Edoardo Ongaro, 2004). This service was introduced in Italy in 1998 with the P.D. 447/1998. It represents single contact point for whatever regards permissions prescribed by the law to exercise industrial/business activities. "Under the one-stop paradigm, all of a customer's business can be completed in a single contact, be it face to face or via phone, fax, Internet or other means. One-stop customers do not have to

[4] Ongaro E. "Process management in the public sector the experience of one-stop shops in Italy"The International Journal of Public Sector Management Vol. 17 No. 1, 2004 pp. 81-107

hunt around, call back, or repeatedly explain their situation. One-stop customer service is convenient, accessible, and personalized" (Federal Benchmarking Consortium, 1997).

SUAP acquires the role of true "broker" between firms (users) and a wide range of public bodies, such as local healthcare unit, fire brigades, province, region, chamber of commerce, regional authority for the environment, and other P.A.. A relevant responsibility is given to the One-Stop Shop, since is now the only responsible agency in front of the end-user. On the other hand, this responsibility needs to be converted in actions. Therefore, the structure has to guarantee certainty of times to issue business permits, and an high level of service quality. In order to keep the single application under a certain time limit, One Stop Shop needs to monitor the quality of the documentation presented by the user, and the respect of times deadlines among the public bodies involved. Also, it has to coordinate the activity among the administrations in charge of issuing the licenses needed, according to the requests of the entrepreneurs.

Inside the time boundaries imposed by the legal framework, SUAP should provide a response to its client. The applications start from initiative of the user who presents the required documentation to the front office. Then, the procedure is taken in care by the back office which forwards it to the appropriate administrations, coordinates eventual request of integration, and monitors the time needed for each specific permit to be transmitted back. Furthermore, the One Stop Shop has the duty to gather all the acts, permissions, licenses etc... that were produced by the public offices involved, and deliver them to the client once the bureaucratic processes are over. It is clear, to ensure a better performance of the service, that the cooperation between the various administration plays a crucial role, especially when permissions are mandatory. Team-work, with other offices is an essential mechanism that improves the quality of the outcome, because it is one of the few tools that can actually reduce delays inside the system. In fact, the lack of communication among administrations, is able to congest the service. Delays produce other delays as a result of accumulation, causing bottlenecks, and service performance drops. If

public organizations do not cooperate, the entire mean of the One Stop Shop can be considered not achieved.

To support this cooperation, facilitates the client procedures, and avoid those criticalities ICT can be a great instrument. With its development, ICT can be in many different ways of major use to the P.A.. It can provide better internal coordination, which may be achieved by using a common software, that is used to share all needed information among the public bodies involved; in doing so, many inefficiencies and delays, due to traditional methods of communicating, can be avoided. Also online connection, can improve both external and internal efficiency. External, because it regulates the relations with customers who can eventually use the web to access to the service. Internal, since the online support will help P.A. to speed up their communication. A full implementation of the online service implies that, the public actors involved update their instruments, in order to provide a full web supported network able to link every single administration with each other. Also, the costumer (citizen, private enterprise or other public administrations) has to communicate with the system from a single access point, even when the service is provided by different authorities. On this regard, as Bent and Kernaghan (1999) states, information technology have greatly facilitated the creation and operation of many types. But when the coordination of services across departments – and especially across governments – are involved, the incompatibility of technologies can seriously impede the administrative operations. Also it can happen that some partners may not have adequate access to, or knowledge of, the necessary technology. Still Bent and Kernaghan(1999) identifies another issue: the data security. Guaranteeing the necessary level of security, authenticity and privacy in communication and transactions via the Internet, especially for personal data and information is highly relevant; establishing Internet-based systems that protect confidential information and electronic commerce is only the first step towards on-line government services. It is essential to resolve these technological problems before implementation is attempted.

On this regard, to improve the service performance and reach a well integrated One Stop Shop platform Maria A. Wimmer (2002) identifies a list of requirements that needs to be fulfilled:

- smoothly adapting traditional processes to modern technology;
- providing access to the services via a single entry even when different administrations are involved (one shop);
- activate different media channels to facilitate the access of the service
- guaranteeing the necessary level of security, not only for internet transactions but also for privacy, personal data and information;
- smoothly coordinating internal and external public activity to facilitate cross-border operations;
- authorizing customers to monitor different stages of service performance, and verify the stage of their own application
- providing simple information gathering; interacting with an authority; complaints and other aftercare needs such as feeding statistics or feedback;
- guaranteeing help on online procedures
- make clear and constantly update on legal issues, legal framework and prescription terms
- matching the customer demand and needs with the right office
- guarantee freedom of information and transparency of the service

Fulfilling these requirements, will come close to the realization of an "ideal" One Stop Shop, unique and integrated. However, the developments are still far from represent such next-generation virtual administrations (Maria A. Wimmer, 2002). The Italian government set the bar and actually step forward approaching ICT among the public sector. The changes were not reactive like they were supposed to be, if we consider that the main step on the ICT issue was taken in 2010 with the P.D. 160/2010. The One Stop Shop's legal framework changed a lot

since it was born in 1998, but it spend twelve years before some concrete legal improvements were made in the use of information technology.

Though the reform was explicit on the matter, that the structure had to make improvements,, and even knowing that these changes would have a great impact on P.A., it was not an easy task to create the related adjustments within a short period of time. It take times especially if the population is involved, and needs to understand, adapt, and change their own behaviors in order to deal with a new approach of service delivery. The application of the reform and its main passages will be discussed further.

In the next paragraphs, the Italian One Stop Shop legal framework will be analyzed, starting from the reform of 1990s, up till the latest one. This to provide a clear picture of the evaluation of the system.

2.2 Italian Legal Framework

During the last twenty years, the Italian One Stop Shop's legal framework has followed a complex development path. In the early nineties the system was really chaotic and slow; but gradually due to the reforms of 1998 and of 2010, the focus shifted toward service efficiency, and users needs. Those reforms wanted to unburden the whole bureaucratic mechanism that stood behind activating a new business activity, through the creation of a unique structure, that would be able to regulate the relationship with the different administrations responsible for activating new businesses. Pointing out deadlines for every procedures, in order to reduce delays and give time certainty, was another goal that was set by the new laws.

In its development path, it is possible to identify the 1998 as the crucial year, which divides the period exactly in two parts , this is due to P.D. 447/1998 that introduced the One Stop Shop. It

is possible to see this change as a turning point, that separates the legal framework in two specific parts, before and after 1998.

Before 1998, the opening of a business activity was extremely articulated, each subject needed to deal with every single administration involved, without being able to benefit from any support from the municipalities. Once SUAP was created, the system started to be regulated by one agency, and it became the only reference for the citizen. From 1998, the focus has switched toward a citizen oriented perspective.

Since then, improvements have been made to integrate ICT as a relevant part of the agency. The change toward an electronic service, supported by the huge potential of the web, was not immediate. A huge step forward was made only in 2010 with the emanation of P.D. 160/2010, which not only introduced the ICT system inside the Italian One Stop Shop, but in order to provide more efficient results, ruled a peremptory deadline that consented the innovation of the entire system.

2.2.1 Italian Legal Framework Before 1998

P.D. 447/1998, sanctioned the birth of the Italian One Stop Shop, before this law, to open a business activity in Italy was a complex task. In most of cases, the procedures that needed to be followed by the entrepreneur were different from each-other, and each-one was provided for, by a numerous amount of different administrations. These procedures cost a lot in terms of time. We have to take into account, that the single subject, needed to move from one P.A. to another, in search of different permits. Moreover, each single P.A, in order to be able to provide all the documentation, required an unspecified amount of waiting time. Furthermore, the law that regulated the opening of a new activity, showed a huge lack of transparency. The discipline was not linear, and no common framework was in place. Many different requirements were needed,

this depended on type of business activity that a subject wanted to open. A lot of discrepancies existed, due to the nature of the procedures that had to be activated. This brought the creation of different regulations for each single type of applications required.

The Italian legal system, more in detail its bureaucracy, was oriented to provide a specific discipline, neglecting the efficiency of a more simple and general framework. All the particular cases were governed by specific sector regulations; for this reason, it was not an easy task to acquire full knowledge of the system, and gain the necessary information and fulfill each application exhaustively.

To clarify the differences and the innovations brought by the Italian One Stop Shop, La Ferla e Maritano (1996) pointed out the example of building license, to demonstrate the complexity of one procedure activation before 1998. The building license is a required authorization needed to build new constructions or to convert them into business activity. In a regular situation, to forward a building license request, the firm needed to present the application, in three copies, to the mayor, attaching:

- the architectural and structural projects, signed by the professional in charge.
- one copy of the regional authorization for emissions in the atmosphere (if it necessary)
- permission of the project by the fire department in order to prevent fires
- one copy of the notification sent to ASL (local municipality for healthcare) for the public hygiene and safety, highlighting the mean of building works, and the characteristics of the productive installations, if more than three workers are employed.

To these documents other certifications needed to be added. This would depending on the type of business activity requested, and other supplementary permits specifically required by the local building regulations. Obviously, if the single entrepreneur decided to conduct the application on his own, he would need to know in detail, the different branches of law that regulated his specific case. Consider the time and resource consumption that all these procedures required, it

was common practice to contact an external consultant, who, through compensation, would substitute the entrepreneur and deal with the administrations involved. With his experience and knowledge, he was able to facilitate the conclusion of all the phases of the application. The time usually required, to receive an answer from the public subjects involved, was of 90 days, but some of the procedures registered 24 months delays.

Figure 2 shows the common procedure before 1998

Figure 2

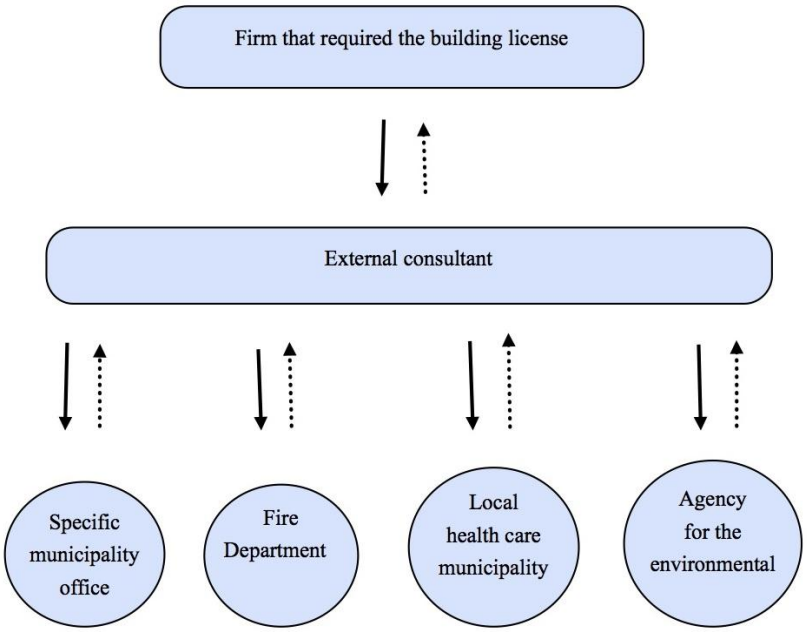


Figure 2. *Building license procedure before the One Stop Shop*

With the intent of trying to reduce the bureaucracy behind business activation, and facilitate entrepreneurs in their procedures, the only crucial reform before 1998 refers to art. 19, art. 20, art. 21 of the Law 241/90. Its main innovation was represented by the DIA[5] (declaration of commencement of one business activity), a self-certification, that can be used by the entrepreneur, who self-ensures compliance with the requirements needed to start a new business

[5] Literally, Dichiarazione di Inizio Attività

activity. Art.19 states: "in all the cases when a private business activity is subject to authorizations, permits, licenses, qualifications, no impediment or any other act of consensus, whose release depends only and exclusively on the assessment required by law, the act of consensus can be substituted by a notice of commencement, from the interest subject to the responsible public administration ". DIA was not allowed in case of building licenses and in the cases mentioned on the L. 8 August n. 431/85. It was up to the administrations responsible, to verify within and not further then 60 days from the declaration, the existence of all the legal requirements needed, and prohibit the activity in case those were violated. Art.21 highlighted that the penalty for false statement follows art. 483 of the Italian penal code.

When an authorization, licenses, no impediment, or any other type of permit is needed, art. 20 established that, in case of silence from the administration responsible, the procedure is considered accepted.

2.2.2 The Reform of 1998: P.D. 447/1998

The first step made by the Italian government to unburden the responsibility of the central state was to change prospective and set its new priorities: move from a centralized form of government to a decentralized model, giving more liability and decision making power to the local authorities. The turning point was reached in the 1998 with the Decree no. 112/1998, which concretely confers all the administrative functions to the regions and local authorities. The region, in their turn, had to confer those functions to the provinces and the municipalities. What the law wanted to emphasized was that the administrative services needed were to be provided by the local authorities, territorially closer to the citizens than the central government. They would ensure more control efficiency and resolution of local issues. The entire reform is based on subsidiarity, a principle of decentralization, it states, that every situation ought to be handled

by the closest authority to the citizens, and due to its localization, would be capable of addressing matters effectively.

This legal background allowed national government to open a new era of reforms, based on the decentralization of powers. On this regard, one of the issues that became a matter of local administrations was related to business activities. As already pointed out in the first chapter, there was the need to build better bureaucracy behind mechanisms that created new businesses. With this purpose the P.D. n 447/1998 was published. This reform aimed to achieve the following operational objectives:

- concentrating information and procedures that regard administrative acts, and are associated to the opening of any entrepreneurial activities
- certainty of waiting times
- reduction of bureaucracy for the firms
- transparency and diffusion of information through the constitution of an open electronic archive, accessible to each stakeholder
- foster local territorial development, by encouraging the opening of new business activities.
- simplifying administrative procedures by postponing control, to a later stage
- Better organized internal procedures, and foster dialogue between internal offices and the P.A. involved.

Art.1 of 447/1998 made explicit that the localization of business activities, their creation, renovation, enlargement, end, reactivation, reconversion, as well as works executed inside factory buildings used for firm's activities, were delegated to municipalities.

According to the art. 3 of P.D. n 447/1998 municipalities have to provide a unique structure responsible for the entire process of realization, expansion, ending, reactivation, and conversion of each business activity. To this end, municipalities founded the so-called One Stop Shop,

which guarantees a full database that contains the needed information for the procedures, the complete list of authorizations forms, the state of development of each procedure, and all the opportunities to support the entrepreneur's development.

The staff for the One Stop Shop is organized and decided by the City Council, and consist of two main figures: the responsible of the structure, and the responsible of the procedure.

The first figure is assign to a manager who stands at the top of the structure and is entirely responsible for it. This subject has the duty to control the financial and administrative aspects, and has the freedom of expenditures and decision making, so that the goals set may be achieved.

The second figure, is responsible for each administrative procedure. The One Stop Shop has the obligation to instruct, for every single application, only one responsible who is in charge from the submission of the instance to the final decision, until he is assign to a new procedure. This subject has the power, to reject any application presented by the users if they do not meet the criteria established by the urban-plan, or if some irregularities are found during the preliminary control phase. In compliance with the cases provided by law, this person also has the duty to convene to the so called "service conference". This instrument aims straight at the inside of the public sector to simplify the administrative processes. Its first target is to help administrations acquire from different stake holder all the authorization, act, no impediment, licenses or other elements, in order to adopt one final measure. The service conference can be convened by the person responsible of the procedure if: the administrations involved have difficulties in finding a common solution; if they after the deadline term expires still don't have an answer; or if there is a negative response to the applications processed by users. Its purpose is to identify the existence of possible conditions needed to overcome the limits of the submitted applications, and to find a common agreement when the wills of the administrations differ. Its final report, due to an higher hierarchical power, substitutes the effects of previous documents made by the administrations involved in the procedure.

According to P.D. 447/1998 there are two main instruments that must be provided to costumers: the simplified procedure and the self-certification.

The art.4 of the P.D. 447/1998 set the main steps for the simplified procedure. First, the user has to present the application form to the One Stop Shop. After receiving the required documents, the One Stop Shop must send them to the public offices involved. The agency is obliged to give a clear time schedule for its procedures. According to law6, after 90 days the client must receive his feedback (120 days with the chance of postponing the certification of other 60 days, if there is the needs of an environmental evaluation).In case all the administrations have sent the needed authorizations, opinions, licenses or no impediment before the legal deadline, the person responsible of the structure can adopt the final report. The latter, is the only document, legally recognized, that fulfills the request made by the entrepreneur. The authorizations provided by the single institutions, without the involvement of the One Stop Shop, are considered not effective. In case of rejection it is possible to require, no later than 20 days from the decision, the service conference. Its scope is to identify the existence of possible conditions, that are needed to overcome the limits of the application submitted.

In case the documentation presented is not complete, it is possible to suspend the terms of the application before 30 days, ask for the required integration, and reactivate the terms once the documents needed are delivered.

The capability of succeed inside its deadlines is directly connected to the involvement that S.U.A.P. has with other administrations, and to the creation of a cooperation system with every actor involved (Ongaro E., 2004). On the other hand, if some agencies are not giving the right support, the responsible of the procedure can apply his power by submitting warnings directly to the interested administrations, or start a notice of default, in order to obtain the conclusion of the process.

6 P.D. 447/1998

Self-certification is regulated by the art. 6 of the 447/1998 and follows completely different procedures. It is filed by the entrepreneur, supported by an external consultant, and needs to be attached together with the required documents, these are: the certificate of compliance, that allows to assess the consistency of the project to the urban planning laws; the plants safety certificate; the environmental protection certification; the healthcare and hygienic certificate.

The single entrepreneur is responsible for the documentation, that must be in compliance with the existing norms. Thereafter, within 60 days an answer is required from the One Stop Shop. In case the entrepreneur has no response within the designated period of time, the project is intent authorized. The documentation presented, is checked by the responsible of the structure, while the external administrations involved, verify the truthfulness and the compliance of the project. In case of discrepancies with the laws, the application must be rejected; also, a motivation needs to be attached to the rejection form. Conversely, to the simplified procedure, the applications started with the process of self certification, can't be corrected by any eventual unlawfulness.

Self-certification can't be activated for the circumstances prescribed by art. 4 of P.D. n. 447/98, for those cases in fact the simplified procedure becomes mandatory:

- industrial plants where nuclear materials are used
- production of armaments
- coastal deposit
- production plants, refining and storage of mineral oils
- temporary plants of deposit, disposal, recovery and recycle of waste
- all the hypothesis for which the community law required a specific authorization

For all the other proceedings it's up to the entrepreneur to choose the modus operandi that he wants to follow.

Regardless the chosen type of procedure, the One Stop Shop and the public administrations responsible, need to apply their control functions even after the final report has been released, in order to verify if the entrepreneur is acting in compliance to what was declared and authorized.

2.2.3 One Stop Shop Structure

P.D. 447/1998 also organized the One Stop Shop's internal organization structure. The main distinction is between the front office and the back office. The front office takes into account the relation with costumers by giving all the information, by providing all the necessary documents, and by supporting the clients with counseling activities.

The front office has three main competences:

- Promotional: it has to spread all of the existing information and potentialities, to encourage the economical development of the local territory, promoting every single opportunity with the purpose of increasing the possibilities of new investments, either in the public or private sectors.
- Informative: It needs to provide assistance and guidance to firms and to the local entrepreneurs both from an administrative and a bureaucratic perspective; it has to foster financial support, incentives, and tax benefits policies.
- Administrative: It has to manage and evaluate every single request, and sends all of the collected documents to the back office, which will then begin to processing, each single application.

The back office, takes care of all the activities behind managing every single procedure, its activity represent the core of the One Stop Shop. Creating, maintaining, developing relationships

with other public departments and acquiring their opinions, are the main function related to the external environment. However, before creating the links and convey the files to the P.A. involved, the single application needs to be analyzed and classified correctly. The documentation walks through the One Stop Shop, going backwards to each office involved. It is the duty of the One Stop Shop to require all the files and all the opinions from every P.A.. Once they are collected the back office, following the P.D. n. 447/1998, has to review each single process and prepare the final report. The latter, is given to the front office which forwards it to the entrepreneur.

Table 1

FRONT OFFICE	BACK OFFICE
Functions: - promote actions in order to spread the economic potentialities of the local territory - inform the entrepreneur on availability areas and on tax benefits - assistance and guidance to the users - organize and present to the user all forms, needed for the correct development of the procedures - report the development of the application every time is required, consulting the web archive - take care of all the communications, publications, and notifications provided by law and regulations	Functions: - manage the different phases of the application, on which both inside and external offices are interested - manage the activations of the internal processes required: permissions, no impediment authorizations, and so on - evaluation of the legal requirements and conditions, for the emanation of the needed documents - detection, among the administrations involved, of the time needed to provide the relative documentations - track the progress of the application

Table 1: *main functions of the back and front offices*

2.2.4 The Reform of 2010: P.D. 160/2010

The web has proven to be a powerful new medium able to provide different kinds of services. By developing this instrument both national and local governments will be able to communicate and cooperate with other administrations, and improve their relationships with the citizens. A correct use of internet, and a full operative system which provides the opportunity to share information with all the stake holders, can be unique tools in the hands of the P.A.. Today it seems hardly possible to integrate services without the help of IT. Also citizens, aware of the strength of the web, switched their preferences, hoping for government services to be delivered online. Users can solve their administrative duty in a faster way, guaranteeing an access to the services from home or from the workplace avoiding, in most of the cases, the physical delivery of documents and payments. (Bent, Stephen, Kernaghan, Kenneth, and Marson, Brian D., 1999)

That is why the national government couldn't avoid the potentials of new information and communication technology and it has recently started to give it more relevance. With this aim the P.D. 160/2010 was published. With its enactment, the government wanted to create a lighter bureaucratic system behind the One Stop Shop, that is based on the support of the world wide web and the IT.

Paragraph 2 of art. 2 of P.D. 160/2010, is the first to focus on new information technology, it states: "the applications, declarations, communications and reports have to be provided to S.U.A.P. only and exclusively via telematics". This passage of the reform, is not just addressed to the citizens, but is also a message to the public administrations. With this sentence the government moves the pressure on the public system, which has to be ready, to face this technological change by improving its internal organization, through the use of the right IT tools,

and to support users with an efficient website. In doing so the web portal, should be able to provide not only the forms and documentations, but also the submission procedures. One user should be able to fill and send his application form directly from the web, without having to physically show himself. The whole front office activity, has now become the duty of the website.

The paragraph 3 of art.2, focuses on communication among administrations. According to it, the One Stop Shop needs to forward all the necessary files to the administrations involved in the procedures, through a telematic link. Standardizing the administration's electronic system will simplify and accelerate the communication among them, reducing the downtimes of bureaucracy.

Another relevant innovation is set by the art. 3, that defines the current web portal named "firm in one day". "This portal provides S.U.A.P. of all the informative and operative services for the completion of its activities". It supports the private users, who can also utilize the portal for tax payments related to the One Stop Shop activities. The portal was also designed to be a relevant tool of communication among public offices, which need to cooperate in order to fulfill efficiency in their service. This instrument can in fact be a perfect database, allowing them to share information and to verify the different stages of the procedures, it also helps to identify possible bottlenecks.

Furthermore, this reform identifies two different types of procedures, in particular art.5 rules the automated procedure, and art.7 regulates the ordinary procedure. The first (art. 5) it's based on a specific form of self-certification called SCIA[7], regulated by the art. 19 of the 7 august 1990. The cases in which the self-certification is allowed are provided by art.6 P.D. 447/1998. Also the main steps of this process follows the pattern of the art.6 P.D. 447/1998 previously explained. In summary: the entrepreneur needs to present his request with all the necessary attachments to the One Stop Shop. The documentation has to be sent, not physically but through the support of the

[7] The italian acronym is Segnalazione Certificata di Inizio Attività

website. S.U.A.P. will forward, no later than 5 days, the activated application, to the administration responsible by using the IT system. Only then the receipt will be issued to the user that will be able to start his activity. Instead, if the documentation provided is not complete, the One Stop Shop can demand, upon request from the responsible offices, an integration of the requirements.

In case of none response from the agency the procedure is deemed to be accepted.

The differences with the previous law are mainly two:

- the link between all the subjects involved is now given by the IT support, the physical front office activity is not allowed anymore
- the times required for the automated procedure is now halved. According to law the deadline for every single application is 30 days from the request.

Instead, the ordinary procedure (art. 7) occurs in the cases, made explicit by art. 4 of the P.D. 447/1998, previously listed. The requests are presented to the One Stop Shop with the website's support. If it is necessary, SUAP can consult the entrepreneur for supplementary documentations, no later than 30 days from the beginning of the application. Once all documents are checked, the One Stop Shop will forward the completed instance to the administrations competent, that will proceed to a second and more specific phase of control. It will verify if the existing conditions are in place, in order to be able to grant their authorizations. SUAP will receive the final outcome from the external administrations and adopt its final report. In accordance with law the ordinary procedure has to be completed within 60 days. When it is necessary to acquire agreements, no impediment or permits from other public actors, the responsible of the procedure, can convene the service conference. On the contrary, it is always necessary to summon the service conference, when 90 days or more are required to collect all of the documentation.

Like the SCIA, the innovations that this reform brought with it are related to two factors. Firstly, all the instances need to be provided by electronic means. Secondly, it focus on a sensible reduction of time. Art. 4 of the P.D. 447/1998, that regulated, what was previously called the simplified procedure, whose expiration term was 90 days. The P.D. 160/2010 instead, establishes the final deadline after 60 days from the submission of the application.

2.3 Limits and Barriers of the One Stop Shop

Despite its legal development, the One Stop Shop didn't overcome all its issues. The P.D. 160/2010 surely was a relevant reform that improved the system; its aim was to remove, or at least reduce, the detected inefficiencies, with the support of ICT. However, the One Stop shop is affected by several criticalities and not all of them can be solved with a technological improvement. Kubicek and Hegen (2000) identified and analyzed different types of barriers. They distinguished six key area:

- lack of cooperation
- missing of privacy legal regulations
- technology
- human factor
- fundings
- political support

The lack of cooperation, as it was mentioned before, is one of the main issue of the service. It is possible to distinguish two categories of it: vertical and horizontal. The first one, refers to the type of relationships with superior hierarchical orders. Those relations radically change with the Decree no. 112/1998, which confers administrative powers to regions and municipalities, switching responsibilities more on local authorities. If it's true, that for a successful One Stop

Shop a decentralized government is crucial, due to its territoriality, that lead to a better understanding of local issues, it is also true that too much independence granted to local public actors could be a risk factor. In fact without directions from the national government and its control, lack of efficiency, and creation of "laziness" inside the system could happen. To coordinate both powers is a possible solution to balance and improve performance (Kubicek, Hegen, 2000). The horizontal cooperation instead, regard the coordination between different P.A.; as already mentioned, this is relevant for the One Stop Shop's efficiency. Promoting this cooperation, building trust between agencies, will help to speed up the internal processes; if the relationship among the administrations are good, procedures will flow more fluently inside the system, without any form of obstructionism.

Technology instead, is one of the main tool that can be used for the service improvement. To guarantee a certain level of efficiency, One Stop Shop requires IT support. Lot of procedures need to be afforded with the use of web, to ensure time reductions of the service. The main changes that the technological evolution brought to One Stop Shop, in order to improve its performance are: the digital signature, electronic filling forms, web supported transactions. One-Stop-Government will partly rely on integrated platforms for service delivery. These communication platforms, will include a secure and authenticated message processing and payment functions. Developing appropriate technological infrastructures, after P.D. 160/2010, became mandatory for municipalities. Even known, that not all agencies are totally efficient in providing those instruments, it is relevant to highlight that the path for an IT switch has been laid-out, due to the increase of technological spread, and to the pressures coming from both entrepreneurs and national government. Today is possible to consider this barrier almost exceeded.

However, those solutions don't solve the ITC issue from a user perspective. In fact, not all citizens are ready to switch perception in favor of a more technological approach. For sure, it won't be something immediate, it will take time for the population to accept those changes,

considered that not all of it, is IT skilled and it can be difficult to face an application via web, for people who are not familiar with information technology. The challenge is to educate users to a more ITC oriented culture, providing some explanatory sections on the web site, and try to simplify every procedure as much as possible.

In addition to ITC, the human factor seems relevant inside such structure. One Stop Shop needs a trained workforce which have the right skills that can deal with new technologies. Creating those improvements by addressing extra training to workers, is something that administrations can deal with. It will also be possible to hire high skilled employees to help overcome this issue.

Another barrier is represented by the issue of funding. Getting the right support from the public sector is a difficult task, especially in an austerity period like the one that we are going through. SUAP is not the only service provided by municipalities, and it is clear that resources must be spread among all the administrations. The funding policy in Italy is regulated by the so called "stability pact". The latter is an agreement made by the European Union, which regulates the national public policy, with the intent to control the main patterns of development under certain boundaries. For this reason the money transferred to the regions are limited. Regions are not able to deal with all the necessary expenses, in a short period of time on their own,. Eventually, what could help in this situation is shared funding in partnerships with private actors. "If funds are not available from the public sector, a turn towards the private sector is necessary. This can either mean to join with the consumers in developing One-Stop-Government. While it might be thinkable to let SMEs and big business pay for such projects, the citizen is not. In these cases, services need to be offered which offer a win-win- win-situation for service providers, operators of telecommunications and network infrastructures, and citizens" (Kubicek, Hegen, 2000).

The last underlined barrier refers to political support. This issue is also linked criticality to funding. Organizational cooperation, infrastructures, integrating processes, are driven by a strong backing political leadership. Political determination is always a factor in achieving public intents, and in general administration reforms (Naschold, 1996).

The listed barriers are relevant limits to the One Stop Shop development, but as it was said, and as it will be remarked in further paragraphs, the policies adopted by the central government and municipalities, start to create positive consequences. The technological issue was challenged thanks to the creation of a new legal framework, which also regulates the privacy of the data entered inside the system. Even if knowing, that some of these barriers are still relevant and are still far away from being overcame, the path chosen by the public administrations is a correct. In particular the reforms that have been previously explained, have shown that the affecting problems have now at least been identified, and that they are willing to do anything possible that is in compliance with the limited resources available. It is clear that specific cases depend on the single municipality's needs, and circumstances.

Chapter Three

Research Methodology

3.1 Introduction

Public services play a decisive role in the economic and social development of the whole country, more specifically for the single community. Its duty is to provide services that even a non-payer cannot be excluded from (such as street lighting), services which benefit all of society rather than just the individual who uses. In the past years, the need for fund-granting bodies to be held accountable to taxpayers has also kept the primary focus on financial information, despite calls for the use of more non-financial information (Mayston 1985, Pollitt 1986). Between the eighties and the nineties, a profound process of reforms were started in the public sector. Dictated by the needs of making better use of the limited economic resources available inside municipalities, and to fulfill the growing needs of their communities. It has been accepted that companies, either public or private, do not compete solely on costs and prices (Porter, 1980). Different types of non-financial information for meeting the needs of stakeholders other than shareholders, such as customers and employees, have been more widely recognized in the development of various multidimensional approaches for organizational performance measurement (Kaplan and Norton, 1992). To better understand how multidimensional performance measurement systems can be used in public administrations, it is relevant to pose

the attention on power and pressures exercised by different stakeholders, and how they affect the use of performance information in organizations.

One of the public sectors main changes was to switch its perspective to a users oriented approach, focusing on a new influential category: the purchasers of services. Even knowing that they don't always have direct interest with public administrations, and they can easily go into conflict with other stakeholders such as employees, professionals, founders or politicians, they can always be identified as the main receivers of public outcomes. Furthermore, the gain of purchasing power in public services has often favored the client's interests (cf. Goddard, 1992; Llewellyn, 1997). Also, purchasers of services tend to have more direct influence and a superior "weight" through the exertion of purchasing power, which was one of the main reason that brought a real source of change in managerial information needs (Bryan and Beech, 1991; Llewellyn, 1993; Ellwood, 1996; Ballantine et al., 1998). The inclusion of purchasers as relevant stakeholders will add a comparative dimension to the system, providing a better description of the public sector's environment, facing many service providers. This suggests a switch of image perception of the public sector, which is now seen as a more competitive environment. Services are provided in form of markets, rather than structured in the traditional hierarchical arrangements. These changes were produced and encouraged by the impact of a new perspective of governance and management in public services, offered by an innovative ideological movement: The New Public Management (NPM). This approach and its contributions in terms of governance evolution will be analyzed in the first part of the chapter, and secondly the focus will move on performance measurement and performance evaluation inside the public sector. Underlining the importance of planning a control (P&C) system. More in detail, limitations and difficulties of a traditional P&C approach will be explained, pointing out how such P&C doesn't allow the understanding of the dynamic complexity of a specific system. To overcome those criticalities and deal with dynamic environments, integrate the old perspective of PM with new instruments seems appropriate. For this purpose, System Dynamics (SD) methodology will be

introduced, to provide a valuable tool in order to identify, first the key variables of the system under analysis, secondly to analyze in deep the causal relationship among the variables involved. Two different SD approaches will be highlighted. The first is the qualitative one, which focuses more on the creation of conceptual maps, with the purpose of pointing out all the main variables, and clarifies the polarity of their relationship. With such a perspective, it is possible to identify the lever of intervention that decision makers can influence.

The second one is the quantitative approach, based on computer simulations, that are able to underline the equation behind each variable, and give a dynamic view over a determined time horizon of the system under analysis. By distinguishing different sets of variables, it will be possible to understand the processes of accumulation or reduction of the strategic resources, and the feedbacks created by the interaction with the drivers and the end results. Through the use of SD methodology it will be possible to model non-linear relationships and give a strong instrument to decision makers, who will able to better understand the dynamics of an organization both in terms of internal procedures, and external relationships with other institutions. Also it will be possible to develop different strategies and policies, in order to improve the performance of the system taken into account.

This chapter is mainly devoted to clarify the reasons beyond the adoption of System Dynamics methodology, and underline the potential offered by the combination of different methodological approaches for the research purposes.

3.2 New Public Management and its Limitations

The reform of the Public Administration is a recurring theme in all the recent analyses of public systems. For more than two decades, beside a growing interest for the effectiveness and the quality of public services, the attention has been addressed to the efficiency that is related to the

internal processes behind the services provision. This phenomenon has its roots in an ideological movement called New Public Management (NPM), started in the early eighties in different countries all over the world. NPM generated a radical change among the role of political decision makers and on performance evaluation criteria (Bianchi, 2009). More specifically, the expression NPM identifies the objectives and conceptual schemes that are common to most of the reforms that in recent years affected public administrations. More in detail, these reforms targeted a result oriented culture and promote a less centralized public system.

"The basis of NPM lay in reversing the two cardinal doctrines of PPA; that is, lessening or removing differences between the public and the private sector and shifting the emphasis from process accountability towards a greater element of accountability in terms of results. Accounting was to be a key element in this new conception of accountability, since it reflected high trust in the market and private business methods"[8].

One of NPM main purpose, was to provide the necessary instruments to support the assumption of accountability and decision making both at a political and managerial level with the intent to create a common view, focused on citizens, that was able to generate a synergy between the two level of governance (Bianchi, 2010). Pollit (2002) identifies the general elements, accepted by most commentators, that characterize NPM, they are as follows:

- a switch from the focus of management system on inputs and processes, to outcomes and outputs (service delivered)
- more relevance on measurement of performance and its indicators
- a preference for a more specialized form of public administration based on organizational autonomy and a lean bureaucracy system, rather than a hierarchical, large and multi-purpose one
- a much wider use of market for public services delivery

[8] Hood, C., 1995. The 'new public management' in the 1980s: Variations on a theme, Accounting, Organisations and Society, 20(2/3), 93–110.

- a broadening of boundaries to emphasize collaboration between private and public sectors (growth of private and public partnerships)
- a perspective change in priorities, which focuses more on efficiency and individualism rather than equity

To follow these trends, will create a smaller and a leaner public sector, intensively focused on efficiency, effectiveness and service quality. Another relevant distinction was made by Jones and Thompson (1997) who grouped the NPM main purposes in the famous 5R: restructure, reshape, reinvent, realign and rethink.

On the contrary, it should be noted that several authors had expressed serious doubts about the approach suggested by the application of the principles of NPM. The concept of New Public Management, adopting a commercial and innovative perspective to business within public government organizations, has been both criticized (Terry 1993) and supported (Borins 2000). Several authors expressed serious doubts about the approach suggested by the application of the principles of NPM. Hood (1991) states that NPM as a concept, may not be a solution in public management, because there will be inevitable and natural sources of conflict in any case; an intervention from the government for instance will result in an imperfect market competition. Authors such as Sinclair (1995), Day and Klein(1987), argued, on one hand, about accountability dimension inside the public sector, considering it relevant for the relationships among administrations and the stakeholders involved; on the other hand, they underlined that accountability can be often blurred by goals, views and expectations of the public sector. Terry(1993), Morris and Kuratko (2002) pointed out that some of the characteristics of NPM such as innovation, risk taking and proactivity seem incompatible with the traditional structure of public organizations which is usually perceived as bureaucratic, risk averse and conservative. Furthermore, Manning and James(1996) discussed the balanced role that the state should play between the government system and the state owned enterprises. A similar perspective was

suggested by Bouckaert and Van Dooren(2002) as they argued that market mechanisms and their forces are naturally imperfect, they cannot generate sustainable growth, and to correct those imperfections a more balanced approach from the state is required.

These aspects were not the only to be criticized and supported, other debates are still open today. A relevant source of contrast was generated by another instrument brought by NPM ideology. In fact, in order to help management, measuring the performance; promote benchmarking analysis; and improve the resources allocation process, formal systems of planning and control (P&C) were suggested to public administrations. Their goal was to support decision makers in order to achieve, in an efficient and effective way, the administration's results. Even knowing that some positive examples have been experienced, Bianchi (2009) argued about the collateral effect that the introduction of formal P&C systems have often generated. He relates those effects to the following phenomena:

- an increase in bureaucracy on due to:
- focus on data instead of information
- an excessive attention on informational reports deadlines, rather than emphasize the analysis of information that need to be fulfilled
- an overemphasis on the informatics elaboration of data, and not enough attention on the organizational aspects
- goals, performance indicators, and activities are not well defined
- coordination difficulties between political and operational goals, due to a lack of communication among the management and the political framework
- the policies undertaken by single administrations, which operate with different roles inside the processes of one service supply, are disconnected

This approach of P&C systems and its development, is able to produce an illusion of control, but even worst, implies a high risk of manipulation when it comes to define goals and evaluate results. The problems that lie under this perspective are critical, taken into account the growing complexity and unpredictability that characterize the systems on which public policies interact (Bianchi, 2009). Also Bianchi argued, that to create a less illusory effort by the P.A. on the adoption of P&C formal systems, it is necessary to adopt a non mechanistic point of view, focused on strategic learning. This type of perspective can be seen as one solid solution to the listed problems, because it provides the decision makers, who operates at different levels, the necessary awareness of the causes, and eventually of the effects, that lie behind the variables on which they are able to intervene. There is the need of a new approach of planning and control, that needs to be identified as a unique learning oriented process. Every organization needs learning, which in turn is a prerequisite for growth. Underlying the management of sustainable growth is an aptitude to match short- with long-term perspectives, and to combine efficiency with effectiveness (Coda, 2010). Aside from the learning process, accountability, as previously underlined, has to be the core of this new perspective. Every single manager needs to be responsible of their results. These results have to be evaluated in reference with the established goals and their total or partial achievement (Brunetti,1979).

The key actors have to switch their perception and focus on service effectiveness perceived by citizens, according to a typical weberian approach, rather than just on actions made by public officials. Which means that performance cannot be considered adequate just because public managers are acting compliant to law, rules or procedures. To achieve this goal and satisfy citizen expectations, teamwork among administrations, and coordination of their activities with other institutions becomes crucial. It is important to crate synergies, communicate and synchronize the strategies among the different “subjects” involved. The service user, doesn’t want to deal with disconnected administrations and face every single problematic, that they go through. As an end receiver the user is the perceiver of all the cumulative criticalities of the

administrations, he can feel them in form of delay or in form of a bad quality service. Coordination among public offices will reduce those criticalities and result in a better service perception from the costumer. This aspect, as the all NPM theory highlighted, made clear that a performance evaluation cannot be done just by an input analysis, many factors need to be taken into account. For these reasons, the process of decisions making in the public sector, requires a better comprehension of dynamic complexities that characterize the environment in which the public sector acts.

To fully understand the environment and how to operates in compliance to it, applying the main elements of NPM, public organizations need to improve and develop their performance under three dimensions. Bianchi (2012) identifies three different profile to evaluate growth inside organizations (figure 3). Internal, external, and time perspective. The goal of the internal profile, is to create a balance growth among different subsystems, sectors or internal areas of an organization. It is relevant to balance every resources and spread them among different sectors without creating unbalanced effects. Under the external profile, the focus moves to the main relevant dimensions of success: financial, competitive and social. The first one underlines the financial equilibrium, meaning a balance between costs and revenues. The competitive one, it refers to public administrations in terms of users satisfaction, and created value for the community. The last one is the social dimension, that expresses the relations that an organization has with their own stakeholder, whether they are employees, or service users.

The third profile, pointed out by Bianchi (2012) is time. This dimension should target a balance between short-term and long term results. A better performance in the short run should not be achieved by ignoring long-term policies.

Giving the right attention to long-term planning and decision making means that a public administration is working with the intent to build a strategic view of management.

Figure 3

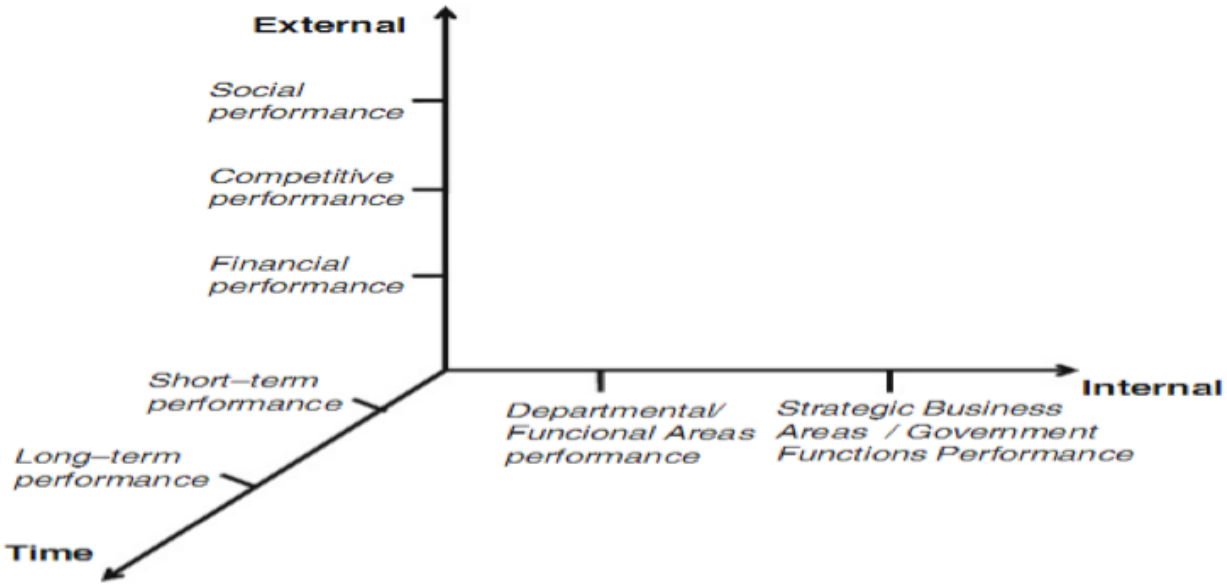


Figure 3 *The three different profile of organizational growth (Bianchi, 2012)*

Framing performance in these three dimensions will help administrations to deal efficiently with internal organization, and face external aspects that link public organizations with its stakeholders. Evaluating different performance dimensions embodies, in every single perspective, the NPM meaning: short vs. long term, area vs. area, financial vs. competitive vs. social terms.

3.3 Performance Measurement as a Crucial Element for Performance Management

The public sector is a complex and dynamic system. It is complex because a large number of administrations, whose complementary duties often include different inter-related areas, are

influencing performance. Furthermore complexity is enforced by the by the existing legal framework. (Rosenbloom et al., 2009). "It is also dynamic, since the effects produced on performance by decisions made by the several (public and private) actors having a stake on the system itself, can be often observed after long delays. Such delays are due to the time it generally takes to public sector decisions to generate their own outcomes on the community. They also depend on the huge net of feedback relationships between different sub-systems"[9] . Public sector performance is influenced by a multitude of factors, it does not depend only on allocated human and financial resources; internal structure organization and external environment, on which public services generate impact, are also crucial elements that need to be evaluated. It is clear that measuring performance means to find the right tools to evaluate every single dimension that has an effect both, inside and outside the organization.

To measure a complex structure such as a public administration, composed by many areas and sub-areas, a very strong methodology is required. To deal with such complexities a performance management (PM) approach, that aims to improve performance of public administrations, seems appropriate. In fact PM systems represent useful frameworks to drive decision-makers in both designing competitive strategies and measuring resulting outcomes. Such systems are focused on the identification of outputs and outcomes, and of their own 'drivers' (Fitzgerald et al., 1991; Fitzgerald & Moon, 1996; Otley, 1999; Ferreira & Otley, 2005). The PM defines an area of interest with the purpose to built the right tools to identify, evaluate, control and manage not only the results but also the means used for the achievement of these results, respectively at a social, organizational and economical level (Fitzgerald, 1991). PM deals with different levels of performance, and focuses on a multidimensional perspective rather than just on a traditional economical and financial dimension. Abedian suggest that "performance management is

[9] Bianchi C. 2012. *"Enhancing performance management and sustainable organizational growth through system dynamics modeling"*. In *"Systemic Management for Intelligent Organizations: Concepts, Model-Based Approaches, and Applications",* Groesser, S. N. & Zeier, pag. 143-161

basically concerned with measuring, monitoring and evaluating performance and then initiating steps to improve performance where it is Warranted"[10].

What emerge from these definitions, is the relevant mean given to the phase of performance measurement. In organizations, to manage is essential to know, to know is essential to measure (Amignoni F., Miolo Vitali P., 2003). It is necessary to find an adequate system, able to provide a complete analysis of information in order to evaluate performance under a multi-dimensional perspective. In other words, what becomes crucial is to evaluate not only the obtained results, but also how they are achieved. As Cosenz (2011) argued, result evaluation is part of a wider system of management that needs to be oriented, not just on the quality development of service supply, but also on its underlying processes. An excessive attention to the financial aspects would show just a partial and incomplete picture of performance. These traditional measures don't take into account the effects and the impacts of all the relevant variables, that affect and interact with the activities of a public administration. On this regard R.H. Chenhall and K. Langfield-Smith (2007) assert: "For many years the focus was on aggregate measures of financial performance related to both the organization as a whole and its segments. Measures such as Return on Investment (ROI) and more recent modifications, such as Economic Value Analysis (EVA), continue to be promoted widely (....) The demands from managers for performance management systems that can assist in assessing the effectiveness and efficiency in specific areas such as operations, marketing and human resource management has resulted in endeavors from those in these functions to develop performance measures of greater relevance to their areas of management. What has occurred is a proliferation of approaches to the design of performance measures" [11].

Many researchers have shown that the traditional measures based on financial indicators of performance, failed to integrate and evaluate all the critical success factors of an organization

[10] Abedian I et al. 1998. *"Transformation in action"*. University of Cape Town press, pag. 12-43.

[11] R.H. Chenhall and K. Langfield-Smith, 2007 Multiple Perspectives of Performance Measures, European Management Journal Vol. 25, No. 4, pp. 266–282,

(P. Suwignjo*, U.S Bititci, A.S Carrie, 2000). Also many authors focused on the limits of traditional measurement systems; financial performance measures are historical in nature (Dixon et al., 1990); they don't provide the necessary information for future performance (Hayes and Abernathy, 1980), encouraging short term policies (Kaplan, 1986); traditional measures, are internally oriented rather than externally focused (Kaplan and Norton, 1992), and pose little attention on competitors and customers (Neely et al., 1995); the attention on financial and economical results generate a lack in strategic focus (Skinner, 1974); sometimes preventing the innovation processes among administration or private firms (Richardson and Gordon, 1980). A relevant part of PM literature asserts that the information provided by such traditional systems are insufficient to deal with the management of organizations that face a complex environment and highly competitive markets.

The highlighted weaknesses in traditional measures created a new common view based on research for the right tools of performance measurement able to overcome the limits previously listed, and subsequently reflect the new organizational needs, providing an evaluation of different stages of development (Eccles, 1991). It is necessary to integrate the financial indicator system with different sets of performance parameters that are able to complete the evaluation of an administration by considering the other key variables involved (Cave M., Hanney S., Henkel M., Kogan M., 1997).

What is relevant in the process of performance measurement, is to conduct the evaluation of a public institution through the concepts of efficiency and effectiveness (Curristine T., 2007). Efficiency, takes into account the trade-of between cost and results. It aims to maximize this relationship by obtaining the best results, through minimizing the resource consumption. Instead, effectiveness refers to the capability to produce a desired result or achieve an objective. It can be seen as a less quantitative concept than efficiency and for this reason is more difficult to measure. When a PA is involved, it is crucial to distinguish two different types of effectiveness: internal and social. The first one concerns the inner procedures of an organization and focuses on

the achievement of managerial objectives, established during the planning phase. Basically the measurement is based on a comparison between the targets programmed and the one actually produced. The social effectiveness refers to the relationship among public administrations and external environment. It focus on the capability of an organization to satisfy the needs of a community with its own outputs. Measuring service impact and understand citizens perceived results, means to realize the real effects that a PA generates in the local territory. Furthermore, in order to guarantee an evaluation of effectiveness it becomes relevant to create an appropriate set of managerial objectives that are coherent with the ones set at the political level.

Building the right system of performance indicators, which measure the discrepancy between the strategic goals and the one actually perceived, allows decision makers to highlight the problem first, and correct it, any time there is a deviation. "Governments may set targets for educational attainment, travel speeds, mortality rates etc. However, these can usually only be determined with regard to existing performance. As a result, the success of performance indicator packages relies heavily on comparative data. Typically, this may involve comparisons from one year to another (particularly favored for central government activity and nationalized industries) or from one jurisdiction to another (typically local authority areas, but possibly countries)"[12].

Comparative data are crucial in the building process of performance indicators, because they are used for observing the development of an organization during different circumstances and time-frames; they also measure the produced results by using comparisons with the desired data, and verify the relative gaps, if there are any.

This is not the only feature that characterize a performance indicator, in fact in order to be considered consistent it needs to reflect some other particular characteristics. Poister (1999) focuses his attention on this topic and underlined a set of properties that a performance indicator should own. This suppose to be:

[12] Smith P., 1990 "The Use of Performance Indicators in the Public Sector" J. R. Statist. Soc. A (1990) 153,Part 1,pp. 53-72

- relevant. It has to have a purpose. It needs to be related and consistent to the planned objectives
- clear. It has to be simple, easy to understand and well defined, to prevent management's misinterpretations
- understandable. Every stakeholders need to read and understand an indicator
- balanced. Different dimensions of performance have to be evaluated to obtain a complete set of information, regarding every area of the administration; also customer satisfaction indicators need to be considered, in order to measure the impact with the external environment
- unambiguous. No space for misinterpretation has to be allowed, the interpretation of an indicator must be unique.
- comparable. To be really useful, an indicator must allow comparisons over time and space. It is not always possible to achieve this particular characteristic; space comparison are difficult because of the different measurement systems that can be used among different organization units. Time, allows comparison only if the adopted indicators remain stable over time; that is a necessary condition to build a time series
- verifiable. The result of an indicator must be verified, there has to be the possibility to control eventual mistakes or data. Verifiability can be developed by an increase in the tracking system of information
- statistic validity. An indicator can acquire validity through the extension of the sample taken into account, and by the frequency number of the detected events; the higher is the frequency, the more relevant is the indicator
- attributable. An indicator has to refer always to a specific unit of responsibility and to a specific objective, so that it is possible to understand exactly what has been measured and its means.

As already pointed out, a well calibrated performance measurement system, will support management, the decision makers and their actions. They will be more concerned about what is really happening inside the mechanisms of an organization. When using the right tools, adopting the right strategy, for better administration performance becomes an easier task. A performance measurement, built on solid indicators, puts the bases, for a well developed performance management system.

On this regard, the next paragraph will analyze in detail performance management methodology and its limitations. It will also be explained, how those limits can be exceeded by combining two different methodologies. This approach will provide decision makers with a full perspective of performance, allowing them to become concerned with what is really happening inside of administration mechanisms, by evaluating the causal relationships among the key variables, not only in a define moment but also during a chosen time-frame.

3.4 From Performance Management to a Multi-Method Approach

Performance management systems can be seen as an evolution of prior approaches. As it was said in the previous paragraphs, its innovation was to stop focusing solely on financial aspects of management, putting more concern on outputs and outcomes of an organization, considering the interactions with the external environment, relevant for the internal development of an agency. Especially when the public sector is involved, it is fundamental to enlarge the point of view of performance, outcomes cannot be evaluated correctly without considering a system as an inter-institutional environment: "if we aim to evaluate policy outcomes in such a context, the inter-institutional system's performance would not result from a mere sum of the performance levels produced by each single institution. It would be, rather, the effect of the net relationships and

synergies among the different institutions linked to each other."[13] That's why a multidimensional approach becomes necessary, in fact a public administration faces a lot of complexities due to the number of subjects, stakeholder and organizations involved. The relationships among these actors can not be ignored, since they have a concrete influence on the performance of every linked institution: "in an inter-institutional system's perspective, assessing performance sustainability requires not only a focus on the single organization's results, but also on how such results contribute to the wider system's performance, a factor that will affect the organization in the long run"[14].

The main purpose of PM is to foster accountability inside organizations. In detail, its duty is to identify the areas of responsibility and the relative levers of intervention, that a decision maker can use to influence final results. Mapping those areas implies to detect the actual interdependencies among them, to highlight the available resources in each of these sub-areas, to take into account their restrictions such as time constriction, and evaluate their expected results (Bianchi, 2004). A correct measurement of performance needs to consider the intermediate processes that lies beyond the services provision, in order to give a global view of the system.

To facilitate the study of the organization processes Bianchi (2012) identifies three complementary views of performance management:

- the objective view
- the instrumental view
- the subjective view

The Objective view is designed to detect the main object of an institution with the intent to explain the processes that generates the final outcomes. The first step of this analysis needs to be

[13] Bianchi C. 2012. *"Enhancing performance management and sustainable organizational growth through system dynamics modeling"*. In *"Systemic Management for Intelligent Organizations: Concepts, Model-Based Approaches, and Applications"*, Groesser, S. N. & Zeier, pag. 143-161

[14] Ibidem

based on an evaluation of the external perspective which takes into account the organization environment. This means to identify first the users, or more in general the stakeholders, that the administration is facing, then the final products/services and the social benefits that the organization supplies to its clients. Once those are identified it will be possible to set a number of organizational objectives, linked to the end results, in order to construct the related outcome indicators.

The final output should not be considered just as a final result, but it has to be taken into account and evaluated as a wider "product", comprehensive of pre and post assistance. When we are dealing with intangible goods, such as public services, those can be identified in the additional assistance and consulting services provided for the needs of users (Bianchi, 2012). Of course the quality of these extra-services effect the final performance and its perception among clients.

Just an external analysis is not enough to provide a complete overview of an organization, of course an internal evaluation must be done. The first necessary step, is to identify a group of activities that together generate the so called intermediate results, which can be seen as a necessary transition for the construction of final outcomes. To be more specific, the services provided by the back office division, can be seen as an intermediate product. In the One Stop Shop case for example, these are represented by the single verified application forwarded by the back-office to the single administrations, in order to obtain the final license. If a bad performance affects one intermediate result this will consequently influence the performance of the subsequent internal area, and so on along the structural chain of the organization, until the final product is reached (Bianchi, 2010).

Using this perspective, allows to easily identify the area of competence and the first responsible of the generated inefficiencies.

In conclusion Bianchi synthetically states : "the design of a performance-management system requires that the chain of final and intermediate products delivered to both external and internal clients be fully mapped. It also requires that the underlying processes, responsibility areas,

assigned resources, and policy levers be made explicit. These design requirements can be described as an objective view of performance management"[15].

Figure 4

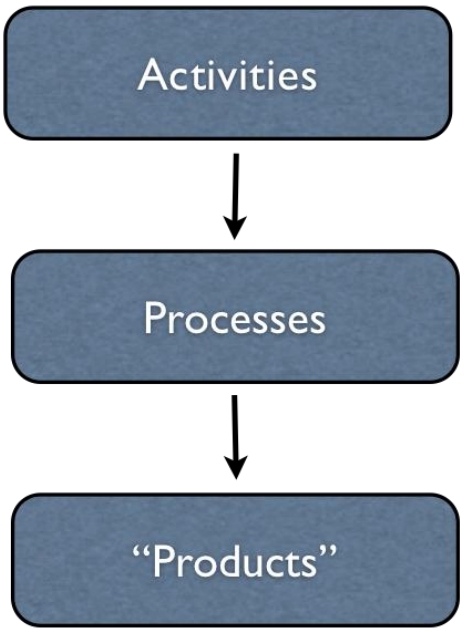


Figure 4 *The objective views of performance (Bianchi, 2012)*

The instrumental view implies alternative means to improve performance. In fact This prospective aims to identify a set of proper performance indicators, based on the relationships between the end results (outcomes) and the strategic resources. This view is defined instrumental since it identifies a set of levers of intervention (the instruments), connected to the critical success factors that can be directly influenced by decision makers (Cosenz, 2011). Moreover, how strategic resources are used inside the system become crucial to determine the drivers of performance. The latter are significant for an organization, since they influence the final results.

[15] Bianchi C. 2012. *"Enhancing performance management and sustainable organizational growth through system dynamics modeling"*. In *"Systemic Management for Intelligent Organizations: Concepts, Model-Based Approaches, and Applications"*, Groesser, S. N. & Zeier, pag. 143-161

It is fundamental to express performance indicators, basing the analysis on such drivers in order to, understand and clarify the single contribution that they may provide to achieve the end results, both at a global and organizational unit level (Ewell,1999).

Drivers can be measured in relative terms; it is possible to represent them as ratios between the actual value of an identified variable, and its relative reference such as a benchmark or a target level (Bianchi, 2012).

"In order to affect such drivers, each responsibility area is expected to build up, preserve and deploy a proper endowment of strategic resources, that are systemically linked to each other"[16]. The strategic resources are the key factors that allow processes to start. When the management of a system is not efficient, the end results generated by an organization, will gradually consume the initial set of resources. Whereas, an efficient administration generates value, that can be transmitted from the end results to the strategic resources, creating reinforcing feedbacks. "The end-results provide an endogenous source in an organization to the accumulation and depletion processes affecting strategic resources"[17] (fig. 5).

Only if the created value is superior to resource consumption, it is possible to speak about an accumulation process. For example liquidity, that can be represented as a strategic resource, changes because of the cash flow; if the incoming cash flow is higher than the outgoing, then an increase of liquidity stock is detectable .

[16] Bianchi, C. (2010). Improving Performance and Fostering Accountability in the Public Sector through System Dynamics Modelling: From an 'External' to an 'Internal' Perspective. *Systems Research and Behavioral Science*, 361-384.

[17] Bianchi C. 2012. *"Enhancing performance management and sustainable organizational growth through system dynamics modeling"*. In *"Systemic Management for Intelligent Organizations: Concepts, Model-Based Approaches, and Applications"*, Groesser, S. N. & Zeier, pag. 143-161

Figura 5

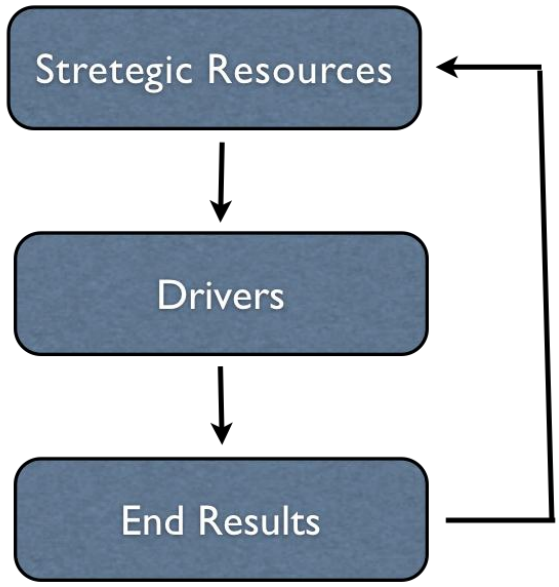


Figure 5 *The instrumental view of performance (Bianchi, 2012)*

The subjective view can be seen as a synthesis between the objective and the instrumental dimensions. This perspective clearly identifies the goals, the related activities & processes, the final and intermediate results, all referred to each decisional area examined. In relation to the established objectives, the intent of this view of performance is to make explicit, all the activities that are part of every single process, and the relative indicators. This dimension requires end results and drivers to be related with the respective objectives and goals that have been decided in the planning phase (fig 6).

On this regard, performance indicators must be expressed in relative terms, rather than absolute: the obtained results have to be compared with the expected or planned one.

Figure 6

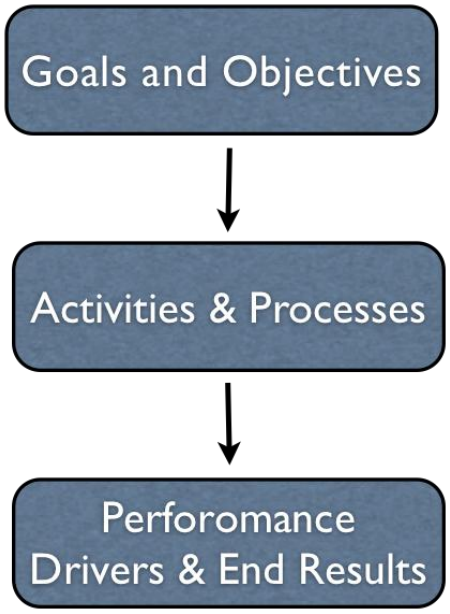


Figure 6 *The subjective view of performance (Bianchi, 2012)*

These three views, play a complementary role inside an organizational system; they focus on different aspects. The objective view defines the object of performance management, the instrumental perspective highlights the instruments able to affect the end results, while the subjective view concentrates on the identification of the so called decisional areas, responsible for the accomplishment of the related activities among the organizational units. Applying these performance dimensions can support the administration in a learning oriented approach.

These three views actually interact with each other, the use of one does not exclude the application of the other two.

Figure 7 (Bianchi, 2012) Gives a general picture of the dimensions of performance showing their interactions. The first step is defined by the Identification of the products of an organization. Once they are detected it become necessary, moving backward, to outline the processes and the activities, underlining their causal and effect relations. Then is relevant to clarify the goals and objectives that were planned in every single responsibility area. To obtain a good performance,

such goals need to correspond with the end results, achieved through the pressure applied on drivers, and by the management of a given set of strategic resources. End results should describe if an organization can respect the several expectations coming from different set of clients and stakeholders regarding the provided products (Bianchi, 2012).

Figure 7

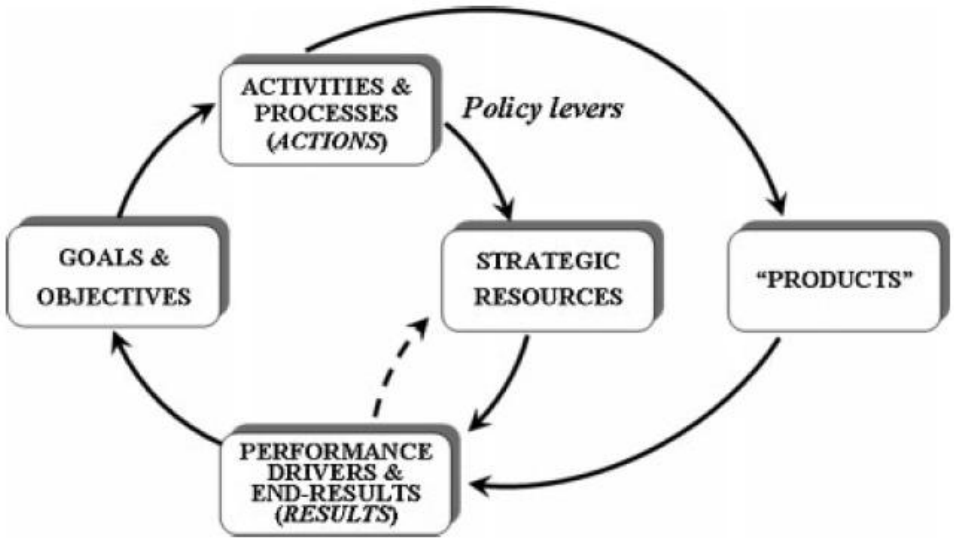


Figure 7 *General picture of the three view of performance (Bianchi, 2012)*

These perspectives imply an extension of the horizon of analysis in relation to the ordinary tools used for the government of an organization, such as financial and economical indicators. Performance management includes many different categories of variables and instrument for performance evaluation. Furthermore, applying these views will combine both short and long period perspectives, thanks to a more accurate and analytical activity of planning and control. In fact including the analysis of "product" quality, of efficiency and effectiveness, of organizational procedures, and customer satisfaction will expand the old dimension of the P&C towards a systemic vision of the administration.

As was already pointed out, these three views, and PM broadly speaking, bring many advantages among management resources and P&C activity. On the other side, if PM is not fully implemented inside an organization, some criticalities could emerge. Such can occur:

- the predominating mentality to analyze, or at least give more attention, to the financial and economical measures, ignoring the other dimensions of performance
- a poor selectivity of key variables, in favor of different types of indicators, mostly unnecessary, that can create confusion during the lever of intervention selection process (Bianchi, 2004)
- subjectivity of performance indicators, that show a lack of reliability in compliance with the detected information (Ittner C., Larcker D., and Meyer M. W., 2003)

Taken those criticalities into account, it is also relevant to consider the so called dynamic complexities of systems. As a matter of fact, performance management deals perfectly with static environments and complexities, namely the ones determined by a well defined number of variables that interact with each other according to uniform and regular relations[18]. Different is the case of PM dealing with dynamic complexities, which base their nature on uncertainty and unpredictability of the causal relationship between the variables that are object of the study. To tackle dynamic environments it is necessary to find a methodology that is able to understand, non-linear relations, time delays between cause and effects, and use balance approach, of the adopted strategies, between long and short term (Cosenz, 2011).

Palermo's one stop shop case study that will be analyze in the next chapter, faces such dynamic complexities, both referred to the external environment and to the internal organization. With the intent to reduce the effect of the mentioned criticalities, it seems appropriate to support the strategic performance management with other tools and methodologies. With this intent, in order to provide a solid perspective of performance, a multi-method approach is suggested: "Using

[18] Read more in Sterman J. 2000. *"Business Dynamics. System thinking and modeling for a complex world"*. Irwin/McGraw Hill, Boston;

multiple methods has the potential of gaining knowledge about different aspects of a phenomenon under study, and therefore, an overall better and more complete explanation"[19].To develop a multi-method approach PM will be supported by System Dynamics (SD) methodology. The author decided to implement PM with SD since the latter is perfect for modeling and simulating a public administration performance, because it supports decision makers in framing and understanding dynamic complexities inside and outside organizations, and fosters the design and implementation of eventual sustainable policies (Forrester, 1958; Sterman, 2000). SD is able to understand and govern the dynamic complexities of systems, studying the cause and effect relationships among the main variables identified. In detail what will be pointed out is how the combination of both PM and SD can provide decision makers to detect the key variables, understanding the mechanisms behind each relation and feedback, and the consequence that a possible intervention on the policy levers can generate.

The next paragraph will introduce and explain the System Dynamics methodology, how it is articulated, which are its main characteristics, and how it is possible to model a system with the support of some relevant tools that can be used to give a deeper perspective of a specific phenomenon.

3.5 System Dynamics Methodology

System Dynamics methodology was developed, in the late fifties, by J.W. Forester, an electrical engineer, at the Massachusetts Institute of Technology (M.I.T.) located in Boston. After its development SD, initially designed for business management, was used to analyze different

[19] Gil-Garcia, J.R. & Pardo, T. (2006) "Multi-Method Approaches to Understanding the Complexity of e-Government" International Journal of Computers, Systems and Signals, Vol.7, No.2.

areas of interest. It did not take long before it was also applied to public sector issues (Wheat, 2010). It is possible to apply the use of SD in different contexts, since it aims at investigating dynamic complexities and non linear behaviors through the creation of models based on computer simulation of feedback structures, able to reproduce the behaviors of the phenomena under analysis. SD was not founded to be confined within specific boundaries but to be a universal tool applicable to dynamic complexities.

In detail this methodology seems appropriate to solve criticalities in those systems that show the following features (Bianchi, 2009):

- an environment characterized by a complex structure, not easy to comprehend due to the lack of information and to the cognitive limits of decision makers
- the existence of levers that can be influenced by decision makers, in order to affect results towards the desired goals
- a different sensitiveness of results due to the effect of exogenous variables
- a verifiable difference of variable trends between the short and the long run
- Temporal delays of the system referred to the adopted policies

SD is a relevant tool to analyze complex systems. According to Sterman (2012) a complex system is such since it reflects some characteristics:

1. Policy resistance. This is based on the suspect that a policy, not only fails to solve problems but actually helps to cause them. Most of them focus their strategy, based on a myopic short period; so, reduces the effect in the present but will not prevent an even bigger problem in the long run
2. Feedback. Almost nothing is exogenous, today it is possible to control and influence almost every aspect of reality even if we are not able to recognize these effects: “our actions may

trigger so-called side effects we did not anticipate" [20]. Analyzing our behavior and understand the relations between cause and effect will help us to identify the feedbacks of a system and how is possible to affect them.

3. Nonlinearity. The interactions between feedbacks in a complex system, are in the most of cases nonlinear.
4. Tipping points. Due to the nonlinear relations sudden shifts in resources can happen.
5. Eroding goals are particularly common in sustainable contexts, due to our imperfect understanding of dynamics environment. Because bounded information, variability, and bounded rationality on population dynamics, calculation of stocks and the related maximum capacities are uncertain. Therefore, desired stocks are vulnerable to political pressure
6. Time delays. Delays are really common in complex systems. This is a relevant matter that especially influence policy effects. Once a policy is identified and applied, it takes time before it can produce an effect on the environment. In complex systems, where the relationships between feedbacks are many and related by many cause and effect chains, before perceiving an effect of an implemented policy, this has to pass through every relation, before an outcome is actually influenced.
7. Stocks and flows. These are fundamental in a complex system, and show two different types of behaviors. One is accumulative, represented by the stock variable, while the second, the flow, represents the cause of the mentioned accumulation process. It is possible to distinguish two different flows, the inflow, which is the incoming one that adds value to the stock, and the outflow, which is the outgoing one that actually drains the stock. If the difference between both, namely the net-flow, is positive then the stock increases and generates accumulation. On the contrary every time this difference is negative the stock reduce its level; no accumulation is verified.

[20] Sterman J.D. (2012), Sustaining Sustainability: Creating a Systems Science in a Fragmented Academy and Polarized World, M.P. Weinstein and R.E. Turner (eds.), *Sustainability Science: The Emerging Paradigm* 21 *and the Urban Environment*, DOI 10.1007/978-1-4614-3188-6_2,

Basically, with the support of SD, it is possible to understand the structure and the dynamics of the observed systems, thanks to a learning oriented perspective, stimulated by the comparison between the reality and the realized simulations. According to Bianchi, System Dynamics differs from traditional methodology, because, based on the mentioned comparison decision makers are allowed "to continuously review the assumptions previously made to extrapolates keys of interpretation that allow to understand and deal suitably with the complexity of the phenomenon observed"[21]. Decision makers can interpret the reality by setting up the cause and effect relations between the variables of the system. This procedure leads to the construction of a simulation model, based on representation of these relations, and the levers of intervention through which is possible to intervene and influence the system. These simulations are developed with the support of specific software such as Powersim, Ithink and Vensim.

The simulation process highlights the behavior of the key variables over time, and shows the results of the chosen policies in order to clarify which one can be the more appropriate to reach the set goals.

SD simulations do not focus on the spasmodic research of the exact values associated to the key variables, but, more importantly, aims at showing the pattern of those variables over time, how they react to the adopted policies, providing decision makers with the necessary awareness of delays, cause and effect relations, and exogenous restrictions of the system under analysis. SD contribution does not focus on the identification of the best political solution in order to settle the identified criticalities, but rather explains the relevant parts of the system and how their dynamics develop over time. The aim of this perspective is use the SD simulations to support a learning oriented approach among decision makers, through a continued comparison between reality and the adopted model.

[21] Bianchi, C. (2009). *Modelli di System Dynamics per il miglioramento della performance aziendale. Verso un sistema di programmazione e controllo per lo sviluppo sostenibile*, Milano, IPSOA.

"The learning capacity of a system helps decision makers to understand the sources of uncertainties, inside and outside the structure, and to elaborate strategies in order to improve the performance in a sustainable perspective"[22].

Creating a SD model is not an easy task; an accurate analysis of the organization and of its external environment is required. A learning process towards its dynamics is necessary. Once the picture of the system is clear, and its main variables have been identified, it is necessary to create links among them able to express their cause and effects circuits. Those circuits explain the behavior of the identified relations, helping decision makers to understand the reasons of a specific trend, pointing out the performance drivers and the levers of intervention.

In detail, it is possible to distinguish two types of relations that characterize causal circuits: direct and indirect. The first one, are expressed by a "+" sign. A variation of one variable, either positive or negative, causes a change in the same direction, of the one which is connected to. The indirect relations, represented by a "-" sign, have an opposite behavior: an increase of one variable generates a decrease of the linked one, and vice versa (Sterman,2000).

Based on the above, it is possible to distinguish between to different modeling approaches:

- qualitative
- quantitative

These tools support decision makers with different contributions, both targeting the understanding of complex systems and their dynamics.

[22] Cosenz, F. (2011). *Sistemi di governo e di valutazione della performance per l'azienda università*. Giuffrè, Milano.

3.5.1 Qualitative Modeling Approach

The qualitative modeling approach aims to highlight the logical relations upon a system. Its duty is to recognize the causal relationships among the variables identified, and to define the direct and the indirect one. After this process, it will be possible to verify the polarity of the feedback under analysis (balancing or reinforcing).

In System Dynamics the qualitative approach is realized with the support of a specific tool, the so called: Causal Loop Diagram (CLD). CLDs are represented as conceptual maps that show the existing cause and effect relations of a system. In detail, a Causal Loop Diagram captures the feedbacks (Sterman J., 2000) and identifies which one produces a specific dynamic behavior. The relationships among variables are expressed by arrows. The arrowheads are signed with a "+" or "-" based on the type of existing relations; as was underlined in the previous paragraph, in case of a "+" the effect is positively connected to the cause(direct), in case of a "-" the effect is negatively connected to the cause (indirect) (Sterman, 2012).

Once the signs among the relationships represented in the circuit are calculated, it is possible to define the polarities of the whole structure by estimating the dominance between the identified relations. If the direct connections are dominant then the circuit is defined reinforcing; an "R" will express this specific polarity of the system. This particular case generates an exponential behavior that can be represented either in terms of growth or decay. On the contrary, when indirect relations are dominant, the feedback is defined balancing, while its polarity is expressed with a "B". Balancing circuits create goal-seeking behaviors. "Of course, no real quantity can grow forever. There must be limits to growth. These limits are created by balancing feedbacks.(...) All systems, no matter how complex, consist of networks of reinforcing and

balancing feedbacks, and all dynamics arise from the interaction of these loops with one another."[23].

Qualitative approaches, on one hand, do not provide real model simulations because quantitative data are not involved. The development of qualitative analysis, on the other hand, can be seen as a prerequisite for a quantitative system dynamics modeling activity, and also as a free standing conceptualization based on system thinking, providing some level of insight by inferring rather than calculating the system represented (Wolsteholme, 1990).

The figure below shows an intuitive example of a CLD

Figure 8

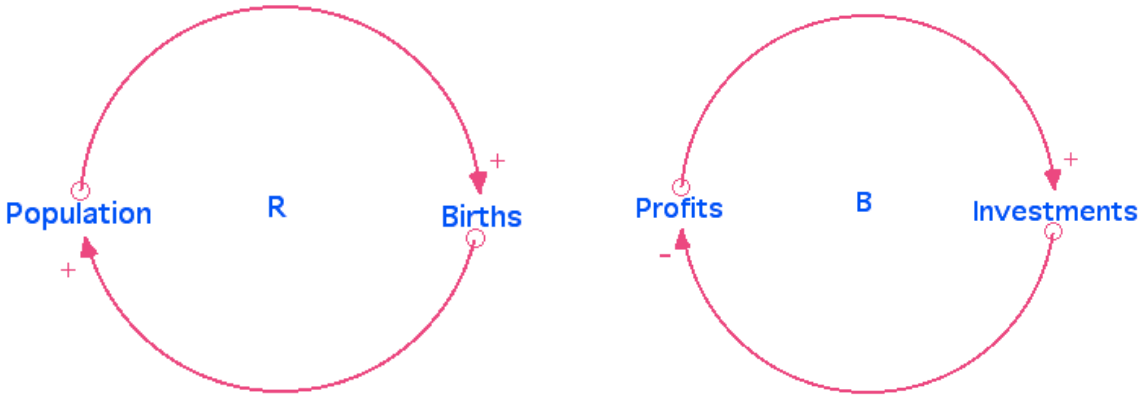


Figure 8 *Reinforcing and balancing Causal Loop Diagram*

CLDs and qualitative analysis, can be seen as a real effective instruments since they provide a first and simple graphical interpretation of the problem investigated. Not only do they clarify the cause and how they connect to the related effect, but highlight the fundamental feedback mechanisms and which one is dominant in the specific case taken into account. Also, using this type of structure allows to underline delays, policies, boundaries, and enables to anticipate possible, not expected consequences; this tool allows managers to access to the power of system

[23] Sterman J.D. (2012), Sustaining Sustainability: Creating a Systems Science in a Fragmented Academy and Polarized World, M.P. Weinstein and R.E. Turner (eds.), *Sustainability Science: The Emerging Paradigm* 21 *and the Urban Environment*, DOI 10.1007/978-1-4614-3188-6_2,

thinking (Wolstenholme, 1998). Of course, if on one hand CLDs are not to complex to built, on the other, they generate a lack of precision because they totally ignore the quantitative perspective of the phenomenon. Furthermore, the simplicity that lies behind the application of CLDs can be seen at the same time as a limit, in fact it is easy to apply inappropriate insight to problems. Another criticism that was pointed out was that "the ability to become expert at causal loop mapping requires people to have undertaken much quantitative modeling and that this issue is never explained by its proponents" [24].

Even known that this particular tool as its strengths and limits, it is important to ensure a certain level of scientific rigor, even if the only perspective of analysis is a qualitative approach. It is relevant to focus on methods and techniques that follow precise logical paths.

3.5.2 Quantitative Modeling Approach

In System Dynamics the quantitative modeling approach is based on computer simulations made with the support of specific software, such as Powersim, Ithink, Vansim and others. These software are used to capture the structure of a system and represent its dynamics with the support of the instruments provided by the computer simulators. Quantitative models are realized by entering inside the variables their respective quantitative data, and by typing the identified functions/equations, that explicit the relation between the linked variables, in order to provide a graphical simulation over a defined period of time.

The variables used to built a System Dynamics quantitative model are classified as follow:

[24] Wolstenholme E., 1998 "Qualitative v. Quantitative Modelling: The Evolving Balance", 1998 International System Dynamics Conference

- Stock. It is a particular type of variable based on the principle of accumulation. Stocks express the level and the variation of the strategic resources, tangible or intangible, inside a system in a well defined time horizon. In detail those variables represent the productive factors from which is possible to obtain the end results after they are processed by the inside mechanisms. Figure 9 shows how a stock is represented:

Figure 9

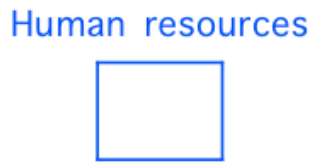


Figure 9 *Stock variable representation*

- Flows. These variables are the only responsible of accumulation and depletion process of stocks. SD methodology identifies two type of it, the inflow which represent the incoming flow that increase the level of the resource inside a stock, and the outflow which is responsible for its reduction. If the inflow level is higher then the outflow is possible to talk about accumulation. On the contrary, when the outflow is higher then the inflow is possible to talk about a depletion process. Flows represent the end results that affect the variation of the strategic resources. Figure 10 shows a graphical example of flows variables

Figure 10

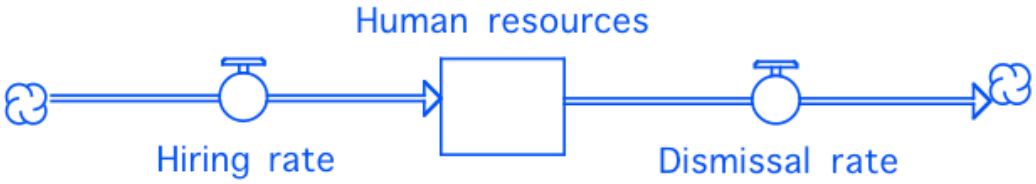


Figure 10 *Inflow and outflow representation*

- Auxiliary variables. They are used in order to develop intermediate calculations, that are fundamental for the comprehension of the model. They can represent the performance

driver, crucial for the transformation of the strategic resources into end results. Their graphical representation is the one showed by figure 11

Figure 11

Figure 11 Auxiliary variable representation

Chapter Four

Dynamic Performance Management applied to the One Stop Shop: Palermo's S.U.A.P. case study

4.1 Introduction

Taking into account that Palermo is the capital of Sicily, the administrative center of the region, and based on the number of citizens is the fifth largest city in Italy. It is understandable that the public administration deals with severe complexity. Providing the necessary services and organize a balanced bureaucratic mechanism, is not a simple task in this environment. To promote a slimmer bureaucratic system, the One Stop Shop was seen as a possible solution, not only to simplify the relations between P.A. and its citizens, but also to foster economic development in Palermo's urban area.

Combining faster procedures, that will allow the opening of new business activities, with an efficient and qualitative outcome of service, will generate a positive feedback that promotes economic development in the territory. An economically developed urban area, creates a gravitational force of attraction for new potential activities.

This chapter will analyze Palermo's One Stop Shop. It will verify the efficiency of the service, and its effects on the reduction of bureaucracy time, behind the opening of new activities.

4.2 Palermo's One Stop Shop Organizational Structure and Description

Palermo's One Stop Shop or SUAP according to the Italian law (born in 1998 after the emanation of the P.D. 447/1998), is a complex structure, built to reduce the bureaucratic system behind the articulated field of concessions and permits, needed for any new business activities. The agency works has a trait d'union between the public administrations responsible for the procedures and the entrepreneurs.

The general structure changed over time due to the reforms explained in chapter 2. The P.D. 447/1998 sets a first structural division in the One Stop Shop, into front and back office (see table one, Chapter 2). A new change in the organizational structure was set by the national government with P.D. 160/2010. The most significant innovation focuses on the abolition of the physical structure of the front office in favor of a telematic portal, built with the mean of simplifying and improving the efficiency of the service, and to provide the necessary documentation to clients, through an the improved web system. The aim of this innovation was to reduce the time needed for every single procedure, and increase the quality of its service.

Today, the Palermo's One Stop Shop organizational structure is very articulated. The service is divided in many areas, each-one with their own tasks, objectives and goals.

In the organization chart of Palermo municipality the One Stop Shop is part of the macro-area of "development policies and structural funds". This sector is under the control of a public manager who is responsible for every sub-structure and activity that are within the competences of the macro-area mentioned. The latter is divided into three main sub-sectors: direction/secretariat, services for planning of structural funds and underutilized area, and One Stop Shop service. SUAP itself is divided in two sections: the technical and the administrative areas. Both are constituted by operational units. The technical office is responsible for all of the real estate construction procedures, that are needed for the beginning of a business or production activity.

Also, renovation procedures and reconversions of productive activities are included in this operational area. this sector is made just by one operational unit called technical office, it is made-up of 12 employees. One of them is the unit responsible, the other eleven are all technicians.

The administrative section is more complex and articulated. This side of the One Stop Shop regulates all the administrative procedures of the service, in all its cases. While the technical sub-sector is responsible for constructions, the administrative takes into its matter all the bureaucracy behind every single step required to open of new activities. So it has the entitlement to attempt all the necessary procedures, from the submission of the application to the final report that closes the single case. SUAP administrative side is composed of 6 operational units (O.U.) :

- O.U. 1 private retail business
- O.U.2 food and beverage
- O.U. 3 business activity on public area and local markets
- O.U. 4 sanctions and withdrawals
- O.U 5 installations of fuel distribution, business agencies, garages, services, taxies and rentals
- O.U. 6 craft activities, accommodations, hairdressing activities, estheticians, general and accounting affairs

There are other two offices, that are not classified as operational units, that operate separately from the administrative and technical area:

- public relation office - certified e-mail office
- protocol

Each operational unit has its own boundaries and objectives related to their own area of responsibility. Once the O.U. has been identified, it will be its duty to take into its matter all the necessary procedures for the fulfillment of the submitted requests. Each unit is coordinated by an administrative official, responsible for its own specific area of interest. Under its coordination

there are other public employees. Each unit has a different number of workers, they are proportionate to the amount of workload.

Each section, is organized to provide an heterogeneous team of employees, selected with the support of different quality parameters, that are set by Palermo's municipality, in order to rank workers for their competences, responsibilities and duties. The responsible of the operational unit_who represent the highest class level among unit operators is classified D/3. The other public officials are categorized from level B/1, which is the lowest grade among One Stop Shop employees, to B/3, C/1 and D/1. Different grades correspond to different professionals categories that carry-out different duties. The Higher the grade, the higher are the responsibilities and the required skills to complete their tasks. Table 3 shows in detail the above classification.

Table 2

municipality employees ranking	
B/1	IT system professionals / Administrative collaborator
B/3	Administrative collaborator
C/1	Administrative officer / Assistant for firm services
D/1	administrative expert / Expert for firm services
D/3	operational unit responsible

Table 2 *categories of employees*

It is also important to mention that higher level of competence, implies higher wages, meaning more resource consumption. That is why, it is difficult to hire a workforce composed of mostly

high ranked quality workers; instead, it's more realistic to balance these human resources among different units. A more uniform distribution of workers is the criteria adopted by the One Stop Shop.

Its internal organization is composed of a total of 87 employees. The technical area, as already mentioned, is made-up of just one O.U. that consists in 12 workers. This is the only O.U. which has one C/1 official, while the other employees are all technicians, including the responsible of the unit. The administrative area is composed of a total of 59 workers, redistributed in six O.Us.. The first one, private retail and business, consists in one D/3 unit responsible, three D/1, six C/1 and four B/1 officials, for a total of 14 professionals. O.U. 2 has three B/1, three C/1, plus one administrative functionary and one D/3 unit responsible, for a total of 8 workers. O.U. 3 is made-up of a total of 13 employees, they are divided in two B/1, two B/3, five C/1, three administrative employers and one D/3 responsible for the unit. O.U 4 is organized by eight professionals, two of them are B/1 level, one B/3, two C/1, two D/1 and one D/3 unit responsible. O.U 5 consist in 11 staff members, two rank B/1, two B/3, five C/1, one D/1 and one D/3 unit responsible. The last and sixth operational unit - craft activities, accommodations, hairdressing activities, estheticians, general and accounting affairs - is the smallest one in terms of human resources and consist just of two B/1, two C/1 and of course one D/3 head administrative official.

On the other hand, the protocol office, responsible for document registration, is divided in four sub-areas: protocol, protocol forwarding service, protocol publication service, certified email office. The whole protocol area is made-up of eleven employees, that are divided in four categories, nine B/1 level, consisting in administrative collaborators, two C/1 assistants for firm services.

The Public relation office consists just in four workers, one D/1 administrative expert responsible for the office, two C/1 and one B/1 administrative collaborator. This office during the past years has drastically reduced its employees, but it is still operating. On this matter,

according to PD 447/2010, no front office should be allowed in favor of a totally web supported service.

After four years the public relation office is still present inside the structure of Palermo's One Stop Shop. This singular situation is the cause of some relevant issues among the system. First, the reference law peremptorily stated the closing of all front offices as one of the crucial points of the reform. Second, maintaining this structure operative, while a more advanced platform has been developed, generates non needed costs.

Third, the front office slows down the computerization process. In fact users that are not confident with IT, will continue to avoid the more efficient web portal in favor of a physical office. The main problem with this specific case is based on the time reduction, that the web support is able to provide to the mechanisms of the system.

It is clear that overlapping two different approaches with two different speed of execution, one slower coming from a front office to a back office, and another coming from the user directly to the back office, can generates chaos among the internal organization. Workers receive a specific number of files via telematic and some others, physically delivered from the public relation office. These two incoming flows can lead to different consequences: confusion among workers that face a huge amount of applications, without really understanding which file is the first to be taken into their matter, and a possible omissions due to a physical loss or to a number of oversights.

To foster performance improvement of the One Stop Shop and switch to a totally web supported service, the front office must be inoperative.

The described structure of Palermo's SUAP, is shown in Figure 12. What emerges from the analysis of the provided documentations, and from the graph below, is that no organizational structure has been found inside the O.U.. In other words, this means that each section is organized by taking into account just its own targets and objectives, without assigning specific duties to the human resources or divide them in sub-categories. This can be important, in order to

better organize the work schedule among workers, and better clarify everyone roles inside every offices. By avoiding this mechanism the risk is to create a unit where everyone works on everything, while it would be more productive to classify and specialize every single employee on particular tasks. A better internal organization can improve the results and performance of every single operational unit. This solution can be eventually suggested as one of the possible policies to support the organizational growth of the One Stop Shop.

Figure 12

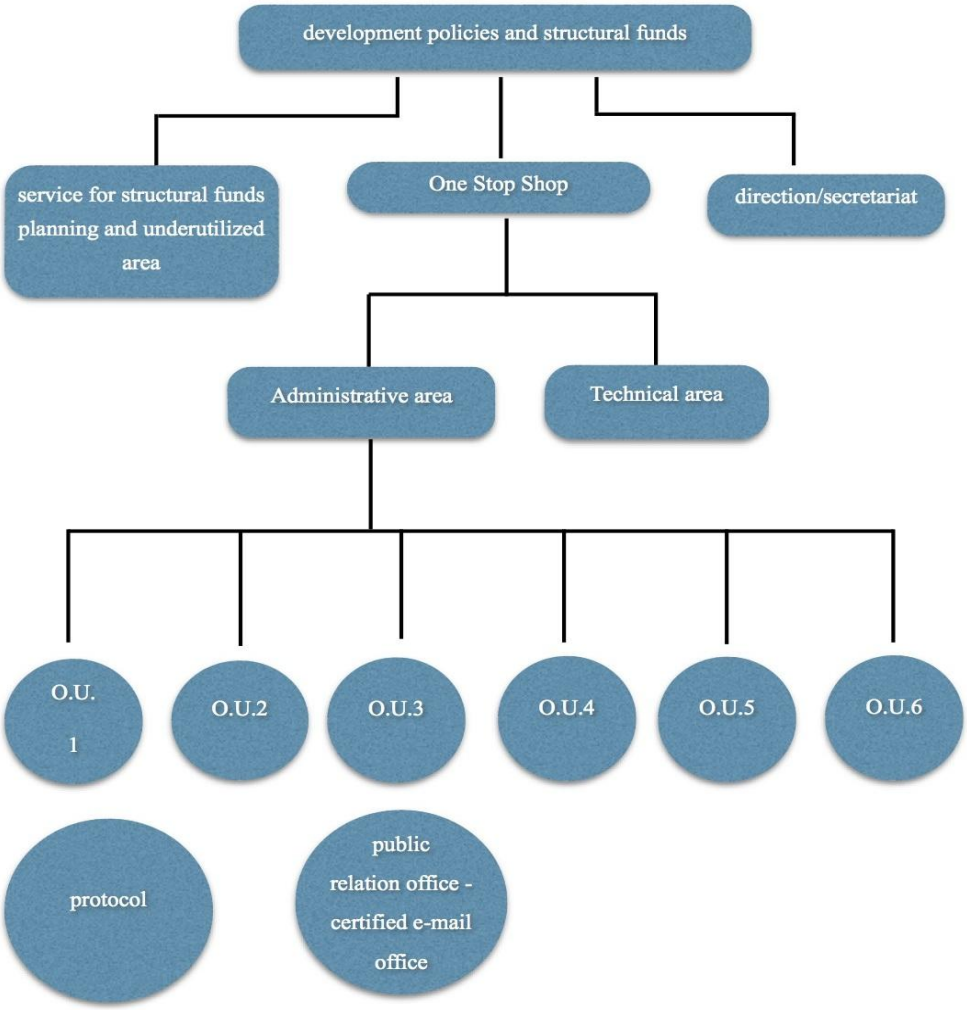


Figure 12 *One Stop Shop structure description*

All the operational units are crucial and complementary for the One Stop Shop activity. Trying to analyze them all, would be a complex task to solve in just one thesis. To simplify the work

without losing any reliability, this dissertation will study the "private retail businesses" operational unit as a reference for the entire structure. The author based his choice on the fact that this O.U. is the largest among Palermo's One Stop Shop, and its mechanisms replicate all the relevant dynamics of the structure. Each unit's processes are similar the one that characterize the private retail business area, that's why focusing on it will create a clear picture of the whole system.

4.3 A First Analysis of Palermo's One Stop Shop Processes and Products

To go further on, the next step is to move from synthesis to analysis. In doing so it is necessary to outline the macro-processes, and go in detail highlighting intermediate products and activities. Every macro-processes of the service produce a specific output or an individual product. Such outputs are the result of the fulfilled administrative tasks reached by the back office in favor of an internal client (Bianchi, 2009). Of course the performance in delivering an individual product will influence the performance of the internal "client" who will receive it. Eventually it will affect other internal clients, subsequently placed along the chain of the internal processes. To study such "individual products" it becomes crucial to identify first the "top middle management" areas inside the institution, and then the intermediate product produced by those areas, necessary to obtain the mentioned outcomes. Decisions made upon this middle-level are crucial for the coordination of activities of the linked offices, and for the role that they play in managing the strategic resources. Focusing on this level of performance is an important requirement because it fosters empowerment and the accountability of managers operating under the supervision of their department director.

A missing evaluation of the involved variables affecting those "middle-areas", won't allow a correct identification of the levers of intervention, on which is possible to intervene to affect the performance drivers that consequently generates an impact on the outcomes.

The next step is to made explicit the single processes related to the macro processes already identified. Their results can be associated with an output coming from an administrative task, that can be referred to an intermediate product (Bianchi, 2009); an example could be a specific procedure that is mandatory for processing forward the application to the next internal "client". "The identification of macro processes, of related individual products to the benefit of internal customers, and performance measures, strategic resources and policy levers on which decision makers must focus their attention, provides the first step for implementing our model."[25] Figure 13 synthesize with a schematic perspective the procedures explained above.

Figure 13

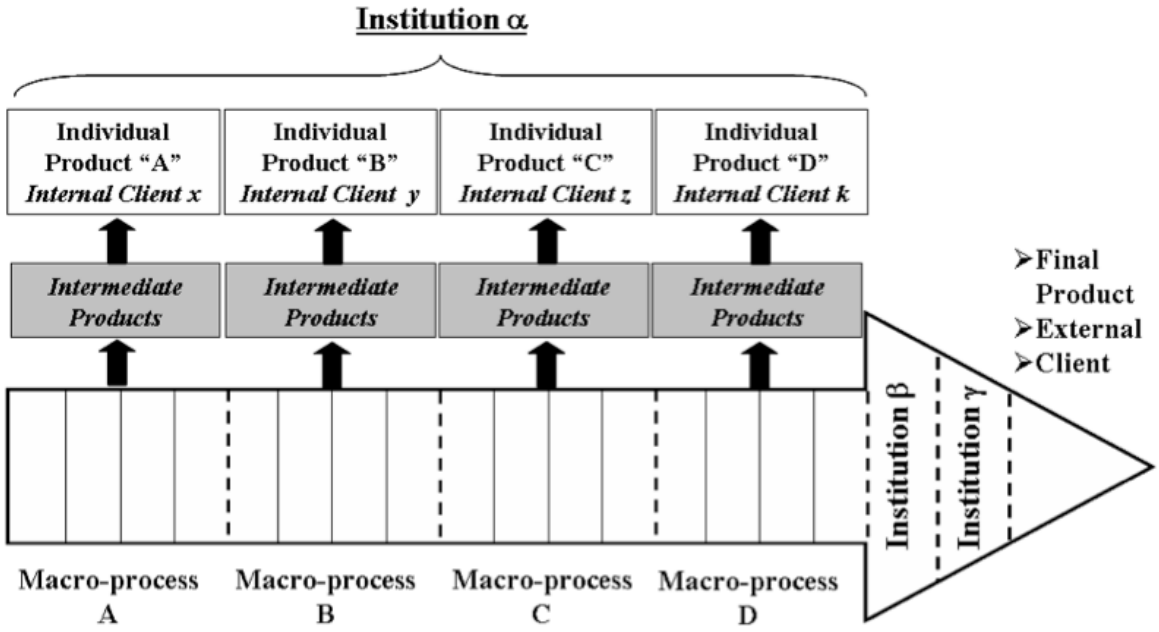


Figure 13 *analysis of product and processes created by the fulfillment of administrative tasks according to the identifications of the macro-processes (Bianchi, 2009)*

[25] Bianchi C., 2009 "Conceptual models and operative tools for improving customer satisfaction in the public sector reflections on the italian experience" Paper presented at the 1st International SMOG Conference 2009

In the light of the above analysis, it will be possible to underline the macro-areas, the final products, the external clients and the macro processes of the One Stop Shop. The macro-areas on which the SUAP operates is the one called "development policies and structural funds" coordinated by an area manager. The external clients, as already underlined in previous argumentations, are the citizens, the final users of the service. The final product is the authorization provided to the user in order to open new business activities, while the aim of the service is to achieve the final product in a more efficient way. The macro processes identified in the structure are the ones made explicit by the single O.U.. In the specific case of the "private retail businesses" unit, these are the ones related to the preliminary control activity, to the relationships with the external administrations and to the release of the final report. Every single unit is coordinated by one manger who is in charge of administrating and controlling the procedures inside its own office, and is directly responsible for the efficiency of the division.

To go further and clarify the intermediate and individual products, and single activities it is necessary to focus our attention on the processes of a single application. In order to do so, it is important to give a specific perspective based on the pattern's description of a submitted instance, trough every single process, clarifying the sub-units involved and the employes responsible for each task with the intent to guarantee more accountability among each internal divisions.

4.4 Framing Palermo's One Stop Shop Processes

Palermo's One Stop Shop opened its own web platform in order to fulfill the requirements imposed by the P.D. 447/2010. The web portal was named SUPERA and provides all the necessary documentations to start the submission processes of one application. Also an open

database was realized, on which users can update themselves on the development of their own files.

Once the user decides to open a business activity, he needs an access to the SUPERA web portal. The first step that an entrepreneur needs to do is to apply for an accreditation; after the registration process is complete a confirmation email is sent by the One Stop Shop that authorize the citizen to start the procedure. The next step is to identify the area of his interest to find the correct documentation. Inside the private retail and business operational unit there is a specific classification made by seven sub-categories:

- neighborhood business
- medium structures
- large structures
- special categories of sale
- valuables
- parapharmacies
- special and below cost sales

Every single category has its own documentations requirements. The main procedures are basically two, the SCIA (explained in the paragraph 2.2.3) an the authorization process based on the so called unique instance. There are some differences from one category to another, based on different type of authorizations and number of requirements, for instance, large structures need more attachments and the approval, that is expressed by majority decision from the service conference.

After the user identifies the category of its own activity, he will be able to download all the documents to start and present his instance which consists of three steps:

- identification of the subject
- identification of the object and location

- fulfillment of the documentation

Based on the business category that he chooses to open, he will face a slimmer procedure such as SCIA or a more structured one like the unique instance. SCIA is necessary for a neighborhood business activity, that is characterized by a small surface dimension, not more than 200 square-meters. It is also possible to use it for the medium structure category, whose range is between 201 and 1500 square-meters, only in cases of business buyout, end of activity or in case of structure enlargement that does not exceed 20% of the surface. Parapharmacies, special and below cost sales, and special categories of sale, can also be opened with the SCIA self certification. Of course this procedure requires some relevant attachments depending on the specific case that the One Stop Shop is processing.

On the other hand, the unique authorization instance is necessary for medium structures that don't belong to the exceptions listed in the SCIA cases, and for large structures.

If the user identifies the SCIA process as mandatory for his procedure, its modules need to be filled. The service user must attach all the needed requirements assuming all the responsibility for what he is declaring. Once all the documentation is sent, the entrepreneur can immediately open his activity. The one Stop Shop will forward the application to the municipal police, that will take on its matter the phase of control to verify if everything that was declared is in compliance with the reference law. If one key element is missing, for instance the safe environment certification, the activity will be stopped. If some formal or secondary missing is proved, the entrepreneur needs to provide the missing documentation before fifteen days.

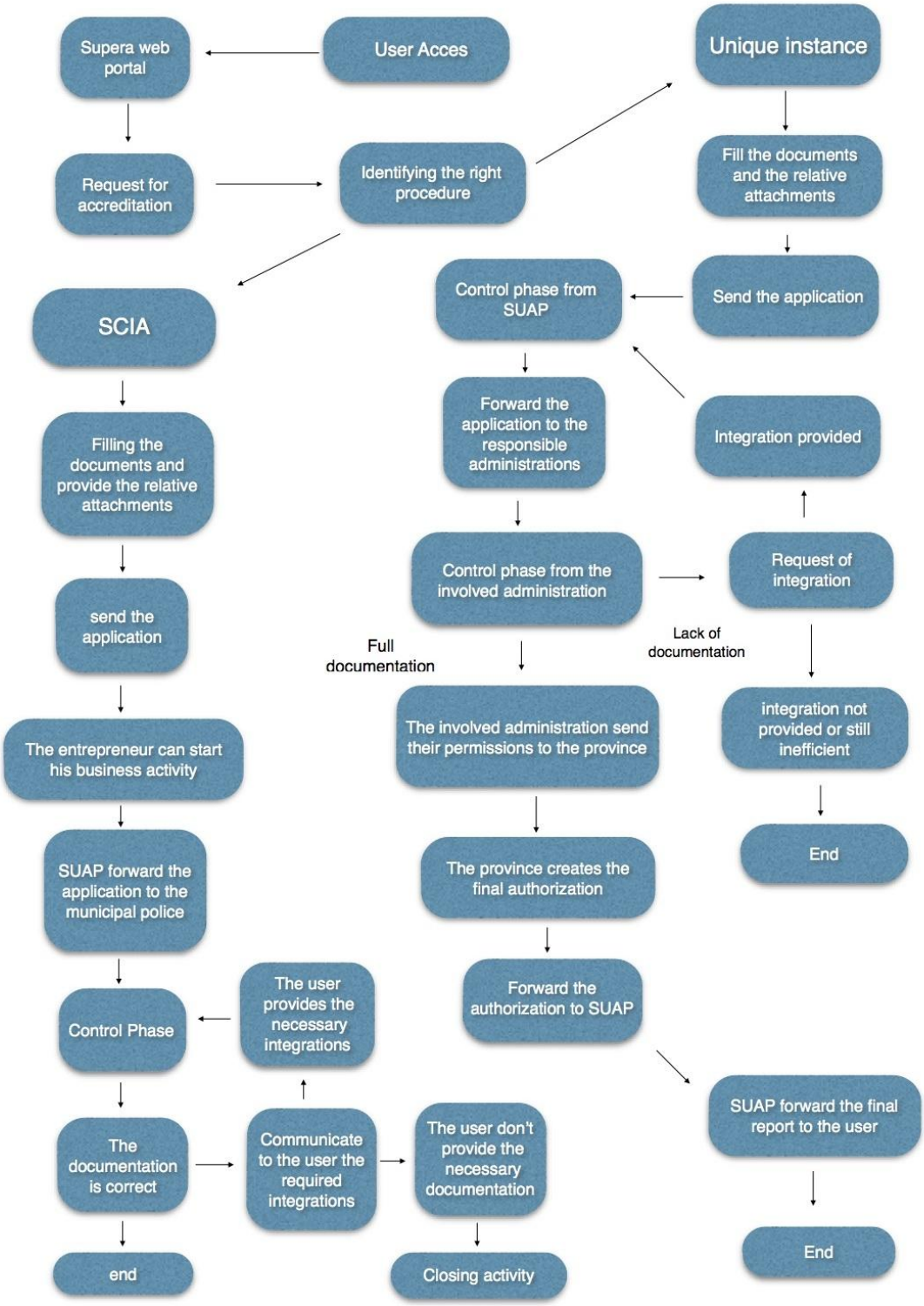
On the other hand, if the unique instance application is mandatory for the entrepreneur, the procedure become more articulated; also external public administrations become part of the process. The main difference with the SCIA is that in this particular case, One Stop Shop needs to gave back to the "client" an authorization before he can start his business activity. The first step is to download the unique instance with the related models and to compile them. The required attachments need to be provided as well. Once the documentation is complete, the user

can send it to the agency with the support of SUPERA web portal. When the relative operational unit receives the files, the preliminary phase begin. This is a very delicate process, in fact the agency has to analyze all the documentation in order to verify if all the requirements are complete and correct; if they are not the One Stop Shop will report the identified discrepancies to the entrepreneur that will have thirty days to provide the necessary adjustments.

After the preliminary phase the agency begin its intermediary role with the other administrations to obtain the mandatory permissions to start the activity. The main P.A. that One Stop Shop face are: region, province, municipal police, local healthcare unit (ASP is the Italian acronym), fire brigades, chamber of commerce, regional authority for the environment (ARTA is Italian acronym is), internal revenue service. The documentation is sent at the same time to all the administrations involved. Once they receive it, they need to start the analysis phase, and give their own authorization. The operational unit responsible has the duty to solicit the public offices in case of delay. The province will collect all the permissions from every single P.A. and create the final authorization that will be sent to the One Stop Shop. The latter will be in charge to forward the certification to the entrepreneur. Only after receiving the final response he will be able to open his own activity. According to the reference law the all procedure needs to be done within sixty days. The public administrations must communicate and send backward to SUAP possible mistakes or lacks among the received documentation. The One Stop Shop will forward the communication to the user that will have thirty days to integrate the application.

Figure 14 shows the necessary steps of the two procedures just explained

Figure14



Fiugure 14 *Graphical representation of the One Stop Shop procedures*

Providing a more structured view, is important to find out what are the intermediate products and the internal client of the Palermo's One Stop Shop. For the SCIA procedures the time

perspective is 30 days and the external subject involved are not many. The first interface is between the entrepreneur and the agency, through SUPERA web portal; the filling time necessary to provide the documentation is on the user rather than on the agency, the latter provides an on-line guide to clarify possible doubts during this first phase.

The first intermediate product is the application send it for the first time. The documentation will pass through an "internal client", a sub-unit responsible for the control, that will verify if the application is in compliance whit the request and regulations of the SCIA, in order to let the entrepreneur open is own activity. Once the documentation is sent, the user can open his business. At this point it seems like the final product it's already provided, but however this can not be seen as a definitive measures, since the post application controls have not yet been made. At this stage the opening of the entrepreneur's activity is an intermediate product. The interactions of the One Stop Shop with the municipal police as an internal client are relevant. In fact, the application is forwarded to the police that is in charge of the the final control phase. Once it's finished, we can detect the final product of the SCIA procedure: the definitive opening of the business activity, or its closing.

Table 3

Intermediate Products	Internal Clients	Final Products
Application from the entrepreneur	Internal sub-unit for control	definitive opening in case of positive control phase from the municipal police
application after the control phase	municipal police	Closing in case of a negative control phase from the municipal police
First opening of the activity		

Table 3*: intermediate products, internal clients and final products of the SCIA procedure*

The unique instance, as already explained is a more articulated procedure. the first step is always in charge of the entrepreneur, who needs to fill the instance and the correlated models to start the application. Once the documentation is sent, the sub-unit responsible of the control take in charge the file, and starts the preliminary phase. If no mistakes are detected the operational unit will transmit the documentation to the related "internal clients" : the province, the local health department (ASP), the department of the environment and territory (ARTA), the chamber of commerce, the municipal police, the internal revenue service and the fire department. Each of them will analyze the application to verify if there any inconsistency. If the process produce the right outcome, the administrations involved must send to the province their own permissions or no impediments. These documents represent another intermediate product. The province on the other hand must collect all the necessary permissions to adopt the final authorization. This document, will be forward to the One Stop Shop who will be in charge to provide it to the entrepreneur. The final outcome of this procedure will be the final authorization that allowed the user to open his business activity. On the other hand, if during the preliminary phase some discrepancies are detected, a request of integration needs to be send to the One Stop Shop from the related administrations. This request is another intermediate product. If the request of integration is still inefficient a different final product will be provided. In fact the entrepreneur will receive an instance of rejection that will not allowed him to open his activity.

Table 4

Intermediate Products	**Internal Clients**	**Final Products**
Documentation send from the entrepreneur	Internal sub-unit for control activity	Final authorization

Permissions from external administrations	External Administrations: the local health department (ASP), the department of the environment and territory (ARTA), the chamber of commerce, the municipal police, the internal revenue service and the fire department.	Instance of rejection
Request of integration from administration	The province	

Table 4: *intermediate products, internal clients, final products of the unique instance procedure*

Underlining the internal clients, the intermediate and final products helps to creates a better picture of the structure and put the basis for the next step of the analysis, a deeper qualitative approach based on the methodologies explained in chapter three.

4.5 A Qualitative Analysis

Understanding the mechanisms of Palermo's One Stop Shop is relevant, but it is just the first step of the analysis that this thesis want to provide. To fully understand how a the structure perform, it is important to underline the resources used to develop this service and especially the levers that a decision maker is able to influence. In doing so the instrumental view, explained in the paragraph 3.4, will be adopted.

This view has been chosen because it focuses more on the instruments on which a decision maker can intervene. This perspective has the purpose to identify a set of proper indicators, that are the link between the end results and the strategic resources. The strength of the instrumental

view is that foster a sustainable growth inside the institution in order to use the value generated inside the organization, to provide an endogenous source able to generate a reinforcing or balancing loop mechanisms.

To apply this perspective, the end-results were made explicit first, as a starting point, to focus subsequently on the identification of those performance drivers that affect them. Then, going backwards, the analysis will be able to identify the strategic resources whose allocation allows decision-makers to influence performance drivers. Regarding this matter, the emerging framework – displayed in figure 15 – shows how One Stop Shop structure was designed, according to an "instrumental" view of performance. Such framework aims to capture interdependencies between both performance drivers with end-results, and these with the strategic resources.

Figure 15

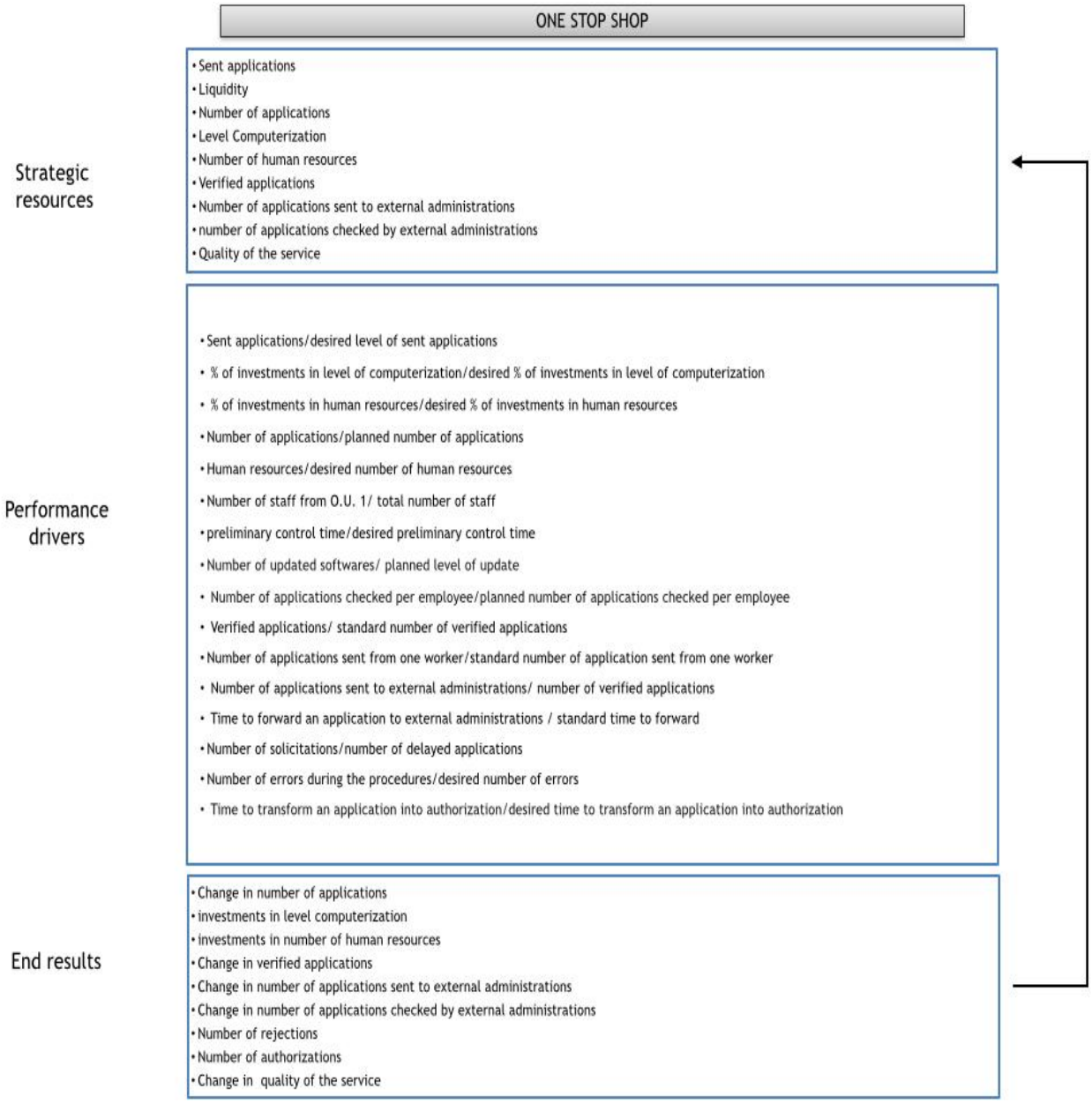


Figure 15 *an instrumental perspective of the One Stop Shop service*

The end results are connected with a set of indicators that affect them, every single driver is then related to a specific strategic resource. Every single end result should be referred to at least one indicator and to one strategic resources.

The firsts end results that were identified are related to the final outcome of the service: “number of authorizations” and “number of rejections”. The relative drivers detected is: “time to

transform an application into authorization/desired time to transform an application into authorization". It is also possible to consider affecting drivers "number of staff from O.U. 1/ total number of staff " and "number of updated software / planned number of updates". Those indicators can be use from decision makers to influence the performance and let the related end result change in the desired direction. Furthermore, another driver linked to the outcomes of authorizations and rejections has been thought to control the performance of the service: the "number of solicitations/numbered of delayed applications". This ratio focuses on solicitations, the only instrument able to influence external administrations; in fact, One Stop Shop mangers are in charge to send warnings to external offices, with the purpose to speed up their control activity. The result of this ratio is important to understand, if eventual delays are generated by external actors, and how often SUAP has been trying to intervene in order to solve this criticality.

The strategic resource related to mentioned outputs is "number of applications checked from external administrations" which is the final stock that produce the authorizations /rejections.

Change in quality of the service is another end result that can be evaluated. On this regard, "users" perceive quality as an outcome because, as services receivers, they are the final judges able to evaluate the impact of the service on the territory. The related driver that affect quality is "number of errors during the procedures/desired number of errors", where the errors are the mistakes made from One Stop Shop employees during the control phase of applications. Those errors generate an internal delay that postpone the final terms of the authorization. In fact, when mistakes are detected, the single application needs to be processed and controlled again. Furthermore, it can occurs that some errors are ignored; these mistakes lead to authorizations that shouldn't been issued, allowing a non regular opening of business activities. Of course, an increase of this particular driver affects the perceived quality of the service in a negative way.

"Change in number of applications checked from external administrations" is the next end result identified. Its related drivers are " Time to forward an application to external

administrations/standard time to forward" and " number of applications sent to external administrations/ number of verified applications". The related strategic resource is "number of applications send to external administrations".

"Change in number of applications sent to external administrations" is another found end result connected to "verified applications/ standard number of verified applications" indicator.

This end result is also affected by the "Human resources" and "computerization level" strategic resources, since the status of technology is a relevant factor that affect the communication among external administrations. The relative drivers are "number of applications sent from one worker/standard number of application sent from one worker" and "number of updated software/planned level of updates", those indicators underlined respectively the productivity of a single employee and the IT effectiveness.

"Verified applications" is the strategic resources that affect and generate the outcome "change in number of applications sent to external administrations".

"Change in verified application" is the end result coming from the stock of "applications"; as the previously analyzed "change in number of applications sent to external administrations" the strategic resources that influence this end result are "human resources" and "level of computerization". They are crucial factors to influence the efficiency of the preliminary control phase, able to change the "control completion time".

Its relative drivers are: "number of applications/planned number of applications", that aims to verify the amount of instance not yet processed inside the service; "human resources/desired level of human resources", which measures the potential needs of workforce; "preliminary control time/desired preliminary control time", that focuses on the deviation between the actual and the standard preliminary control time.

The last identified end results are "investments in human resources", "investments in computerization" and " change in applications". The first two can be affected just by the related percentage of investments chosen by decision makers. It's up to their will to decide on which

lever intervene in order to increase or decrease the relative percentage of investments addressed to the specific result that they want to achieve. With the intent to express these relationships, thr drivers that were created are “percentage of investments in level of computerization/desired percentage of investments in level of computerization” and “percentage of investment in HR/desired percentage of investments in HR”. The strategic resource linked with those investments is “liquidity”, determined by the amount of municipal transfers intended to the service.

“Change in applications” is linked with the driver “sent applications/desired level of sent applications” needed to provide a perception of the incoming instances. Its related strategic resource is “sent applications” which is the stock that represent the accumulation of the submitted applications.

To go further in the study, every single element detected in figure 15 needs to be associated with every identified SUAP process. In order to asses administration’s performance according to a dynamic approach, a distinction between every single phase of the One Stop Shop procedure has been made. The scope is to evaluate the contribution that each phase provides to the next one subsequently located along the value chain. In doing so the author chose to create the following specific distinction:

Phase 1 - incoming applications

Phase 2 - preliminary control

Phase 3 - transmission of the applications to the related administrations

Phase 4 - control from external administrations

Phase 5 - authorizations / rejections

Figure 16 identify the interdependencies between performance drivers, end results, and strategic resources related to every single phase of One Stop Shop inside processes. In order to show, through the identification of feedbacks mechanisms, the causality among the identified variables.

Figure 16

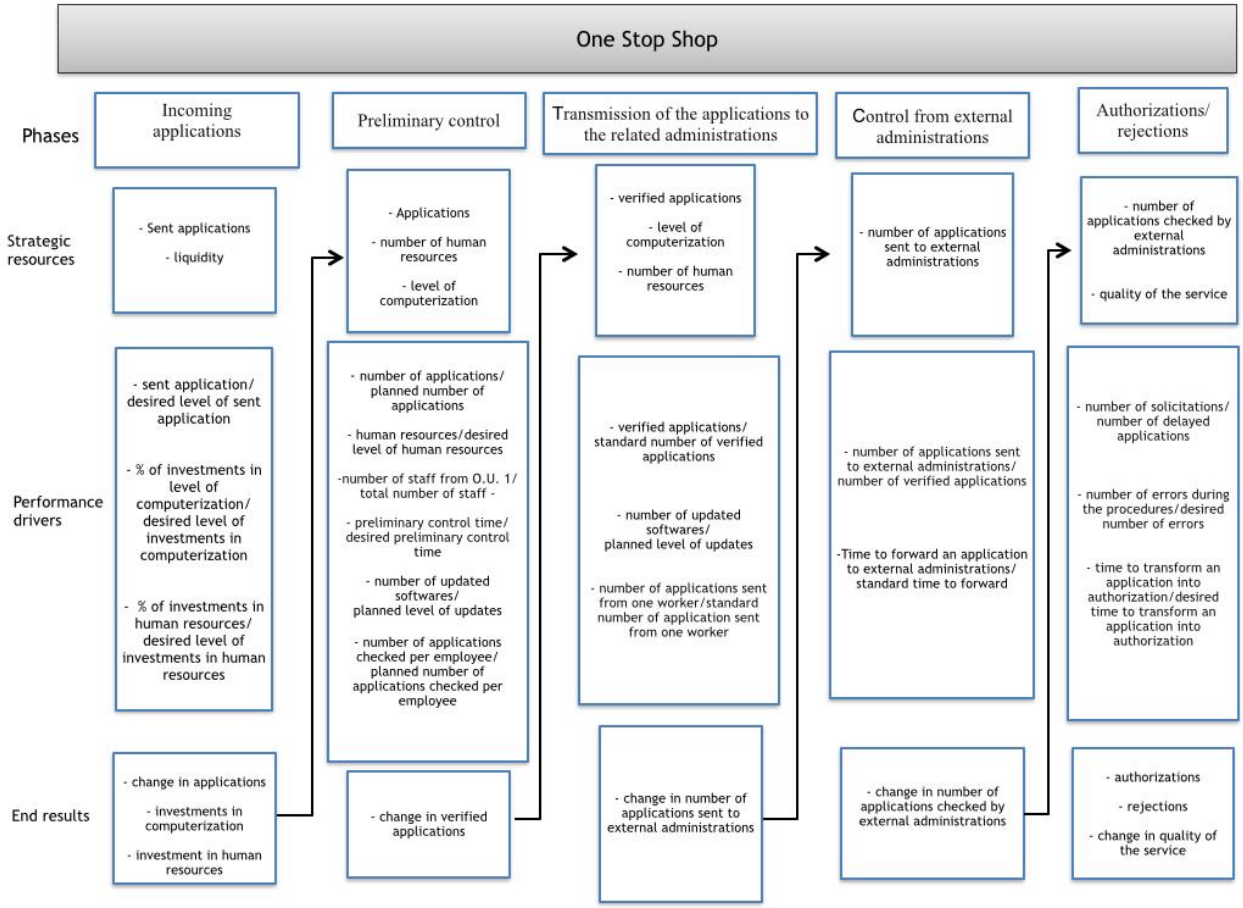


Figure 16 *An application of the instrumental view to the phases of the One Stop Shop service*

This perspective is more detailed and explains perfectly the concept of performance. Every single phase has their set of strategic resources and their own intermediate products made explicit by the end results. Highlight this distinction helps to understand the internal area and the exact phase on which a driver produce its own effects; a decision maker will be able to understand which process is influencing if he decide to intervene using a specific lever of intervention. For instance, he will have clear in his mind, that improving the number of updated software will increase the level of computerization, that will help the service to reduce the "preliminary control time/desired preliminary control time" driver. On this regard, is crucial to highlight that the interconnections between phases are made explicit by taking into account that the results of one phase generates an impact on the strategic resources of next phase; these

relationships are highlighted by the arrows shown in figures 16, included to represent the mentioned links.

In detail, the phase one of incoming applications, is characterized by two strategic resources, these are: “liquidity” and “sent applications”. The latter represents the stock, where the applications submitted by users accumulate. Their related drivers measures the level of investments in human resources and in computerization, due to a comparison with each of their desired level. The mentioned resources and drivers influence their respective end results, expressed by the flows “change in applications”, “investments in HR” and “investments in computerization”. Those end results, are the inflows of the strategic resources of the preliminary control phase (phase two). These, due to the drivers listed in figure 16, affect the end result “change in verified applications”. The latter, changes is value when the driver “time for preliminary control/desired time for preliminary control” changes. Instead, the mentioned preliminary control time, can be influenced by the variation of the ratios “human resources/desired number of human resources” and “number of updated software/desired number of updated software”. In fact, an increase in the number of employees, or an improvement of the IT system, will cause the completion rate of control, to growth, generating a reduction of the “preliminary control time”.

“Change in verified applications” represent the inflow that accumulates into the stock named “verified application”, the main strategic resource of the phase three. Thanks to the selected indicators of performance, the system is able to affect the end result “change in number of applications sent to external administrations”, which has an effect on the stock of “number of applications sent to the external administrations”, the only strategic resource of the “control from external administrations” phase. In this particular process the public bodies involved in the procedure, need to check the applications sent by the One Stop Shop, in order to provide the required authorizations, that must be transmitted back to SUAP.

To replicate this specific process, the end result of the fourth phase "change in number of applications checked by external administrations" can been seen as the inflow of the final stock "number of applications checked by external administrations", one of the strategic resources of the fifth and final phase.

Taken into account that the activity of control pursed by external administrations is exogenous to the internal dynamics of the One Stop Shop, the only related driver that was detected, in order to speed up this process was "number of solicitations/number of delayed applications". Official warnings are a useful instrument, in the hand of decision makers, to improve the number of the final authorizations.

Another relevant strategic resource related to the last phase, is the quality of the service. The linked end result "change in quality of the service" can be influenced by the driver expressed by the ratio between the number of errors and its desired value. This type of evaluation, based on the rate of mistakes, cannot be ignored when the quality level needs to be estimated. In fact, an increase of the value of this ratio leads to a reduction of the quality of the entire service.

In conclusion, it is important to remember that material and information delays exist and they are taken into account. The impact that each phase generates on the subsequent, is perceived with a discrepancy in terms of time. This form of delay will be faced more in detail in the quantitative model that will be explained in the next paragraph.

The representation explained in figure 16 is crucial for the development of our qualitative analysis. In fact, the made classification puts the basis for the development of the causal loop diagram (CLD), thought to create a more structured representation able to identify the polarity of the connections, and provide an overview of the identified cause and effect relations. To be more detailed and prepare the scenario of the quantitative analysis, the loop will clarify which variables can be seen as a stock and which as a flow. Figure 17 shows the CLD made for this specific case.

Figure 17

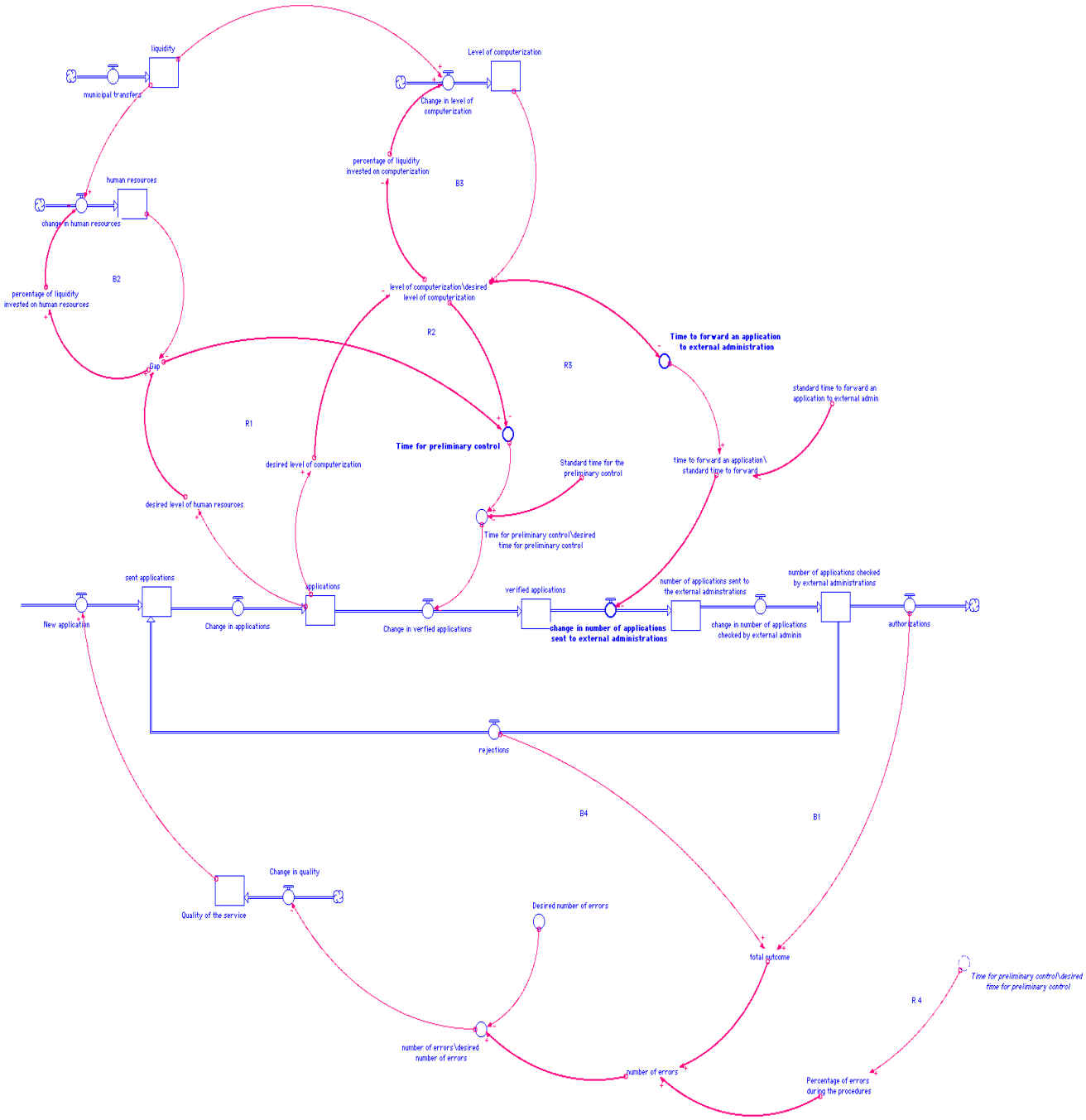


Figure 17 *A causal loop diagram of the One Stop Shop procedure*

Figure 17 tries to synthesize the mechanisms of the One Stop Shop and to highlight the relationships among the identified variables. The latter are connected to each other with arrows, that show the direction of their relations; those can be of two different types: direct represented

with a plus sign, or indirect expressed with a minus one. When the relationships are direct, an increase of one variable lead to an increase of the linked one. On the contrary the indirect connections show how a growth pattern of one variable brings to a decrease of the connected one.

Figure 17 focus immediately on the stocks and flows chain that characterize all the main phases already pointed out. This representation is just a mere translation of what was previously analyzed with the support of the instrumental view of performance.

The One Stop Shop procedures, begin with the incoming inflow of “new applications” . This inflow represent the first step of the designed chain of the service, that accumulates itself in the “sent applications” stock. From the sent applications, the flow move to the general stock of “applications” given by the sum of the incoming inflow and the already accumulated one. The next processes are the same that were already pointed out; the applications are checked with a preliminary control; once it is over they move to the stock of verified applications. Then they need to be sent to the external administrations, that will make their own controls to verify the existence of the mandatory conditions to open a new business activity. From the stock “number of applications checked by external administrations” two flows came out to represent the final output of the service: “the authorizations” and “the rejections”. The latter, became an inflow of “sent applications” variable, because once an instance is rejected the entrepreneur has to restart, and resend the application again with the required adjustment, reported from the One Stop Shop.

From the authorizations and rejections flows is possible to calculate the total outcome of the service, obtainable by the sum of both. Higher is this number higher are the errors made among different procedures. The percentage of mistakes is influenced by the time pressure given by the ratio “time for preliminary control/desired time for preliminary control”. If the actual time exceed the desired one, more pressure is put among workers who need to speed up their performance in order to stay within the time limits chosen by law. The increase in time pressure will let the percentage of mistakes growth, as a result of an higher “stress” rate among

employees. An increase of the variable “number of errors” will have a direct effect on the ratio “number of errors/desired number of errors” that will cause a decrease of the quality level of the service. In fact a larger number of errors will negatively affect the quality stock variable, and vice-versa.

On the other hand the perceived quality, is crucial for the development of One Stop Shop, because when its level gets higher the demand of new application will be stimulated by a positive effect on the “ new applications” inflow.

The described connections create a first balancing loop, coming from the chain of procedures, to “total outcome”, higher level of the latter cause an increase in number of errors; those will affect the quality level that will influence the new applications inflow.

Two crucial levers for the decision makers are the human resources, and the computerization. These two variables must be taken into account during the design model process. They are both influenced by the number of applications. the latter creates the change in demand of human resources and computerization. Higher is the level of application higher will be the need of investments in one of the two levers.

Reinforcing loop one starts, as already highlighted, from the application stock. More applications, mean an higher desired level of human resources; as a consequence the gap with the actual number of workers will be higher. The gap variable influence the time for the preliminary controls; this relations is positive since it depends on the number of employees, more they are, less will be the discrepancy of the gap and less time will be needed to process the applications. In fact, the higher is the workforce level, less will be the amount of applications that each worker needs to fulfill; as a consequence, less time is needed to complete the preliminary control phase. The time for preliminary control, will influence the flow “change in verified application”. From here, the pattern of the loop is the same of B1, and It closes when it reaches the inflow of new applications.

The second and third reinforcing loop are based on similar patterns. Conversely to R1, they focus on the development of computerization level. R2 is structured as follow. An increase of applications stock, lead to an higher level of desired computerization that will raise the distance between the actual level and the desired one; this distance is made explicit by a simple ratio between the two variables. Higher is this ratio lower will be the "time for preliminary control". This variable is the numerator of the driver built with the "desired number of preliminary control". This ratio influence whit an indirect relationship the inflow "change in number of applications sent to external administrations". From here R2 follow the structure of B1.

R3 follows the same connections of R2 with the difference that the driver "level of computerization/desired level of computerization" affects a different time variable: the "time to forward an application to external administrations". An implemented IT system will reduce this time. A decrease of the latter will allow more applications to be forwarded to external offices. From the stock "number of application sent to external administrations" the pattern follow the links of B1.

Two balancing loops are generated from the liquidity stock, which drives the changes on human resources and computerization levers. Part of the liquidity, coming from municipal transfers, is invested on both stocks. B2 describes the adjustment process of human resources.

"Change in human resources" inflow is influenced by the level of available liquidity, multiplied by the "percentage of liquidity destined to the human resources". The latter is determined by the gap between its actual value and the desired level; higher is the gap higher will be the percentage of investment. The gap variable instead, is negatively influenced by the actual stock of human resources. An increase of this variable lead to a reduction of the discrepancy with the desired level.

B3 on the other hand, represents the adjustment mechanism of the computerization level. The loop structure is similar to B2. The discrepancy between the desired level and the actual one, made explicit by a simple ratio, negatively influences the "percentage of liquidity invested on

computerization"; higher is this ratio less will be the need to provide new technological tools to the related offices, causing a decrease of the "percentage of liquidity invested in computerization". A reduction of the latter creates a change in the same direction of the stock of computerization level, that will influence a the mentioned ratio with a direct relation.

Reinforcing loop 4 goes from "time for preliminary control/desired time for preliminary control" to percentage of errors. This link shows what was previously explained about the effect of time pressure among workers. An increase of the underlined percentage will increase the number of errors, and the related driver "number of errors/desired number of errors". A growth of this ratio will affect negatively the quality level. From here the here B4 follows the pattern of R1.

The last identified loop is B4. This feedback is similar to B1 with the only distinction that "total outcome" variable is influenced by the rejections rather then authorizations. Higher is this value higher will be the outcome of the service.

The represented CLD has 8 feedback loops 4 balancing and 4 reinforcing.

The described structure will be analyzed more in detail in the next paragraphs. Quantitative data will be provided, with the support of a System Dynamics simulation.

4.6 The Planning and Control Issue

Like every other public administration there are goals and objectives that need to be set. Palermo's One Stop Shop plan its own objectives every twelve months. Every single unit, with the cooperation of the area manager, built a table with all the operational goals that need to be achieved during the year. Every set target has its own weight given by an internal evaluation made by the area manager and the unit managers. The ones that they deem more relevant will have a major weight. Inside this table there is also a section dedicated to performance indicators used to evaluate the achievement level of the objective to which they are related.

The general goal of the One Stop Shop service, is decided upstream at a political level and it coincides with the aim that guided the foundation of SUAP. It concern the economical development of the territory, a more efficient bureaucracy behind the opening of new activities, with intent to create a new entrepreneurial spirit that will involve more subjects to invest in the local territory due to the business development of some areas of the city.

Before going deeper, is important to underline that the structure changes a lot during the last 4 years in terms of human resources especially at the managerial level, due to the many political changes and instability that occurred both at a regional and municipality areas. These changes caused One Stop Shop to reduce its path of development. In fact, it is important to remember that potential managerial turnovers, are never immediate. it takes time to reset and organize the activity for someone who has new duties and tasks. Usually the new directors are chosen for the competence and capability shown in other areas. Even if the human capital is highly skilled, a short period to adapt to a new work reality is necessary. From 2010 to 2014 the area managers changed three times while the unit responsible for the private retail business changed four times. These information were supported by the interview conducted with the current area manager.

Off course, these changes affected also the planning area, because different subjects have different perspectives and different modus operandi that can create confusion and discourage workers under the manager coordination. "Decision makers should be enabled to learn and practice an aptitude to communicate each other and to be aware of the causes underlying the phenomena on which they are expected to intervene[26]". Continuity is necessary to outline objectives that are able to pursue the guidelines made explicit at a political level(Bianchi, 2010). It is clear that more stability is required for futures improvements of the service, in order to create more certainties and share a common view of the organization, based on internal and stable values targeting a learning oriented approach.

[26] Bianchi C (2010) Improving performance and fostering accountability in the public sector through system dynamics modeling: from an 'external' to an 'internal' perspective. Syst Res Behav Sci 27(4):361–384

That being said, despite all the instability generated by the managerial turn over, the planning and control phase is still crucial to provide an efficient public service, and needs to be done in the most appropriate way. The aim of this specific analysis is to verify how developed is the planning activity inside the structure and underline possible inefficiencies. The study was conducted with the support of an interview with an administrative expert, D/1 level, employed at the One Stop Shop, and with the internal documentation provided by the agency. The latest documents on which was possible to start the following analysis were the tables of objectives of 2013.

The characteristics that these reports shown, are based on the recipients of the planning activity. The set objectives are no longer determined for the unit responsible, who coordinates the related operational unit, but they are assigned to the responsible of the service. Every single O.U. has to follow the directions of the service responsible, and his targets, as a guide line to achieve the established common goals. The related document of 2013 set two types of objectives. The first one, is individual and behavioral, related to the figure of the One Stop Shop responsible. This set of goals clarifies the role and duties of the director. It underlines five relevant aspects with the purpose to create synergy among every single component of the organization:

- increase the sense of responsibility of workers by improving their involvement
- The manager of the service needs to ensure a correct application of the performance strategy in compliance with the political goals
- The manager needs to plan the development of the structure in compliance with the assigned financial and human resources
- The manager has to identify its priority among different results and providing, at the same time, an high quality level of the procedures
- The manager must coordinate his agency in order to obtain the highest level of customer satisfaction; he needs to focus on the time needed to provide the final product to the

"clients". The customer satisfaction will be analyzed by comparing the data of the previous years

The other set of objectives are operational and more specific, they refer to the detected criticalities that must be faced in order to improve the performance of the service. These Objectives are still related to the One Stop Shop manager and they do not focus on the single operational units. It is the manager, who needs to involve the sub-units and give them responsibilities to make every subject participate to achieve what can be perceived as a unique common goal. Each objective is linked to specific indicator of performance that will measure the achievement of the target.

The document is completed by one time table that identifies the deadlines of each objective; usually the reference time is one year.

Choosing to fallow the same pattern used in this thesis, will bring us to analyze the objective planning phase from a performance management perspective.

According to the subjective view of performance explained in the previous chapter the identification of the right objectives is definitely a crucial point to develop a well implemented planning and control activity. From this perspective every single responsibility area needs to set its own targets and work with the intent of achieve them. Every units need to have their own responsibility and well identified responsible, that have to be aware of the risks and respond for the obtained results. Every single outcome must be compared with the planned target in order to understand the level of accomplishment reached; " the expected results provide a benchmark to which to refer for setting goals and objectives for each responsibility area in a P&C context"[27]. What is missing in the actual strategy of SUAP, is the specificity of the subjects to which the objectives are addressed; they are set just at the managerial level without the implication of the relative operational units, that seems not involved in the objectives building processes.

[27]Bianchi C (2010) Improving performance and fostering accountability in the public sector through system dynamics modeling: from an 'external' to an 'internal' perspective. Syst Res Behav Sci 27(4):361–384

The risk is to avoid responsibilities and people who take responsibilities, with the intent to create a set of goals too general and difficult to be judged in a proper way. A confirm to what has been said came from the set of indicators used to calculate the achieved results. In fact,the ones listed on the table of objectives don't seem like true performance indicators. For instance, the indicator that refers to the objective "new regulation for the local markets" is: "transmission of the deliberation proposal to the general accounting and to the general secretariat". The latter cannot be classified as a true indicator, because it represents a duty, a task to do, it does not give any perception of performance, it does not give any perception of the quality and it does not provide any perception of the outcome, coming from the fulfillment of the target.

The percentage of accomplishment of the objective it cannot be measured with this measure of performance, because it takes into account just the single action, just the possibility to transmit the related proposal. In fact, evaluating only the transmission it does not give any perception of the final outcome, it does not tell if at the end of the year the true objective was reached or not. This type of indicators can generate a great paradox; it is very likely that the accomplishment level of the related indexes reaches 100%, since the proposal is effectively submitted, but the desired outcome set with the operational objective can be still incomplete or inefficient, considering that no measure of quality is provided. The related proposal can be transmitted without generating any sort of outcome.

The final goal must take into its matter the true purpose that the One Stop Shop wants to achieve and the effects that this objectives has on the community, not just the merely task to accomplish without any care of the consequences that this action generates.

4.7 A quantitative Analysis

A quantitative approach aims to create an even deeper perspective in order to detect all the involved variables and their causal relations. Moreover, the provided SD model will be able to reproduce the inside mechanisms of Palermo's One Stop Shop to simulate its behavioral path, and run possible future scenarios. Those scenarios will recreate different behaviors based on hypothetical variations of the levers of intervention, in order to verify the reactions of the system to possible deviation.

The model has been developed with a specific System Dynamics software named Ithink. The built simulation allows to read and understand the behavior of the system, not only with the help of a diagram that represent the cause and effect relationships, but also with a graphical support.

This model puts its bases on the qualitative study of the previous paragraphs.

The causal loop diagram structure designed to give a general perspective of Palermo's One Stop Shop, had the purpose to create a general idea of its internal processes in order to generate a first representation of the service. The latter was used as starting point for the SD modeling phase. Moreover the quantitative analysis will represent the identified strategic resources, drivers and end results to give them a specific meaning among the causal links of the system.

The base and central structure of the model is made by a chain of stocks and flows that describes the main phases of the applications through the all system; from the incoming one to the final output, represented by the authorization and rejection outflows. The intensity of every single flow is set by the related time to which they are linked.

Figure 18 shows the described structure.

Figure 18

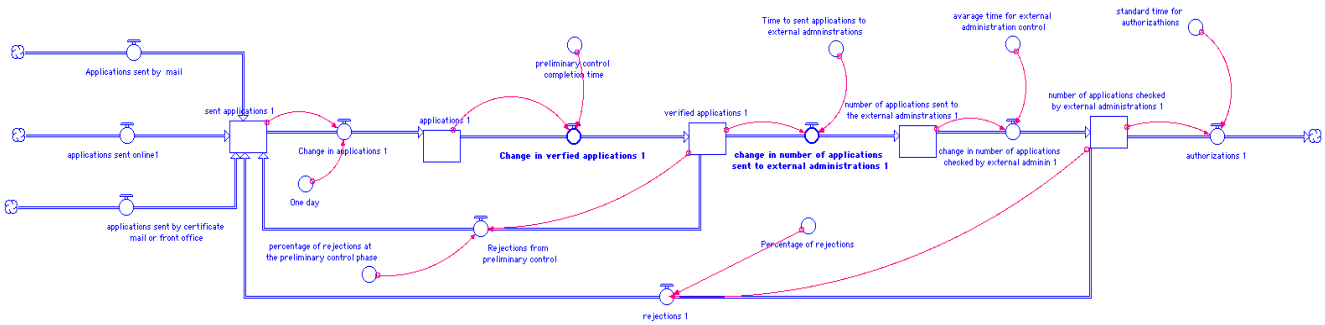


Figure 18 *Stocks and flows chain of Palermo's One Stop Shop model*

The incoming inflows of applications, are divided in three flows:

- application sent by mail
- application sent online
- application sent by certificate mail or front office

all of them converge into the stock of sent applications. With just one day as a reference time they accumulate in the applications stock, with the ones that where not yet processed. From there they need to be verified by the One Stop Shop office, to ensure that the documentation provided is in compliance with the reference law. This process may be more complex and required different amount of time depending on the complexity of the specific file. the calculation of the "preliminary control completion time" was based on several evaluations that will be subsequently explained. Exceeded this phase, the outflow converge into the "verified application" stock. From here two things can happen; the preliminary control reveals some inconsistencies among the documents of the application, and the office reject the instance. Or the control verifies the consistency of the file, and the One Stop Shop forward the application to the next phase. Those process are simulated with two different outflows coming out from the

“verified application” stock. One is called “rejections from preliminary control” which goes back directly to the sent applications. The second one allows applications to the next step.

Once the preliminary control phase is over, the applications are sent to the external administrations responsible for the related permissions. The time to forward every instance is now fast thanks to the IT support, and it requires less the one week. From the related stock “number of applications sent to the external administrations”, the process of external control begin, represented by the flow “change in number of applications checked by external administrations”. The time needed for this stage, does not depend from the One Stop Shop, for this reason the flow is influenced by an average time for control, identified with the support of the conducted interview, in four weeks. Once the applications accumulate themselves in the stock “number of applications checked by external administrations” they are ready to become authorizations or rejections. The latter are defined by an average percentage; they are represented as an outflow that converges to initial stock of sent applications, in order to be reprocessed with the required adjustments. The authorizations instead are modeled as simple outflow. The sum of both rejections and authorizations gives the total outcome of the service.

This first part of the model set the basic structure of Palermo’s One Stop Shop**.** To understand the mechanisms, the drivers and the levers of intervention of the service is crucial to explain the dynamics beyond the “preliminary completion time”.

The main variables involved are the human resources, the computerization level, the liquidity, and the productivity. Figure 19 shows how they have been represented and how they interact with each other in order to influence the completion time.

Figure 19

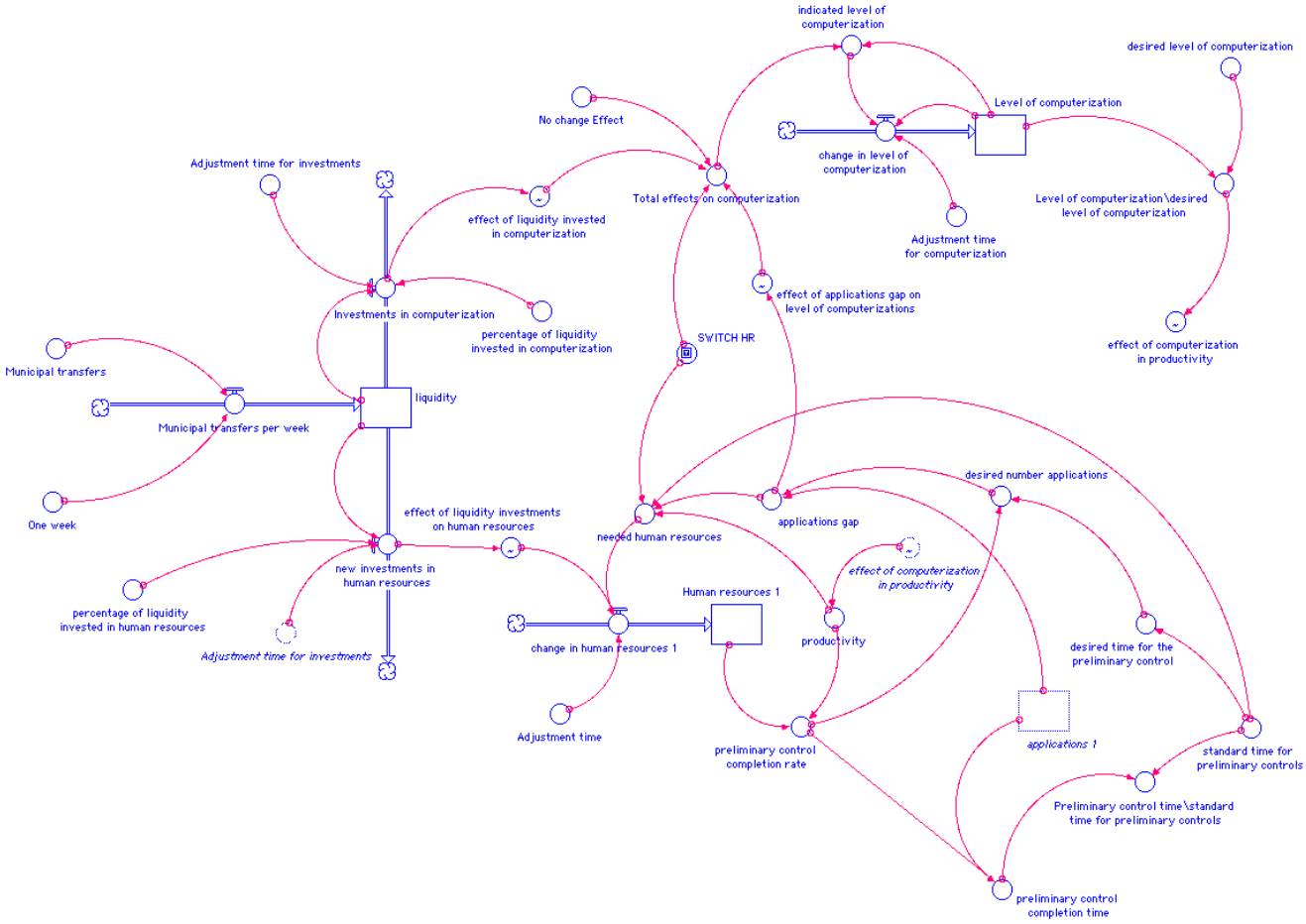


Figure 19: *mechanisms beyond the determination of the preliminary control completion time*

As already pointed out in chapter three, the employees of the retail business operational unit are 14.

The related stock has been initialized according to this value. What emerged from the conducted interviews was that the level of productivity per worker is approximately 9 applications per week. multiplying these values with each other is possible to obtain the "the preliminary control completion rate" per week. The total number of applications, given by the applications stock, divided by the completion rate allows to calculate the "preliminary control completion time". This is a key variable for the performance of the system, because the service has to guarantee an

high quality level in their selection process in a relative short period of time, in order to respect the legal deadline imposed by the reference law.

Is possible to affect the “preliminary control completion time” to generate a reduction in terms of weeks, in two different ways:

- acting directly on human resources
- acting on the computerization level in order to affect the productivity

there are two ways to influence this variables, invest in HR by hiring new workers or invest in computerization in order to improve the IT system.

To verify if there is the possibility to invest in one of the two resources the liquidity availability should be checked. Figure 19 shows that is also crucial to control the true need of new investments, by checking the application gap, which measure the number of instances that still need to be controlled after the desired time deadline is exceed. If this gap is not significant meaning, that new resources are not needed, the system is self-sustainable. If the gap is relevant then one of the two strategies of investment is necessary, to reduce the inefficiency of the service. The mechanisms to calculate the application gap are explained in the model. The “desired time for preliminary control” needs to be explicit first. According to the legal restrictions, two weeks was the chosen value for the variable. “The desired number of applications”, given by the product between the completion rate and the desired time, is subtracted to the stock of applications to obtain the “application gap”.

From here it is possible to influence human resources through the calculation of the “needed HR”, given by the ratio between the “application gap” and “productivity”, all divided by the standard time (two weeks). This provides the exact number of people that are required to complete the amount of applications that exceed, under the legal deadline restriction. The “needed human resources” influences the inflow of the “human resources” stock, by pointing out how many workers are needed to cover the gap under a specific time limit.

However the capability of the system to hire new employees depends on the liquidity availability. The latter is represented by the model as a stock with two outflows, one that affects human resources and the other the computerization level. Both outflows are influenced by the percentage of liquidity invested in each sector. These percentages decide the amount and the directions of the related investments. Both HR and computerization change as a result of the effect generated by the liquidity. The higher is the liquidity availability, the higher will be the effect on the inflow "change in human resources". The effect multiplied by the "needed HR" will provide the exact number of workers that the service will be able to hire to improve its effectiveness. An increase in "human resources" stock, will lead to an higher completion rate that will consequently reduce the "preliminary control completion time".

As was mentioned, the computerization level is also influenced by the amount of liquidity availability. The higher is the percentage intended into the IT investments, the higher will be the effect on computerization. Unlike the mechanisms behind the HR, the IT sector is affected also by the "effect of the application gap", that represent the actual need for technological improvements. In other words, if the gap is wide, more investments in computerization are required, in order to influence the efficiency of performance from another dimension. If the gap is low the effect will be reduced, meaning that a smaller amount of investments are required.

"Total effects on computerization" is the variable that combines both effects in order to create a unique value that multiplied by the actual level of computerization and dived by the adjustment time, gives the inflow value that changes the stock.

The model also highlights the driver "level of computerization/desired level of computerization", this ratio does not have a direct impact on the completion rate, but it actually affect the productivity of a single worker. Higher is the value of the driver, bigger will be the impact on the productivity level. An increase of the latter leads to a higher completion rate, that will reduce the " preliminary control completion time". If the investment policy is oriented on the development of the IT system of the service, each employ will be eventually provided with new

software, personal computers, and supported with a faster internet connection. Each improvements guarantee an increase of the single worker's efficiency.

Summarizing, the structure represented in figure 19 recreates the dynamics behind the completion rate of the service. To affect efficiently the time of this control activity, decision makers can intervene influencing the HR or the level of computerization. The model was built with the intent to influence the system by showing the result of possible policies. On this regard a switch function was created, a variable that as the power to switch on or turn off specific parts of the model, in order to simulate eventual choices from an hypothetical public manager. The switch function activates the human resource's policy, turning off any influence on the computerization level which remain stable, or vice versa it can switch on the computerization policy, in order to improve the IT system, leaving the HR stock at its initial value.

The last part of the model, displayed in figure 20 describe the dynamics of the errors, and how they affect the quality of the service.

Figure 20

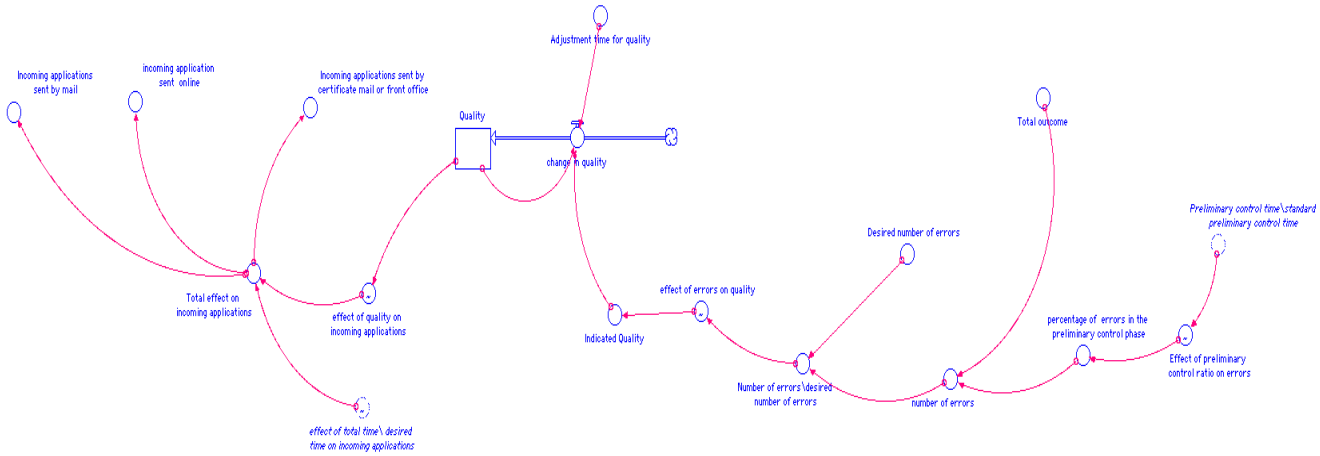


Figure 20 *Mechanisms behind the service quality of One Stop Shop*

As already underlined, the total outcome given by the sum of the rejections and authorizations, is needed to calculate the number of errors that affect the system. The percentage of errors applied

to the simulation is 5%; this value was provided as a result of an interview with one administrative operator of the service. The percentage is influenced by the driver "preliminary control completion time/standard time for preliminary control", if this ratio is low the actual "preliminary control completion time" is reducing; as a consequence, the effect that influence the percentage of errors will decrease causing a reduction of mistakes in the control phase. On the other hand if the related driver increase its value, the effect will be negative and the number of errors will raise.

Once the variable "number of errors" is determined is possible to estimate the related driver, given by the ratio "number of errors/desired number of errors". The latter is seen by the author as one of the few possible measures of quality, given that the outcomes don't provide an efficient perspective of performance; focusing just on the "total outcome" as a measure of quality may be wrong, since it doesn't tell us if the result is affected by some mistakes that could lead to a not congruous authorization.

If the highlighted driver decrease, as a consequences of the dynamics of the system, the service quality increases and vice versa. The structure built to represent the quality measurement system, was designed by taking into account "1" as a target value in case of maximum efficiency and "0" as the lowest point. Quality can assume any value between 0 and 1.

Once the quality value is determined, the model estimates which are the effects that influence the incoming application variables. On this regard, is important to remark that the quality of the service has an impact on the whole system and territory, its strength is to influence people's perception about the services provided by the One Stop Shop. If this perception is well placed in the mind of users, citizens will be more encouraged to develop new ideas and to open new business activity. An easy and efficient service can cancel, or at least reduce, the perception of a slow and stiffed municipality as a result of the heavy bureaucratic system that characterize Palermo urban area. Moreover, long waiting time, and mistakes during the control phase, can

cause discouragement among entrepreneurs; on the contrary efficiency, certainty of times and a limited number of errors can built trust around Palermo's One Stop Shop.

For these reasons the model has been designed with two effects, built to influence the number of incoming applications: the quality, and the total time to transform an application into an authorization. Time has an indirect relation with the inflow of incoming applications. An high waiting time will have an negative impact on applications, causing a reduction of their initial number.

On the other hand, the service quality has a direct effect on the number of instances, in fact an increase of this value generates a positive effect among applications; they will raise as a consequence of the developed trust, built with the new perceived quality. The two effects are multiplied to each other, in order to obtain a "total effect" variable, that will affect the incoming inflow. Both, have a an opposite influence on this variable, to understand which one of them is dominant, we have to test the dynamics of the system by analyzing its behavior.

4.8 Simulation Behavior

The model was built with the intent to provide two different scenarios, one with a policy of investments oriented on human resources, and another on the computerization level.

To create this structure a switch function was built; its feature is to activate or deactivate specific parts of the simulation. Turning on the HR circuit will close the links with the computerization level, that will remain stable at its initial value. On the contrary turning it of, will activate the computerization policy and leave the HR at its starting level.

The model is designed to show the reactions of the system to the changes of the represented levers of intervention, considering a time horizon of 156 weeks (three years). Assuming a liquidity availability equal to 150.000 euros, that allows potential investments in one of the two

sectors, the purpose of the study, is not to evaluate the impact or the relevance of the municipal transfers, which appear to be obvious for implementation policies, but to show the mechanism and potential solution to the underlined issues. Furthermore, to guarantee a complete view, the simulation will be also tested in absence of liquidity.

Turning on the switch function will activate a policy oriented on the hiring of new employes.

The initial value of the HR stock is 14. All of the represented workers are from the "private retail business" operational unit. The starting value of "applications" is 400. The numbers of the incoming ones are based on an average estimated on the historical data of 2013. As was explained in the previous paragraph the need of hiring is determined by the "application gap", that can be seen as the unprocessed part of the demand. The higher is this variable the higher will be the need of new resources. Figure 21 shows how many workers are needed to satisfy this discrepancy of applications.

Figure 21

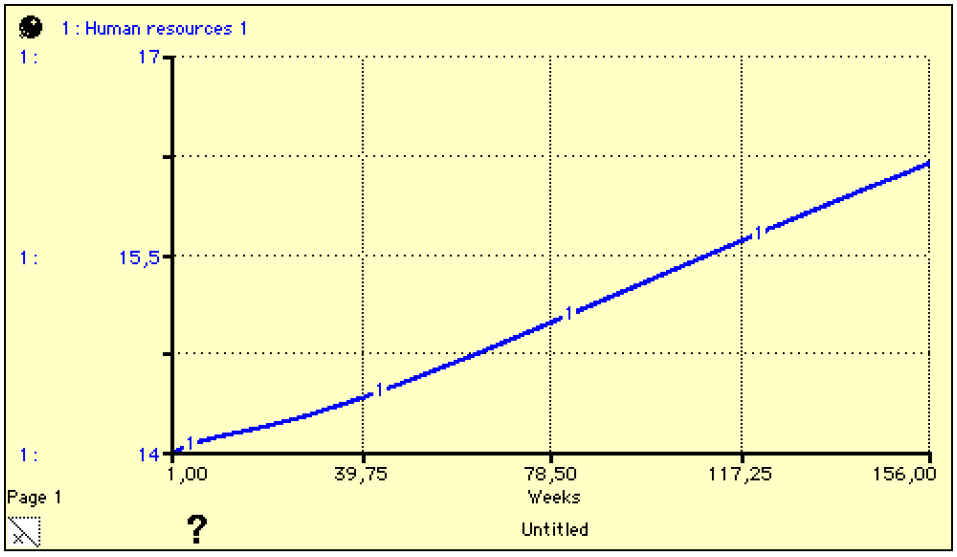


Figure 21 *"Human resources" behavior with the switch function on*

The above graph show the behavior of HR during the specified time horizon. The stock grows almost constantly, but slower between the first 39 weeks, to ends up at the end of the projection with 16 employees. Two workers are hired.

Therefore, it seems relevant to understand how the "application gap" reacts to the underlined HR pattern, and verify its trend. Figure 22 explains its behavior.

Figure 22

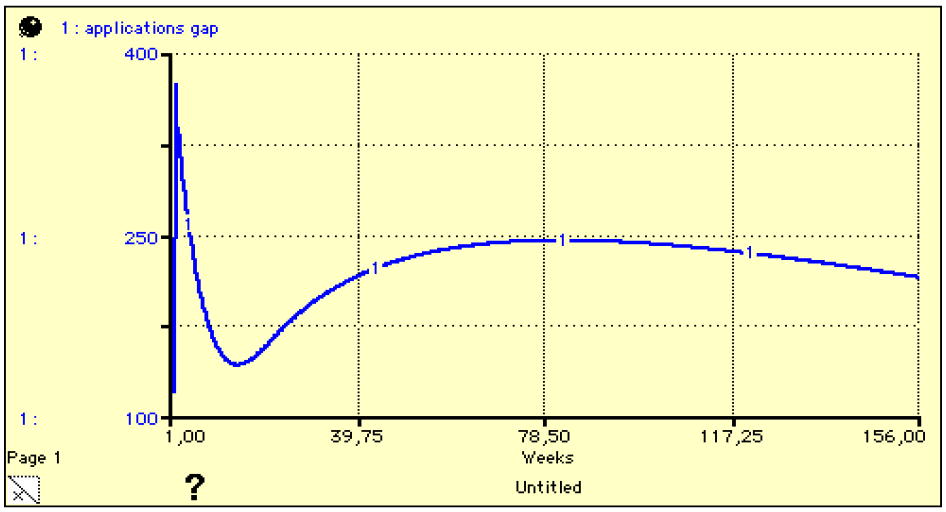


Figure 22 *"Application gap" behavior with the switch function on*

The variable shows an overshoot and collapse behavior during the first weeks, to start increasing again after week 15. It is possible to verify, that in conjunction with the first HR recruitment around week 39, the curve reduces its growth speed to stabilize and slowly decrease. Once the sixteenth operator is hired the application gap increases its decline. The behavior complies with the expected one, and it seems solid and rational.

These are not the only relevant variables to consider. What is crucial to understand for the efficiency of the service is the time behavior. The "preliminary control completion time" is the one that can be affected most, because it is internal to the office and depends more on the dynamics of the structure. The other parts of the procedure are affected by the performance of the external administrations. For these reasons we will examine the trends of the preliminary

control completion time. Moreover, it is helpful to point out the behavior of the related driver given by the ratio with its desired level, in order to verify how close the gap is to the planned target. The comparison between the preliminary completion time and its driver is shown in figure 23

Figure 23

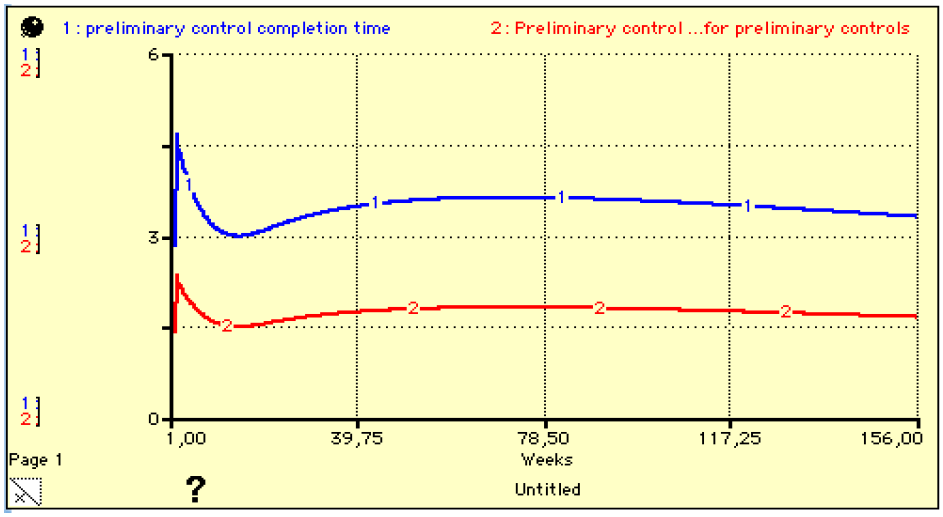


Figure 23 *"Preliminary control completion time" and "preliminary control completion time/desired preliminary completion time" behaviors with the switch function on*

The behavior of both is similar, and follow the same pattern as the "application gap" graph; basically after the first peak of 5 weeks, the "preliminary control completion time" starts to decrease until it raises again to reach 4. After the hiring policy is completed, the curve begins its decline to reach 3 as a final value. The desired level established for this phase is 2 weeks, if both, desired and actual time correspond the driver should be equal to 1. This value is never reached, even if in the second half of the simulation the ratio decreases to become 1,6 at the end of the chosen time horizon.

Furthermore, the HR policy affects also the errors. As was described they are influenced by the "preliminary control completion time". Therefore when the time pressure decreases, meaning that the completion time gets closer to its desired level, a reduction of errors is generated. The

reduction of the “preliminary control completion time”, as explained before, causes in the long run, a decrease in the “percentage of errors”. Figure 24 display this result.

Figure 24

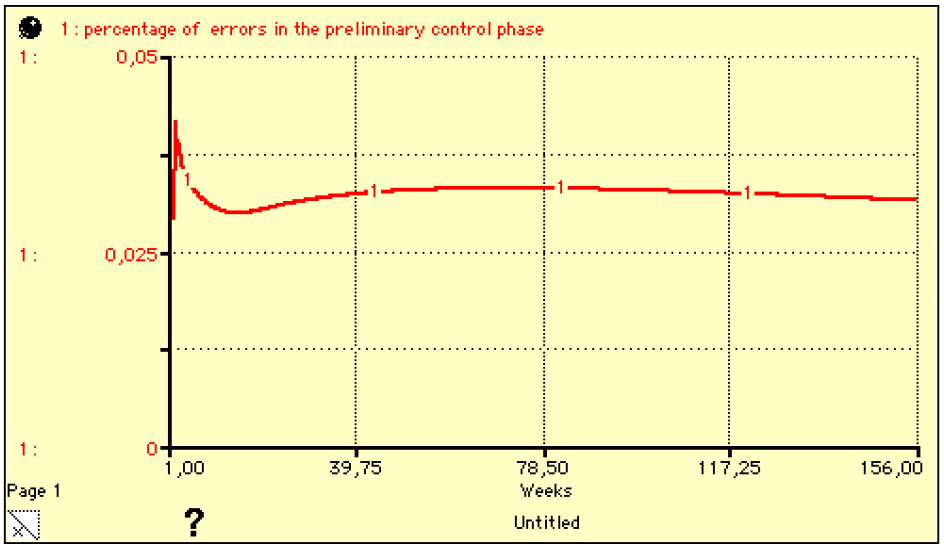


Figure 24 *“Percentage of errors in the preliminary control phase” behavior with the switch function on*

By analyzing figure 24, it is possible to notice a similar behavior with the previous graphs. The explanation is simple, in fact all the named variables are linked to each other. Every single change generates consequences to the related variable. What is important to underline is that the “percentage of errors” trend, looks flatter as a consequence of the accumulated delay. The effect on errors is subsequent to the one perceived by the “preliminary control completion time”, this causality creates a more stretched pattern.

Thanks to the error reductions, the “quality” of the service grows with a goal seeking behavior because of the stabilizing trends shown by the percentage of mistakes. The quality value at the end of the time horizon is around 0.63; its starting level was 0.4.

The combined effect of “quality” and “total time/standard time on incoming applications” affects the incoming applications that shows an increasing pattern that generate an higher number of requests that needs to be processed.

Adopting an HR policy, creates a positive feedback, in fact the general efficiency increases due to the time and error reductions, and to the higher number of processed applications.

However, one consideration seems appropriate, in fact taking into account the a three years time horizon, the expected results were more optimistic, the desired levels are close but not yet reached. Also, before going further with other evaluations, it is relevant to remember that hiring is an expensive solution for the service, because it is a continuative expenditure and implies difficulties in case of future budget constraints, that will eventually force the One Stop Shop to reduce its resources. Firing HR that works for the public sector is never easy and immediate.

On the other hand, turning of the switch function activates the computerization policy and stabilize the human resource levels at its initial value of 14.

The computerization is expressed in number of software, its starting level is 8, while its desired value is 16. The target of the operational unit is to provide updated software to all potential workers.As was mentioned in the previous paragraph the computerization level is influenced by two effects, one generated from the application gap and the second from the liquidity. When both variables increase the computerization level increases too. The behavior of the latter is shown in figure 25.

Figure 25

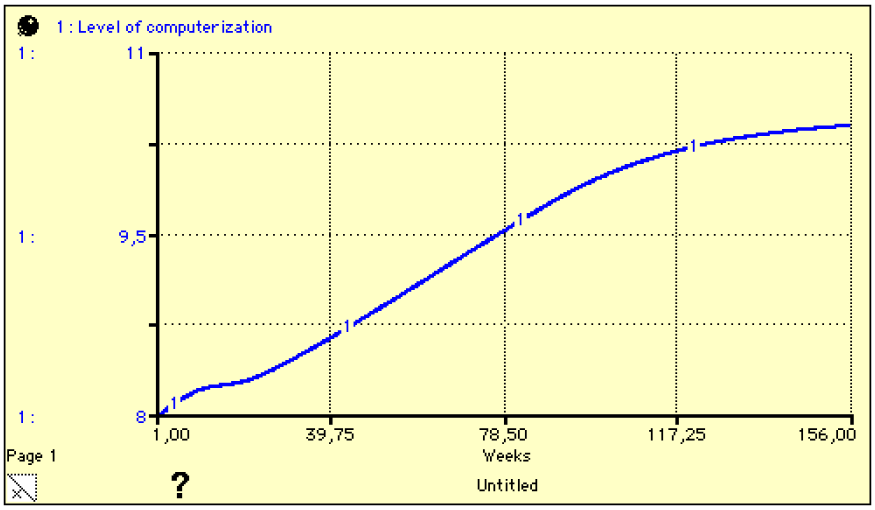


Figure 25 *"Level of computerization" behavior with the switch function of*

As we can see in the above graph the computerization starts a growth pattern showing a goal seeking behavior. Its level increase almost constantly until it slows down after week 78. The reason of this trend relays on the positive effect that the computerization has on the system, in fact affecting directly the "productivity", causes a reduction of the "preliminary control completion time" and an increase of the "completion rate". As a consequence, the "application gap" decreases considerably, causing a reduction of the effect on the computerization level that diminishes its growth due to the balance that the system reaches. At this point, further investments on the IT system will generate a smaller impact on the service. The positive effect that the computerization level has on the "application gap" it reduces the need of additional improvements.

On this regard figure 26 displays the behavior of "application gap". A comparison with the two policies is also provided.

Figure 26

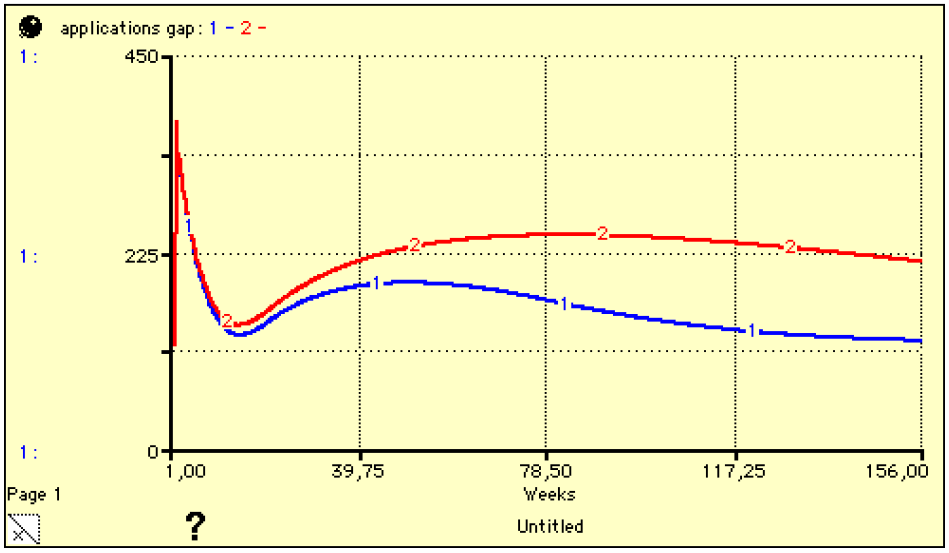


Figure 26 *A comparison between the chosen policies that shows two different "application gap" behaviors*

The blue curve is the one generated by the computerization policy. The latter as we can immediately verify achieves better results at the end of the selected time horizon. Even knowing

that the pattern between them is similar, the policy oriented on IT developments creates a more efficient outcome for the service, its direct influence on workers productivity facilitates the control stage, speeding up the monitoring phase of applications. The system will be able to process more applications, with better results. In addition, the implementation of this strategy absorbs less liquidity. The tools for the improvement of the IT system are less expensive than hiring new employees, who need to be paid with specific wages every month. The expenditures related to the computerization policy are an enrichment for the assets of the structure.

This strategy has positive effects also on the "preliminary control completion time", its reduction due to the improvements in productivity and in completion rate, lead to better results for the service. More applications can be processed in a smaller time frame. Figure 27 display the "preliminary control completion time" patterns, in order to compare the effects and the results of both policies.

Figure 27

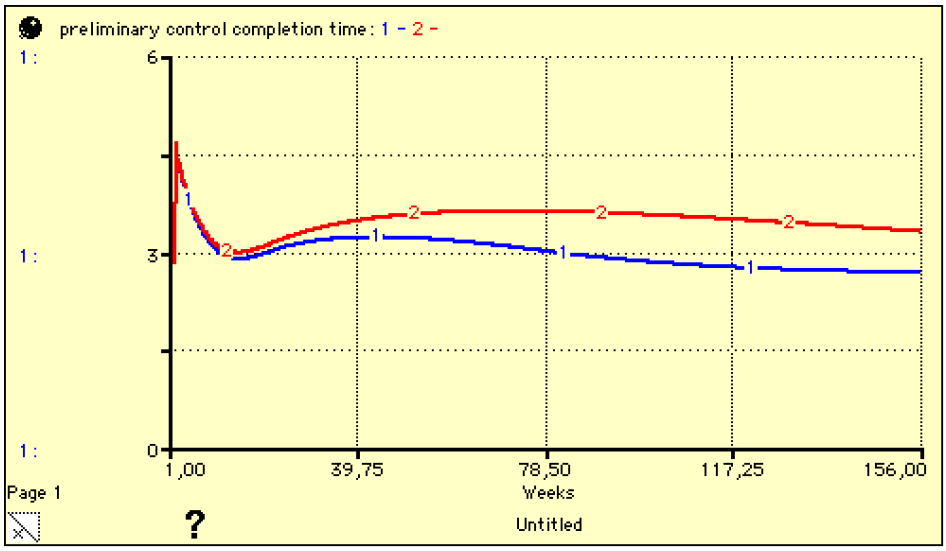


Figure 27 *A comparison between the chosen policies that shows two different "preliminary control completion time" behaviors*

The blue curve represents the behavior of the mentioned variable with the computerization policy activated. As is easy to verify, this strategy creates a better pattern; the time decreases

faster if we compare both trends, in fact at the end of the simulation its value stabilizes at 2,6 weeks. Also the “total time to transform an application into authorization" decrease to 8 weeks in compliance with the legal deadline. On the contrary the hiring strategy reached a “total time” of 9 weeks.

The reasons for this behavior are easily explainable; basically, after the initial overshoot and collapse, consequence of the starting levels of the simulation, the curve begins to increase again as an effect of the rise in applications; the need to satisfy a larger demand, drives the investments on computerization. Once these increase, the curve begin its constant decrease.

This policy also affects the “percentage of errors”; the explained mechanisms of the system display that this variable can be influenced by the time pressure, determined by the ratio between the “preliminary control completion time” and its desired level. The time reduction influence the percentage of errors that decrease constantly after week 42. The final value reached by the simulation is 2,8%, a lower rate compared to the 3.1% obtained with the implementation of the HR strategy. Figure 28 shows both behaviors

Figure 28

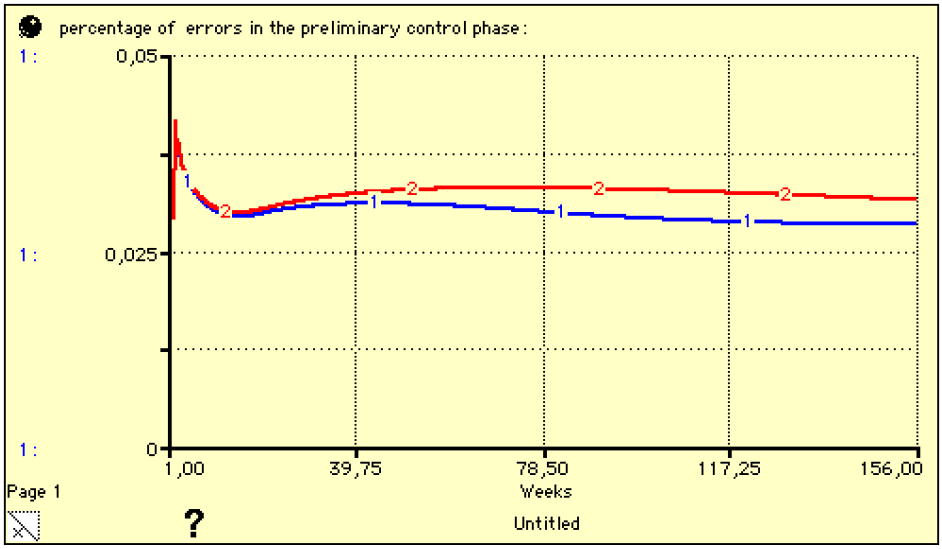


Figure 28 *A comparison between the two explained policies that shows different “percentage of errors in the preliminary control phase” behaviors*

As was pointed out the percentage of errors influence the quality of the service. The value of the latter is more or less equal to the one obtained with the human resources policy and stands around 6.4. The perceived error reduction is not significant to create a further increase in quality.

Despite this, the total effect on the incoming applications rise its value, thanks to the impact of the driver "total time/desired time on incoming application", which is now 1. Due to the effect of total time, the incoming applications increase their number more than in the HR policy.

The computerization scenario creates even better results with less resource consumption. However it is still important to remark that those are not exact predictions, System Dynamics does not predict the future, its intent is to let decision makers understand the dynamics, and the cause and effect relations of the system; the purpose of the study is to suggest and evaluate possible scenarios.

The model shows different perspectives, characterized by two different policies. The capability of the service to implement one of the two strategies is tied to the liquidity availability. The author, did not want to put to much emphasis on this side of the study, since the relevant aspect of this dissertation was to clarify the mechanisms behind One Stop Shop processes. However is definitely interesting to run the simulation assuming no municipal transfers, in order to analyze the behavior of the system without any possibility to invest in the development of any strategic resources.

In the long run, without any type of intervention, the main variables and drivers, do find a stable equilibrium. As is possible to verify in the figures below, the patterns of the selected variables all look the same; after the initial overshoot and collapse, caused by the initialized values of the model, the curves start their increasing trends assuming a goal seeking behavior that lead to the final stability of the system. Figure 29 shows the described patterns.

Figure 29

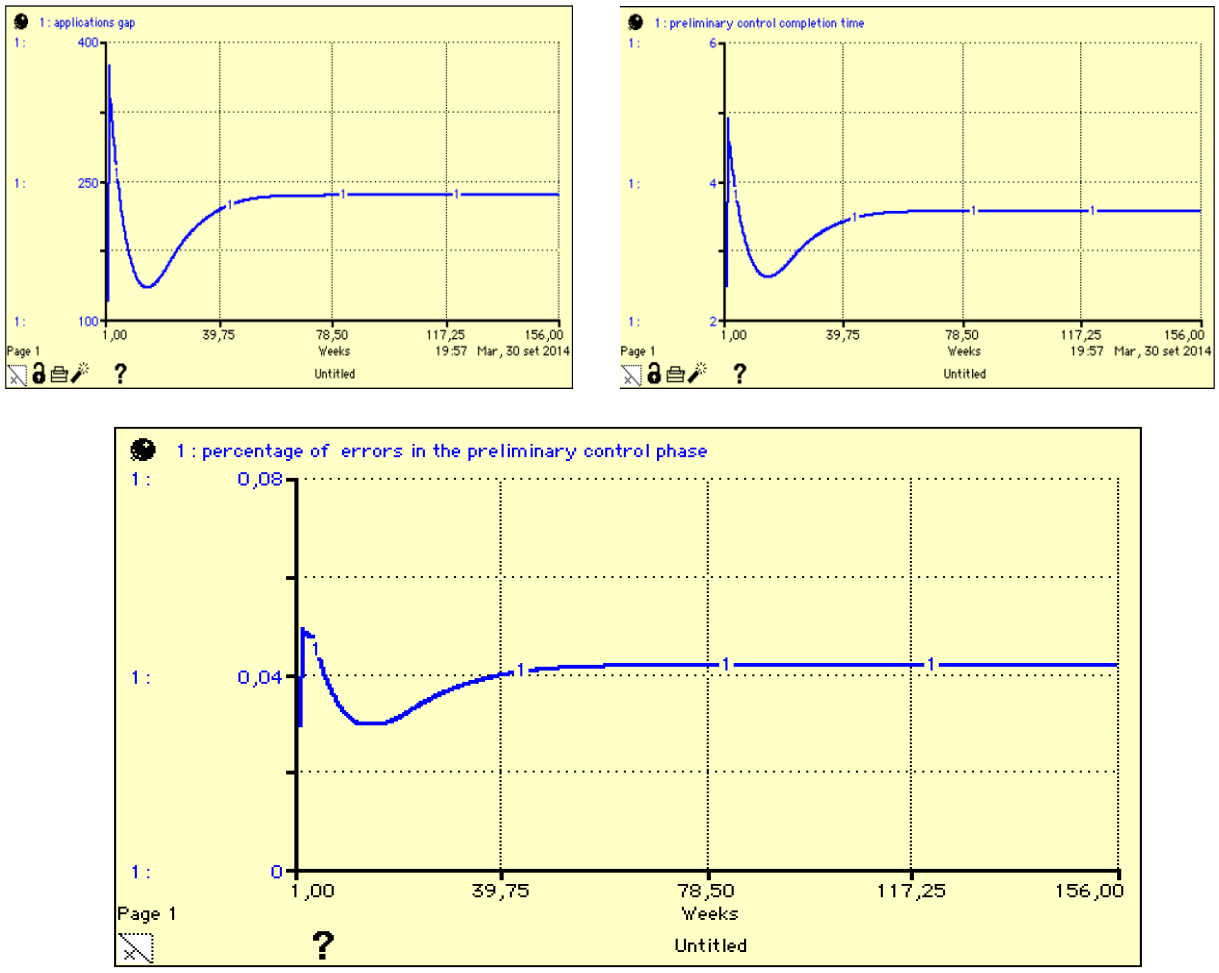


Figure 29 *"Application gap", "preliminary control completion time" and "percentage of errors in the preliminary control phase" behaviors without new investments*

The equilibrium is reached in the first half of the simulation, around week 60, but the results that the system achieved are not satisfying. If we let the One Stop Shop develop without any investment policy, the founded inefficiencies won't be solved. In fact the "preliminary control completion time" will stand around 4 weeks leading to a total time of 10 weeks, which is above the deadlines established by law. Also the "application gap" stabilize at a high level, with 234 applications waiting to be processed. The variable "percentage of errors" increases its value to 4,1% which brings the number of errors not even close to its desired level.

4.9 Organizational policy

In paragraph 4.2 was highlighted the importance of the internal organization and how relevant this could be in order to improve the performance of the service. What was detected was a lack of organization at the sub-unit level; employees are not categorized, the role of each worker is not always clear. What emerged during the conducted interview with one of the C/1 administrative officer, is that in most of cases the inside structure does not make an appropriate differentiation of the internal competences. As a consequence, most of the employees have difficulties, because they need to face working tasks that are not under their responsibility. Moreover, this issue can lead toward a misunderstanding of competences, causing an overlapping of duties and confusion among the working schedule. These phenomena increase the rate of errors.

A better internal organization is able to foster the performance of every single employee in order to reduce the frequency of mistakes. This strategy doesn't imply any expenditures to be implemented, it needs only an efficient organizational plan, able to reduce the lack of awareness among workers, by specifying the boundaries of every single task.

The model developed the suggested policy in order to improve the efficiency of the service under analysis, to provide a possible solution, to reduce the internal rate of error during the preliminary control phase. To activate this strategy a switch function was created. Figure 30 shows how this structure was developed

Figure 30

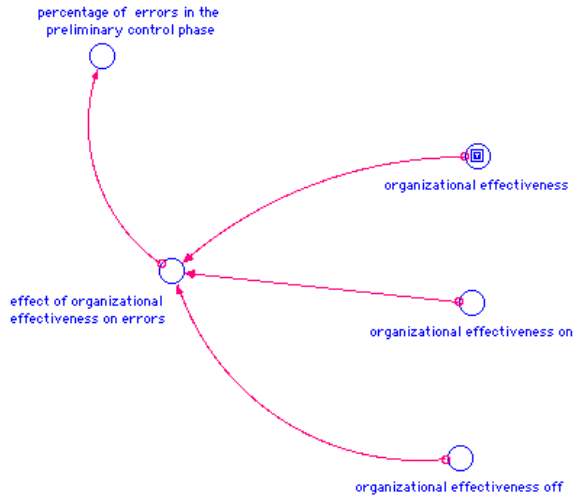


Figure 30 *SD structure of the organizational policy*

The effect of this policy influence the "percentage of errors in the preliminary control phase", when the switch function is activated the "organizational effectiveness" will reduce the rate of errors, vice versa when this function is deactivated no effects are generated to influence the simulation. This policy can be implemented together with the HR or computerization strategy, in both cases the final effectiveness of the system will be improved, as a consequence of a reduction of internal mistakes and an increase of the quality level. Figure 31 display two different trends of the variable "percentage of errors". The red curve is the result of the computerization policy while the blue curve represents the pattern with both "IT" and "organizational effectiveness" strategies activated.

Figure 31

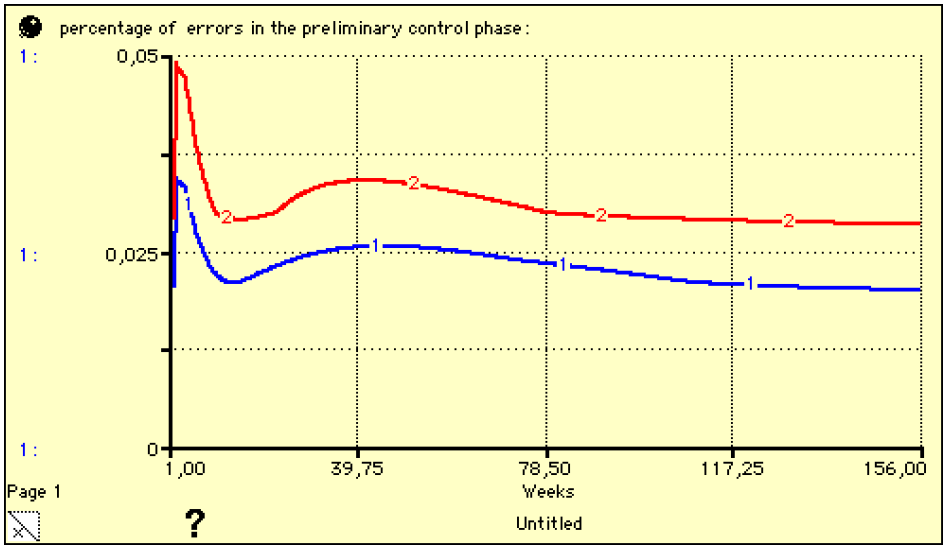


Figure 31 *Behavior obtained with both computerization and organizational effectiveness policies activated*

As it is possible to verify from the above graph, the organizational effectiveness policy is able to further reduce the percentage of errors. Thanks to this strategy the blue curve shifts below the red one to diminish its value after week 40, and reaches its minim level at the end of the simulation. The percentage decreases to 2%.

The explained results affect positively the quality of the service that further increase its value. Thanks to the combination of both policies the quality indicator grows to 0.73 in a measurement scale in which its maximum value can be 1 and the minimum 0. On the contrary, without the support of an appropriate organizational structure, the rate of errors increases, affecting the quality level that will fall to 0.63.

The same positive effects can be observed when the HR and organizational policies are activated. Figure 32 shows the reaction of the system to these strategies

Figure 32

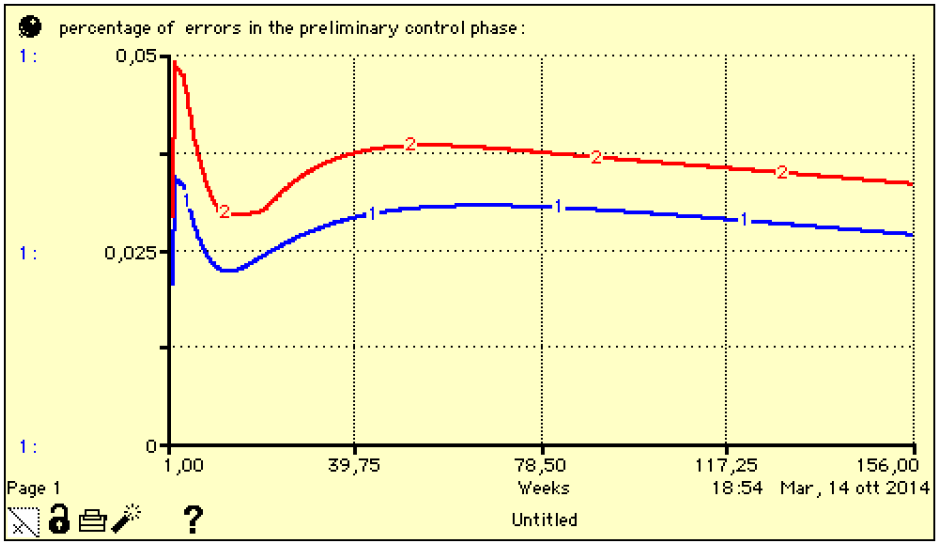


Figure 32 *Behavior obtained with both HR and organizational effectiveness policies activated*

The red curve represent the pattern of the system with the HR policy. As is possible to verify the blue line, that shows the behavior of the "percentage of errors in the preliminary contrail phase" with both strategies activated, achieves better results. It reaches a lower percentage of errors, equal to 0,027, while the rate of mistakes attained by the red curve is 0,033. Implementing the organizational policy fosters the system to undertake a sustainable path of growth, thanks to the effects that a reduction of errors have on the quality level. In fact, the increase in quality generates an increment of the submitted applications. This connection creates a reinforcing feedback able to sustain the system over the next years.

Chapter Five

Conclusive Remarks

5.1 Conclusions

This dissertation was written to analyze the main procedures and mechanisms behind Palermo's One Stop Shop. Its main purpose was to focus on service performance, in order to point out the organization and the structure of the agency. With the support of "Public Performance Management" methodology, it was possible to identify a set of strategic resources, performance drivers and end results, with the intent to show the main causal relations between the variables involved. This type of analysis was developed to suggest a methodological approach useful to decision makers, in order to tackle possible inefficiencies, and improve service performance.

Taken into account the dynamic complexities of the system under analysis, this research utilized another complex instrument to provide a deeper perspective of the One Stop Shop's mechanisms and criticalities: the System Dynamics methodology. More in detail, through the application of SD it was possible to build first a qualitative representation using a Causal Loop Diagram(CLD). This tool was chosen to represent the main variables and give a general perspective of the One Stop Shop dynamics. The CLD was necessary to lay down the basis for a more complex model representation, built with a system dynamics software. A quantitative model was provided, in order to highlight all the internal processes, the main relations among the identified variables, and the levers of intervention that can be influenced by the decision makers. The model explicit in detail how these levers are affected, and the consequences that they are able to generate to

change the system. Its strength is to represent and explain all the crucial interactions of the system, whether they are linear or non linear, with the final goal to investigate the created trends. Thanks to SD approach, it is possible to understand the criticalities that affect Palermo's One Stop Shop, and it reduces their effects by intervening on the identified levers. The model tries to show possible scenarios and potential consequences that one single change is able to create within the system. By having the support of this instruments, decision makers are able to evaluate possible positive impacts on the desired outcomes in order to improve the service performance.

The inefficiencies that were identified, that slows down the performance, were mainly related to the accumulation of applications**,** caused by a late improvement of the IT system, implemented only in the last quarter of 2013, and by a workforce that was not prepared to change its work routines, in such a brief period of time. This situation lead to several delays, especially in the preliminary control phase, and in the external control that is done by the relative administrations. The explained One Stop Shop dynamics, the data, and its criticalities were supported by the interviews conducted with the area manager, with the administrative manager and with two operative employees.

To overcome such bottlenecks the model suggest possible policies. In fact, it is possible to draw different scenarios, and verify how the system reacts to a human resources hiring option, or test the consequences of a computerization oriented policy. The provided quantitative representation, took into account another critical matter: Palermo's SUAP internal organization. What was pointed out in the previous chapter was an organization chart based on the operational units division. The controversy lies on the fact that every single unit was not divided into sub-units to provide a more efficient job distribution; what emerged from the conducted interviews and from the on-site visits, was an approximate and not structured internal organization. What was identified as a consequence of this organizational lack, was a loss of efficiency among the internal procedures, and a growing multi-tasking activity from operational unit employees. The

latter can lead to a reduction of coordination between workers causing confusion in terms of duties, with the risk of generating possible overlaps of activities. Improving this organizational aspect is another suggested policy developed by the model, in order to foster a better performance without any resource consumption, with the intent of reducing the time of for each procedure, and decrease the percentage of errors that is generated in the control phase.

It is important to remember that the System Dynamics model simulates possible evolutions of the case under analysis, and supports managers with the implementation of the proposed policies, that affect the feedback structure, with the intent to improve the One Stop Shop performance. The developed model has not a predictive power. Its contribution is to create a mental model that can be useful to decision makers in order to show some of the relations and feedbacks that were hidden and ignored during the planning and control phase.

In conclusions, what is possible to state after this dissertation and after what was collected from the conducted interviews, is that the explained criticalities that exist inside the service are the consequences of a confused management activity between 2008 and 2013. The modality chosen by the municipality of Palermo and the slowness to implement the path of technology, were one of the major causes of the of the mentioned inefficiencies. The employees were not prepared for this kind of change and they were not supported by the right policy of updates; "users" on the other hand were not provided with the necessary tools. That being said, it's fair to underline that the new management that took over the One Stop Shop service, in the last quarter of 2013, did a good job in facing those adversity, improving the service in some of its aspects, such as technology, which was not well implemented at that time. The Patterns shown by the data and replicated in the model are encouraging for the near future; the new decision makers are close to solving some of the critical issues that causes a performance reduction of the service. The accumulation of applications is reducing, and the average time for a single request does not deviate much from the legal deadline. However, there are aspects that still need to be implemented; delays do exist, the rate of errors can be reduced, and the coordination between the

three main subjects, the One Stop Shop, the "client", and the external administrations needs to be improved. In order to reach these goals and to enhance Palermo's One Stop Shop performance and create a fully efficient structure, it is necessary to invest not only on tangible assets but also on intangible one. Improve the organization of the service, invest more in training to create a high skilled workforce, are the steps to continue towards the growing pattern that has been undertaken.

5.2 Limitations

The analysis that has been done in this dissertation, tried to replicate the structure and the dynamics of Palermo's One Stop Shop. Although this thesis seems to identify well all the crucial aspects of the structure, and represents them with the support of a System Dynamics quantitative model, there are still some limitations that need to be highlighted.

First, the conducted study was mainly developed based on the mechanisms of the retail business operational unit. The analyzed structure and criticalities are similar to the ones that can be noticed within the other operational units, that's why these processes are a reliable source of trust for the dynamics of the whole service. That being said, studying also the remaining units will provide an even deeper analysis, able to map every single process of the One Stop Shop.

Another limitation is represented by the liquidity availability. This factor is crucial to intervene on the levers of intervention such as computerization or human resources. Moreover, this features may not be related to the internal efficiency of the structure, but depend more on the funding power of the municipality of Palermo. For this reason, implementing some of the chosen policies may not be possible due to the lack of available transfers from the local government. Although some of the solutions may not be feasible, the purpose of such study was to provide

decision makers with a full view of the inside mechanisms and give them awareness of the consequences that a decision can create within the system.

5.3 Further Research

Further research should investigate the mechanisms and dynamics of the other units of Palermo's One Stop Shop and verify their efficiency, in order to give a global perspective of the service and create possible comparative studies among different operational units. Those comparisons can be relevant to understand which is the unit that needs to be implemented more.

Also, it will be interesting to investigate on the reasons why a relevant part of the population has difficulty communicating with the local municipality using the online support, and how will it be possible, to create common awareness of the potential of the web, as an instrument for an efficient management of information, and maybe as the only tool with the power to reduce the heavy Italian bureaucracy system.

REFERENCE

Abedian I et al. (1998). *Trasformation in action.* University of Cape Town press, pag. 12-43.

Amignoni F., Miolo Vitali P., (2003). *Misure multiple di performance,* Egea, Milano

Armostrong, M. and Baron, A. (1998) *Performance management: the new realities*. London: Institute of Personnel and Development.

Bent, Stephen, Kernaghan, Kenneth, and Marson, Brian D. (1999) *Innovations and Good Practices in Single-Window Service,* Canadian Centre for Management Development.

Bianchi, C. (2004). *Sistemi di programmazione e controllo per l'azienda Regione.* Giuffrè, Milano.

Bianchi C., (2009). *Conceptual models and operative tools for improving customer satisfaction in the public sector reflections on the Italian experience*. Paper presented at the 1st International SMOG Conference 2009

Bianchi, C. (2009) *Tailoring planning & control systems to Customer satisfaction in the public sector: A 'Reinventing Government' perspective from the Italian Context,* EGPA Conference, Malta 2009

Bianchi C (2010) *Improving performance and fostering accountability in the public sector through system dynamics modeling: from an 'external' to an 'internal' perspective.* Syst Res Behav Sci 27(4):361–384

Bianchi C. (2012). *"Enhancing performance management and sustainable organizational growth through system dynamics modeling".* In *"Systemic Management for Intelligent Organizations: Concepts, Model-Based Approaches, and Applications",* Groesser, S. N. & Zeier, pag. 143-161

Bolland T. Fowler A. *A systems perspective of performance management in public sector organizations.* The international journey of public sector management, Vol. 13 No. 5, 2000, pp. 417-446.

Bouckaert G, Van Dooren W. (2002). *Performance Measurement: Getting Results*. Public Performance & Management Review, Vol. 25, pag. 329-335.

Borins S (2000). *Loose canons and rule breakers, or enterprising leaders? Some evidence about innovative public managers.* Public Administration Review, 60(6): 498-507.

Bringall S. Modell S. *(2000) An institutional perspective on performance measurement and management in the 'new public sector'.* Management Accounting Research, 2000, 11**,** 281–306

Brunetti G. (1979). *Il controllo di gestione in condizioni ambientali perturbate*, Angeli, Milano.

Caron, Daniel and Bent, Stephen (1999) *Collaboration in Building Single- Window Projects: The Art of Compromise*.

Chenhall R.H., Langfield-Smith K., (2007) Multiple Perspectives of Performance Measures, European Management Journal Vol. 25, No. 4, pp. 266–282,

Cave M., Hanney S., Henkel M., Kogan M., (1997). T*he use of performance indicators in higher education. The challenge of the quality movement,* Jessica Kingsley Ltd London

Coda V (2010) Entrepreneurial values and strategic management: essays in management theory. Bocconi University Press, Milan

Cosenz, F. (2011). *Sistemi di governo e di valutazione della performance per l'azienda università.* Giuffrè, Milano.

Curristine T., et al. 2007. *Improving public sector efficiency: challenges and opportunities.* OECD
Journal on Budgeting, Vol. 7, pag. 5-38.

Day P & Klein R (1987) *Accountabilities: Five public services*, Tavistock, London.

Dixon, J.R., Nanni, A.J. and Vollmann, T.E. (1990), *The New Performance Challenge – Measuring*
Operations for World-Class Competition, Dow Jones-Irwin, Homewood, IL.

Eccles, R.G. (1991), *The performance measurement manifesto*, Harvard Business Review, January-February, pp. 131-7.

Ewell P.T. (1999), *Linking performance measures to resources allocation: exploiting unmapped terrain*, in Quality in Higher Education, vol. 5 n.3 pag 191-208

Federal Benchmarking Consortium (1997) *Serving the American Public. Best Practices in One-Stop Customer Service.*

Ferreira, A. and Otley, D. (2005), *The Design and Use of Management Control Systems: An Extended Framework for Analysis*, Lancaster University Discussion Paper.

Fitzgerald, L., Johnston, R., Brignall, T. J., Silvestro, R., & Voss, C. (1991). *Performance Measurement in Service Businesses*. London: CIMA.

Fitzgerald, L. and Moon, P. (1996), *Performance Measurement in Service Industries: Making it Work*, London, CIMA.

Forrester, J.W. (1958), *Industrial Dynamics--A Major Breakthrough for Decision Makers*, Harvard Business Review, Vol. 36 (4), pp. 37-66.

Gil-Garcia, J.R. & Pardo, T. (2006) *Multi-Method Approaches to Understanding the Complexity of e-Government International Journal of Computers,* Systems and Signals, Vol.7, No.2.

Kaplan, R. S. (1986), *Accounting lag – the obsolescence of cost accounting systems*, California Management Review, Vol. 28 No. 2, pp. 174-99.

Kaplan R, Norton D (1996) *The balanced scorecard: translating strategy into action*. Harvard Business School Press, Boston

Klut L. Martin J. (2000) *Strategic performance management: A balanced approach to performance management issues in local government.* Management Accounting Research, 2000, 11**,** 231–251

Hayes, R.H. and Abernathy, W.J. (1980), *Managing our way to economic decline*, Harvard Business Review, July-August, pp. 67-77.

Heinrich J. *Outcomes-Based Performance (2002) Management in the Public Sector: Implications for Government Accountability and Effectiveness.* Public Administration Review • November/December 2002, Vol. 62, No. 6

Hood C (1991) *A public management for all seasons? Public Administration*, 69(1): 3-19.

Hood, C., 1995. *The 'new public management' in the 1980s: Variations on a theme, Accounting, Organisations and Society*, 20(2/3), 93–110.

Ittner C., Larcker D., and Meyer M. W.(*2003*) *Subjectivity and the Weighting of Performance Measures: Evidence from a Balanced Scorecard*. The Accounting Review: July 2003, Vol. 78, No. 3, pp. 725-758.

La Ferla F. Maritano F. (1996) *Procedure per l'insediamento di attività economiche: Pratiche, ostacoli, ritardi e confronti europei*

Jones L. Thompson F. 1997. *L'implementazione strategica del New Public Management*. Azienda Pubblica, Vol. 6, pag. 55-80.

Linard K Dvorsky L (2001) *People - not human resources: the system dynamics of human capital*
accounting. In: Operations research society conference, University of Bath, Bath

Linard K, Fleming C, Dvorsky L (2002) *System dynamics as the link between corporate vision and*
key performance indicators. In: Proceedings of the 20th system dynamics international conference, Palermo

Mayston, D. J., (1985). *Non-profit performance indicators in the public sector,* Financial Accountability and Management, 1, 51–73

Manning N., James O. (1996). *Public Management Reform: A Global Perspective*. International Review of Administrative Sciences, pag 143–150.

Maria A. Wimmer, (2002). *A European perspective towards online one-stop government: the eGOV project.* Electronic Commerce Research and Applications 1 92–103
Moore M. (1995). *Creating Public Value. Strategic Management in Government*. Harvard University Press: Cambridge, Mass.

Morecroft J (2007) *Strategic modeling and business dynamics*. Chichester, Wiley

Morris M & Kuratko D (2002) *Corporate Entrepreneurship.* Harcourt College Publishers, Fort Worth.

Naschold, Frieder (1996). *New Frontiers in Public Sector Management. Trends and Issues in State and Local Government in Europe*. Berlin, New York, Walter de Gruyter.

Neely, A.D., Gregory, M. and Platts, K. (1995). *Performance measurement system design – a literature review and research agenda.* International Journal of Operations & Production Management, Vol. 15 No. 4, pp. 80-116.

Oliva, R., Sterman , J. (2009). *Death Spirals and Virtuous Cycles: Human Resource Dynamics in Knowledge-Based Services.* The Handbook of Service Science. P. Maglio, J. Spohrer & C. Kieliszewski. London. Springer.

Ongaro E., (2004). *Process management in the public sector the experience of one-stop shops in Italy.* The International Journal of Public Sector Management Vol. 17 No. 1, 2004 pp. 81-107

Osborne D & Gaebler T (1992) *Reinventing government: How the entrepreneurial spirit is transforming the public sector.* Addison-Wesley, Reading.

Otley, D. (1999), *Performance Management: A Framework for Management Control Systems Research,* Management Accounting Research, Vol. 10 (4), pp. 363-382.

Poister T., Streib G. (1999). *Performance measurement in Municipal government: Assessing the state of the practice.* Public Administration Review, Vol. 59, pag. 325-335.

Pollitt, C., (1986). *Beyond the managerial model: the case for broadening performance assessment*
in government and the public services, Financial Accountability and Management, 2, 155–170.

Pollit, C. (2002). *Clarifying convergence striking similarities and durable differences in public management reform,* Vol. 4 Issue 1 2002 471–492 Public Management Review

Wolstenholme, E. (1993). *The Evaluation of Management Informational Systems - A Dynamic and Holistic Approach* . John Wiley & Sons.

Ramamurti R (1986). *Public entrepreneurs: Who they are and how they operate.* California Management Review, 28(3): 142-158.

Michael J. Radzicki and Robert A. Taylor (2008). *In U.S. Department of Energy's Introduction to System Dynamics*. Retrieved 23 October 2008

Richardson, P.R. and Gordon, J.R.M. (1980), *Measuring total manufacturing performance,* Sloan Management Review, Winter, pp. 47-58.

Richmond B (2001) *A new language for leveraging scorecard-driven learning*. Reprinted from "Balanced Scorecard Report". Harv Bus School Publ 3(1):11–14

Ritchie-Dunham JL (2001) *Informing mental models for strategic decision making with ERPs and the balanced scorecard: a simulation-based experiment.* In Proceedings of the 19th system dynamics international conference, Atlanta

Rosenbloom D. Cong T. (2013). *Coproducing "clean" collaborative governance.* Public Performance & Management Review, Vol. 36, No. 4, June 2013, pp. 544–561.

Sinclair A. (1995) *The chameleon of accountability: Forms and discourses.* Accounting, Organizations and Society, 20(2/3): 219-237.

Skinner, W. (1974), *The decline, fall and renewal of manufacturing,* Industrial Engineering, pp. 32-8.

Smith P., (1990) *The Use of Performance Indicators in the Public Sector*. J. R. Statist. Soc. A 153,Part 1,pp. 53-72

Sterman J.D. (2012), *Sustaining Sustainability: Creating a Systems Science in a Fragmented Academy and Polarized World*, M.P. Weinstein and R.E. Turner (eds.), *Sustainability Science: The Emerging Paradigm* 21 *and the Urban Environment*, DOI 10.1007/978-1-4614-3188-6_2,

Sterman, J.D.(2000), *Systems Thinking and Modeling for a Complex World*, Irwin/McGraw-Hill

Suwignjo P., U.S Bititci, A.S Carrie, (2000), *Quantitative models for performance measurement system*, int. J. Production Economics 64 (2000) 231-241

Terry P. L. (1993) *Why we should abandon the misconceived quest to reconcile public entrepreneurship with democracy: A response to Bellone and Goerl's 'Reconciling public entrepreneurship and democracy'*, Public Administration Review, 53(4): 393-395.

Velotti L. Botti A. Vesci M. *(2012) Public-private partnerships and network governance. What Are the challenges?* Public Performance & Management Review, Vol. 36, No. 2, December 2012, pp. 340–365.
Warren K (2008) *Strategic management dynamics*. Wiley,

Weinstock M (2002) *Building entrepreneurs Government Executive,* 34(7): 55-60. Yin R (2003) Case study research: Design and methods, Sage, London.

Wimmer M. (2002) *A European perspective towards online one-stop government: the eGOV project.* Electronic Commerce Research and Applications 1 (2002) 92–103

Wolstenholme E. F. (1990) *System Enquiry - a System Dynamics Approach*, Wiley, Chichester.

Wolstenholme E., (1998) *Qualitative v. Quantitative Modelling: The Evolving Balance*, 1998 International System Dynamics Conference

Normative References

Law 8 August no. 431/1985

Law 241/90, article 19, article 20, article 21

Presidential decree 447/1998

Presidential Decree no. 160/2010

Web References

www.anci.it

www.systemdynamicsapplications.com

www.comune.palermo.it

www.supera.comune.palermo.it

Appendix. Equation of the System Dynamics Model

STOCKS

Sent applications = INIT_VALUE 250 applications

Applications = INIT_VALUE 400 applications

verified applications = INTI_VALUE 240 applications

Number of applications sent to the external administrations = INIT_VALUE 200 applications

Number of applications checked by external administration = INIT_VALUE 100 applications

Quality = 0.4

Human resources = INIT_VALUE 14 workers

Level of computerization = INIT_VALUE 8 softwares

Liquidity = INIT_VALUE150000 euros

FLOWS

Applications sent by mail = applications sent by mail/one week

Applications sent online = applications sent online/one week

Applications sent by certificated mail or front office = Applications sent by certificated mail or front office/one week

Change in applications = sent applications/one day

Change in verified applications = applications/preliminary control completion time

Change in number of applications sent to the external administrations = verified applications/time to send an application to external administrations

Change in number of application checked by external administration = number of applications sent to the external administrations/average time for external administration control

Authorizations = number of applications checked by external administrations/standard time for authorizations

rejections: number of applications checked by external administrations * percentage of rejections

Change in quality = (indicated quality- quality)/adjustment time for quality

New investment in human resources = (liquidity*percentage of liquidity invested in human resources) / investment adjustment time

Investments in computerization = liquidity*percentage of liquidity invested in computerization)/ investment adjustment time

Municipal transfer per week = municipal transfers/one week

Change in human resource = (needed human resource* effect of liquidity on human resources)/HR adjustment time

Change in computerization = (indicated level of computerization - level of computerization)/adjustment time for computerization

VARIABLES

Productivity = INIT_VALUE 9*effect of computerization on productivity

Preliminary control completion rate = Human resources * productivity

Preliminary control completion time = applications/ preliminary control completion rate

Preliminary control completion time/desired time for preliminary control

Desired time for preliminary controls = 2 weeks

Desired number of applications = preliminary control completion rate * desired time for preliminary control

Application gap = applications - desired number of applications

Needed human resources = ((applications_gap/productivity)/standard time for preliminary controls)* SWITCH_HR

HR adjustment time = 52 weeks

Percentage of liquidity invested in human resources = 0.6

Municipal transfer = 2884 (per week)

Adjustment time for investment in computerization = 52 weeks

Percentage of liquidity invested in computerization = 0.25

Effect of liquidity invested in computerization=GRAPH FUNCTION,(0,0) (300,0.150) (600, 0.400) (900, 0. 500) (1200, 0.600) (1500, 0.650) (18000, 0.680) (21000,0.720) (24000, 0.765) (27000, 0.824) (30000, 0.838)

Effect of liquidity investments in computerization = GRAPH FUNCTION, (0,0) (1000, 0.10) (2000, 0.70) (3000, 0.100) (4000, 0.200) (5000,0.300) (6000, 0.350) (7000, 0.400) (8000, 0.450) (9000, 0.500) (10000, 0.550)

Effects of application gap on level of computerization = GRAPH FUNCTION (0, 1.000) (40000, 1.000) (80000, 1.000) (120000, 1.002) (160000, 1.250) (200000, 1.300) (240000, 1.350) (280000, 1.400) (320000, 1.450) (360000, 1.500) (400000, 1.550)

Total effects on computerization = ((effect of application gap on level of computerizations - no_change_effect)*effect of liquidity invested in computerization)*(1-SWITCH_HR)+no_change_effect

No_change_effect = 1

SWITCH_HR = SWITCH FUNCTION, 1

Indicated level of computerization = Computerization*total effects on computerization

Adjustment time for computerization = 52 weeks

Level of computerization/desired level of computerization

Desired level of computerization = 16 (softwares)

Effects of computerization on productivity = GRAPH FUNCTION, (0, 0.300) (0.100, 0.300) (0.200, 0.500) (0.300, 0.700) (0.400, 0.850) (0.500, 1) (0.600, 1.200) (0.700, 1.350) (0.800, 1.450) (0.900, 1.500) (1, 1.500)

Total outcome = authorization + rejections

Effects of preliminary control ration on errors = GRAPH FUNCTION, (0,0) (0.5, 0.4) (1, 0.5) (1.5,0.6) (2, 0.950) (2.5, 1) (3, 1.050) (3.5, 1.100) (4, 1.150) (4.5, 1.250) (5, 1.3)

Percentage of errors in the preliminary control phase = 0.05*effect of preliminary control ratio on errors*effect of organizational effectiveness on errors

Number of errors = total outcome*percentage of errors in the preliminary control phase

Desired number of errors = 1 per week

Number of errors/desired number of errors

Effects of errors on quality = GRAPH FUNCTION, (0, 1) (1, 0.950) (2, 0.9) (3, 0.8) (4, 0.7) (5, 0.6) (6, 0.4) (7, 0.3) (8, 0.100) (9, 0) (10, -0.1) (11, -0.3) (12, -0.4) (13, -0.5) (14, -0.5)

Indicated quality = desired quality * effects of errors on quality

Desired quality = 1

Adjustment time for quality = 52 weeks

Effect of quality on incoming applications = GRAPH FUNCTION, (0, 0.4) (0.1, 0.45) (0.2, 0.5) (0.3, 0.65) (0.4, 0.8) (0.5, 1) (0.6, 1.1) (0.7, 1.2) (0.8, 1.3) (0.9, 1.4) (1, 1.5)

effects of total time/desired total time on incoming applications = GRAPH FUNCTION, (0, 1.5) (0.33, 1.45) (0.667, 1.35) (1,1.2) (1.333, 0.75) (1.667, 0.65) (2, 0.6) (2.333, 0.550) (2.667, 0.5) (3, 0.5)

Total effect on incoming applications = effects of total time/desired total time on incoming applications*effect of quality on incoming applications

Incoming applications sent by mail = 19*total effect on incoming application

Incoming application sent online = 23*total effect on incoming application

Incoming application sent by certificate mail or front office = 76*total effect on incoming applications

ORGANIZATIONAL EFFECTIVENESS POLICY

Organizational effectiveness = SWITCH FUNCTION, 1

Organizational effectiveness on = 0.7

Organizational effectiveness off = 1

Effects of organizational effectiveness on errors = organizational effectiveness on * organizational effectiveness + (1 - organizational effectiveness)*organizational effectiveness off