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A FRAMEWORK FOR SERVICE PRELIMINARY PLANNING IN
E-GOVERNMENT INITIATIVES

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Abstract

In this paper we propose a framework to support a preliminary planning of services in the e-Government domain, where we consider the case of Government to Business (G2B) interaction. The present work is founded in the context of the Service Science, an emerging effort to build a scientific discipline based on the concept of service. Services apply in a broad range of different domains, such as, among others, business, government, health care, finance. Due to the different facets of the concept of service, the diversities between these domains imply a growing complexity in providing a common theoretical framework. Moreover, in service planning where value configurations are strictly dependent on value propositions (and, in the eGovernment domain, on the political vision), the alignment of strategic and operational level is related to value based business modeling. The core of the proposed framework is a methodology, built on the basis of a conceptual model of the service domain. The general idea of the methodology is that the planning should be driven by a clear understanding of (i) the elements composing the service as a value configuration framework, (ii) the related qualities, and (iii) the strategic/political objectives. An application of the framework is discussed.

Keywords: *Service, Business Modelling, Planning Methodology, eGovernment*

1   INTRODUCTION

In this paper we propose a framework that aims to support the preliminary planning of services in eGovernment initiatives. The present work is founded in the context of the Service Science, an emerging effort to build a scientific discipline based on the concept of service (Chesbrough and Spohrer, 2006). Services apply in a broad range of different domains, such as business, government, health care, education, finance, transportation and communication. Due to the different facets of the concept of service, the diversities between these domains imply a growing complexity in providing a common theoretical framework. In particular, these efforts are directed towards providing a framework that aims to integrate Information and Communication Technology (ICT) with traditional paradigms of service management, such as e.g. customer relationship management. As said above, we focus on the eGovernment domain and in particular on Government to Business services. In this scenario, ICT represents a critical enabler in service interactions, in particular, within the Service Oriented Computing (SOC) paradigm (Papazoglou, Traverso et al., 2006). The Service Oriented Computing paradigm (SOC) points out the relevance of business modelling for service design and development. The focus on business models (Osterwalder, Pigneur et al., 2005; Weill, Malone et al., 2005) draws attention to the different layers of service design, that span from the business domain, where a service is supposed to have an outcome, to the technological layer that concerns the implementation of the web service. The different layers need a sharable representation of the objects and of the concepts involved in each domain, in order to make accountable the relationships between them at the different levels. Furthermore, a service scenario involves different organizations, that have different representations of the business domain and of the implemented web services. Indeed, in a service scenario, the business models representation is strictly related to the research problem of the IT-Strategy alignment (Chan and Reich, 2007; Luftman, Papp et al., 1999).

In this scenario, we focus on the challenges for public administrations, in particular, in Government to Business (G2B) interactions. Indeed, public administrations involved in the process of planning and production of eServices in eGovernment initiatives tend to privilege the development of administrative

services, namely, prescriptive public administration obligations, strictly related to laws to be enforced, disregarding the importance of value added services. The value added services, besides minimizing the waste of resources (money and time), have the primary objective of enhancing business performance and producing effective outcomes. An example of administrative service is the provision of an authorization, while a value added service is the provision of territorial information that may be useful for marketing processes (Palmonari, Viscusi et al., 2008). The distinction between the two kinds of services is not clear-cut (Palmonari et al., 2008); in fact, an administrative service that contributes to the efficiency of a business is also a value added service. Moreover, in service planning where value configurations are strictly dependent on value propositions (and, in the eGovernment domain, on the political vision), the alignment of strategic and operational level is related to value based business modeling. Thus, the main question concerns how to deal with service complexity in eGovernment planning activity, on the basis of a sharable representation of service to the different stakeholder involved in the planning activities. In our perspective planning activity is a preliminary design phase of value based services. In fact, in order to plan valuable projects a configuration activity is carried out of the different elements in the domain, by means of a representation of the corresponding concepts and relationships among them. As pointed out by Brown (1998), while design is a complex task, nevertheless configuration task is an essential ingredient of the complete design task. Indeed, we point out that configuration is a relevant design task in planning activity.

In the next Section we propose a conceptual model for services, discussing business modeling issues in the area of information systems. Afterwards, we discuss the proposed methodological framework and its application.

2   A CONCEPTUAL MODEL FOR SERVICES

This section discusses a model for service in business interaction. The model relies on the concepts emerging from the literature on services, value, and business modeling (Osterwalder et al., 2005) and available reference ontology such as e.g. the one proposed in (Andersson, Bergholtz et al., 2006). Other descriptive models exist in the SOC literature, for example taxonomies targeting the issue of the formal description of non-functional service properties (O'Sullivan, Edmond et al., 2005). Furthermore, according to the value constellation perspective for value co-production (Normann and Ramìrez, 1994), the model (see in Figure 1) considers service as a framework for offering of services/products. The proposed conceptual model has been widely discussed in (G. Viscusi, 2007); the aims of the model is to provide a representation of the concepts involved in service interactions, also considering the different domains of interaction, as the public administration one; whereas models available in the literature (Andersson et al., 2006) are based mostly on business related perspectives, where public administration and eGovernment domains are poorly considered (or not considered at all) and mainly under a customer oriented perspective, that is what we can associate to a New Public Management perspective (Cordella, 2007; Dunleavy, Margetts et al., 2006). As widely recognized, see e.g. (Bowker and Star, 1999), the choice of what to represent in a formal representations has impacts on the final use of the information system that will embed such a choice. In available models, bureaucracy oriented perspective (Du Gay, 2000) on public administration and eGovernment are missed. In this work we briefly described the elements of the model, reminding to (G. Viscusi, 2007) for further details..
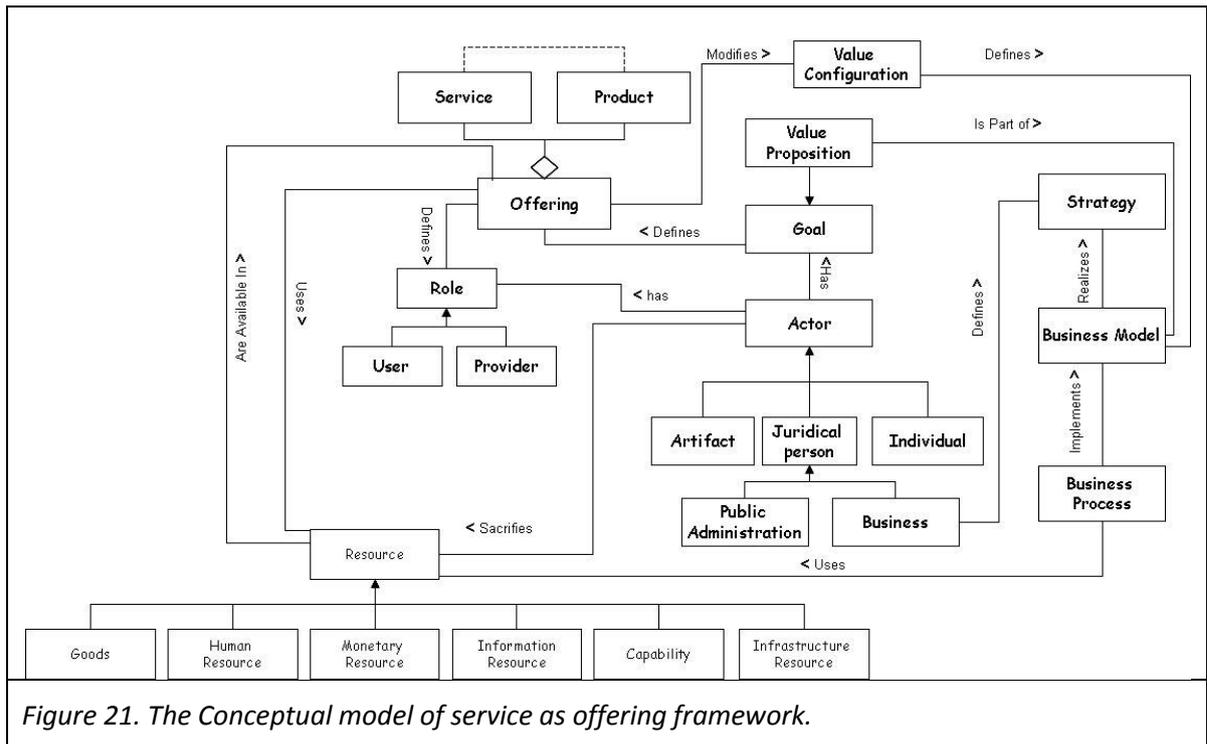
Figure 21. The Conceptual model of service as offering framework.

Taking this into account we start the description of the model in Figure 21 from the core concept of Offering, that is a bundle of one or more Services and Products. In fact, an Offering can represent an offering of (i) Products alone (the goods consumption vision of industrial society), of (ii) Service alone (as e.g. an extreme vision of service economy, such as self-service vision is) or (iii) a bundle of a services supporting product delivery (Normann et al., 1994). Furthermore in our perspective the Offering modifies Value configuration, that is which Resources and Actor participate to the service interaction. From the Business perspective, a Value configuration defines the right Business Model, realizing a Strategy defined by the Business involved in service interaction. In fact, a Business is-a Juridical Person that has one or more Goals (as every Actor has), where a Value proposition is-a Goal part of the Business Model. The Business Model defines what the Business considers having value for its activities, and what the Business is aimed to make available in the Offering. One or more Resources represent what is made available in the Offering by the Business and the other types of Actor; thus, Actor sacrifices Resources that the Offering uses and at the same time makes available for the different Actor involved in the Service interaction. This is a relevant issue of the model, because it emphasizes the active role of an Actor, that sacrifices Resources available then in the Offering, where access to the Resources sacrificed is defined by the Role played by the Actor in the Offering.

The Role is defined by the Offering and can be a User or a Provider. We introduce Role and Actor to emphasize the different types of action that they can carry out24: while the core range of actions defined for a User or a Provider are functionally defined (i.e. a User requests, a Provider provides), the variability is introduced by the Actor, that acts under the constraints that depend from he's being an Artifact, a Juridical Person, an Individual. Indeed, the participation of an Actor to the Offering is functionally defined by the Role and bound by the non-functional constraints related to he's being an Artifact, a Juridical Person, an Individual. In fact, looking at Public Administration and Business that are Juridical Persons, to be a Provider or a User is bound in the two cases by norms and in the Business case, e.g. by the competitive environment. Further, an Individual is bound by the type of Individual he is; e.g. a citizen that is a disabled person is bound by the presence of access barriers to the access to Offering and to have a Role in the Offering (not only as a User, but also as Provider: in fact, supposing he cannot walk, with a notebook and a DSL access he can become a service provider by its own home, as

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24 On the difference between *actor* and *role*, see (Boudon, 2001)

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the others do at office or at store). We introduce Artifact, to emphasize that Offering can involve also exclusively two or more non-human actor (e.g. two web services); also in this case, non-functional constraints bound the Artifact participation and access to the Offering. It is worth noting that introducing Role and Actor concepts emphasizes the dynamic change of Roles in the service interaction, where an Actor can be at the same time a User and a Provider (as in the case of coopetition).

The main characteristic of service as an offering based value creation framework is that Actor can access the Resources that are available in the Offering. In the model, Resources can be Goods, Human Resources, Monetary Resources, Information Resources, Infrastructure Resource, and Capability. In the model, the concept of Capability is influenced by the theoretical perspective that evaluates the capability (Sen, 1999) of a system to achieve valuable goods or beings, namely, functionings (Nussbaum, 1999; Sen, 1999) such as, e.g., the management of information and knowledge, and to convert them into utilities, e.g. the provision and the enhancement of services. Furthermore, in the case of Actors that are Businesses the configuration of the Resources available in the Offering depends on the Business Model chosen. In fact, see the right hand side of Figure 21, the way the Resources are used depends on the Business Process that implements the Business Model, realizing a Strategy.

The model shows how the value of an offering depends on the configuration of all the elements corresponding to the concepts in the model. These latter have different facets belonging to different systems besides the functional one (mostly considered in the service literature). As said, a major issue is to provide a sharable representation of this model, useful to improve communication among different actors, and to support a value based planning and design of services. Indeed, the model is at the basis of the methodology described in the following Section.

3 THE METHODOLOGY

Planning activity is a relevant issue in the management of information systems, due to the different facets of an organization and of its surrounding environment (Avison and Fitzgerald, 1995; De Michelis, Dubois et al., 1998). As claimed in Checkland (1990), these facets cross the boundaries of procedural methodologies and point out an integrated approach involving social and organizational perspectives. Nevertheless, after the great attention to methodologies before the 1990s, today planning methodologies attention is lower both from scholars and practitioners (Avison and Fitzgerald, 2003). We point out that methodologies for planning are relevant to master the complexity of the different facets of the information systems, even more in the service provision, where value configurations change dynamically, requiring flexibility but also modular tools tracing the "paths" followed in the project development. Moreover, in the eGovernment area planning presents original research aspects, due to the complexity in the alignment of the different disciplinary facets involved. Due to these issues, we discuss a methodology based on the model proposed in previous Section. To support the methodological framework we choose a semantic repository of G2B services (Palmonari et al., 2008) based on the model described in the previous sections, and the Map model (Rolland, 2007) in order to represent the strategy. The Map model conforms to existing goal models (Estrada, Rebollar et al., 2006; Mylopoulos, Chung et al., 1999) by recognizing the goal as intention, but departs from them by introducing the concept of *strategy* to attain a goal. Map extends the modeling of the information about the Universe of Discourse (Sølvberg, 1999) from "what is done by the system" approach with the "why is the system like this"(Rolland, 2007). A Map is a labelled directed graph with *goals* (intentions) as nodes and *strategies* as edges between goals, graphically represented through a begin *Start* node and a final *Stop* node. An edge enters a node if its strategy can be used to achieve the corresponding goal. Since, there can be multiple edges entering a node, the Map is capable of representing the many strategies that can be used for achieving an goal. A *section* is a triplet <G_i, G_j, S_{ij}> and represents a way to achieve the target goal G_j from the source goal G_i following the strategy S_{ij} Taking that into account, in the following we discuss the proposed methodology.

In the methodology, the aims is to move from an *AS-IS service configuration* to a *TO-BE service configuration* where the domain knowledge on services is represented in a repository and strategic intentions for the different systems/layers to configure are represented with Maps. The Semantic Repository together with Maps are the *configuration components* (Saeki, 2006) used to obtain different versions of service value configuration as output of the application of the three phases of the methodology. Knowledge in the repository and Maps are evolving together with service configuration versions, producing new components configuration. The general idea of the methodology is that the planning should be driven by a clear understanding (i) of the elements composing the service as a value configuration framework, (ii) of the related qualities, (iii) and by a clear sharing of the strategic/political objectives from the different systems involved. According to such an analysis, the planning activity results in a new service configuration starting from an actual service configuration based on the starting strategic/political objectives compared with the actual strategy, mainly at operational level. The new service configuration should better fit the achievement of new target qualities and provide insights to improve the fitness of the operational level with strategy. As shown in Table 1, the methodology is composed by three phases, namely *service reconstruction, quality assessment, service configuration*. In the following we detail the different phases. The new service configuration should better fit the achievement of new target qualities and provide insights to improve the fitness of the operational level with strategy.

The service reconstruction phase aims (i) to define the service concept (Grönroos, 2000) by providing a clear representation of the strategic/political objectives (in the following, for simplicity we use only strategic objectives) that guide the choice of the service, and (ii) to define the actual available service value configuration, i.e. what are similar or useful services to compose the new service package.

1. SERVICE RECONSTRUCTION
- Define Service Strategy Map (AS-IS)
- Define Service Concept (if available use repository)
- Exploit available service configuration
2. QUALITY ASSESSMENT
- Assess Quality Layers
- New Quality Target Definition
3. SERVICE CONFIGURATION
- Define Service Strategy Map (TO-BE)
- Define Service Value Configuration (TO-BE)
- Choose Projects
Table 11. Phases of the methodology.

The service package (Grönroos, 2000), is usually composed by core services and support services, while in our case, using the semantic repository concepts proposed in (Palmonari et al., 2008), the service package is composed by administrative services (the basic functionalities and resources offered) and value added services (the functionalities and resources considered of value for the user). The first step is (1) to Define a Service Strategy Map representing the AS-IS state on the basis of the available documentation provided by the public decision makers before the service planning is starting. Once the Map is built, the following step is (2) Define the Service Concept on the basis of the knowledge provided by the semantic repository that is related to the considered service strategy, namely all the available administrative services, the available value added services and the related resources (we suppose that the semantic repository is already in use within the organization; if it is not the case, this step represents an input to populate the semantic repository). The service concept is built by integrating available services with the ones described in the starting documentation with the desiderata from the public decision makers. The third step is (3) Exploits available services configuration by considering all the results from the semantic repository. The actual configuration is defined by considering all the available services and the related resources, i.e. also those not considered in order to build the service concept.

The output of the service reconstruction is a service configuration, whose configuration components are a service strategy map and a set of view from the repository representing the available candidates for the final service package composing the AS-IS service package. It is worth noting that in the case a service strategy Map and a semantic repository are already available as desiderata documentation, they define a starting service value configuration.

The quality assessment phase aims to identify and measure the most relevant qualities of the different facets characterizing the various aspects involved in the service provision. According to ISO (2000), a quality is the degree to which a set of inherent characteristics fulfils requirements. Qualities are related to (i) the Services dimension (involving qualities both for providers and users); (ii) the ICT Resources dimension, where ICT resources are classified as (i) technological infrastructure, namely Hardware and Network technologies (HW-Networks), and (ii) as Data managed in the service provision (involving qualities mainly for provider); (iii) the Information Behaviours and Values (IBV) dimension, that is the level of information orientation and usage (Marchand, Kettinger et al., 2001) within an organization (involving qualities for provider). The output of the Quality Assessment phase is a complete set of qualities for the AS-IS Service value configuration providing insights for the TO-BE Service value configuration.

The goal of the service configuration phase is to provide the TO-BE service value configuration. Taking that into account, the first step is (1) to Define a Service Strategy Map, representing the TO-BE state, on the basis of (i) the comparison with the service strategy Map representing the AS-IS state, (ii) the actual AS-IS service package, and (iii) the results of the quality assessment phase. Once the Map is built, the following step is (2) to Define the Service Value Configuration (TO-BE), on the basis of the knowledge provided by the semantic repository, where services are classified and chosen on the basis of (i) the corresponding strategy in the Map, (ii) (if available) the quality evaluation for that strategy. The output of the step is a new service value configuration, whose configuration components are a new service strategy Map, and another view from the repository representing the TO-BE service value configuration with the final service packages composing the TO-BE service package. The final step allows to choose projects by clustering the services on the basis of (i) the elements of the TO-BE service value configuration (e.g. through the impact on same processes in the value-chain), and of (ii) the strategy they are related to in the TO-BE strategy Map. Finally, the methodology has been conceived as a modular tool that can be applied by considering all the three phases, or only by using single phases or step, also to support other planning methodologies. In the following, we provide an example of the methodology application based on the experiences carried during the G4B (Barone, Viscusi et al., 2006) and eG4M (Batini, Viscusi et al., 2009; Gianluigi Viscusi, Batini et al., 2008) projects.

4 APPLICATION

This section discusses the application of the methodological framework in a scenario, that refers to the Italian eGovernment plan. In 2002 the Italian Ministry for Innovation and Technologies establishes ten objectives for the government action, enabled by ICT, in the area of innovation up to 2005 (MIT, 2002). The general objectives to be achieved were *on-line services for citizens and businesses*, *internal efficiency of public administration*, *enhancement of Human Resources transparency, quality of services for citizens and businesses* (see Figure 2)*.* The plan claims for an integrated vision of the Italian Public Administration, allowing cooperation and reduction of redundancies.

Figure 22. Map for Realizing eGovernment in Italy.
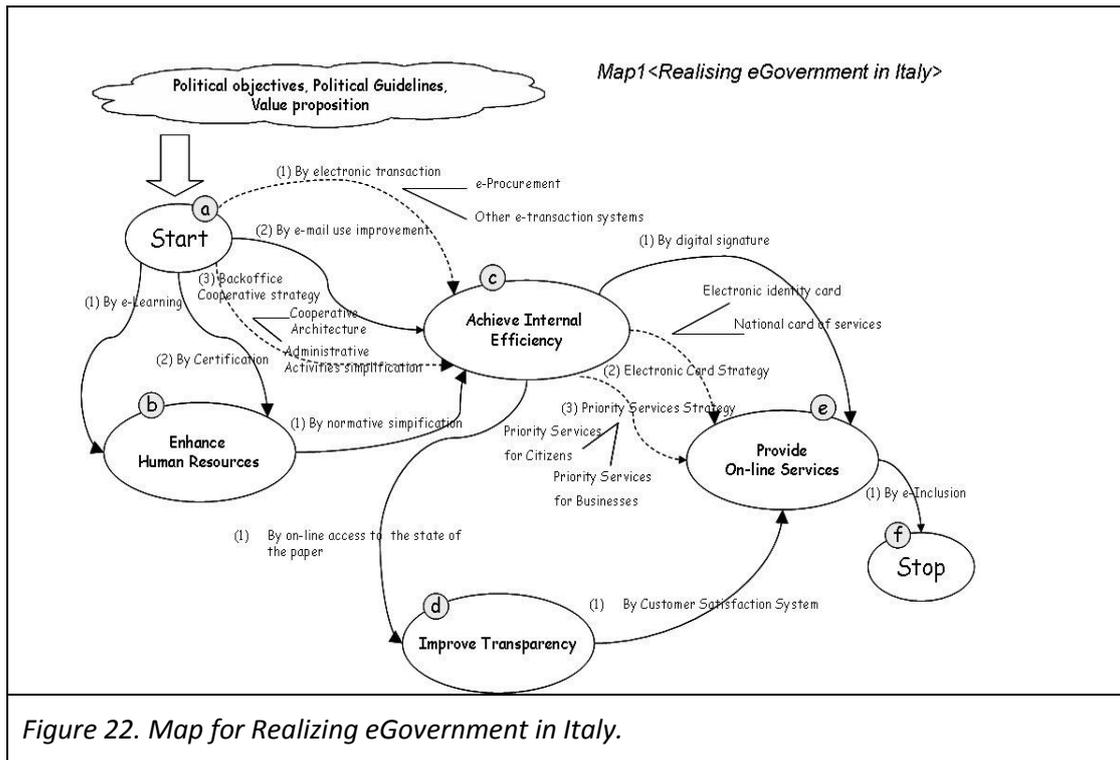
In this scenario, we analyze the provision of G2B services in the case of a business acting a open new sales point process. The services correspond to a sub-strategy of *realize the One-Stop-Shop* represented in the Map of Figure 3 as a specific objective that refines the strategic objectives of the Italian e-Government plan (see the section *<Achieve Internal efficiency, Provide On-line Services, Priority Services for Businesses>* in the Map in Figure 2). The One-Stop Shop has the goal to realize a system aimed to offer the provision of integrated services to the enterprises. Businesses can request them from its offices, from the intermediaries or the nearest point of access made available from any public institution. The system avoids businesses from interact with a plurality of agencies and to know the existing procedures for the accomplishment of their requests.

4.1   Service Reconstruction

We now consider the case of a business operating in the furniture industry. The business needs to open new sales points in an hypothetic town *A* and looks for the available territorial marketing services. We assume that a Local Public Administration (PAL) *A* wants to improve the actual service for territorial marketing because the number of access to the actual web portal for territorial market is lower as the expected threshold. The portal has the same characteristics of many other similar Italian Portal for Territorial Marketing of PALs or Private Agencies. In order to support the PAL in this process of improvement we now apply the methodology focusing on the *service reconstruction* phase.

Figure 23. Map for the realizing services for businesses objectives.
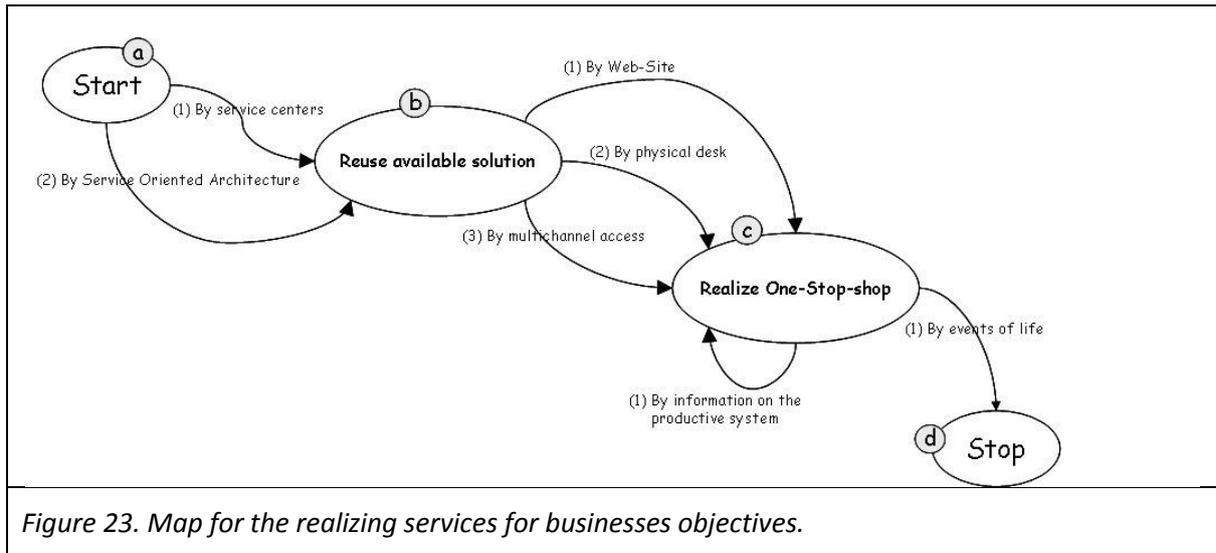
On the basis of the available documentation we define the AS-IS strategy Map represented in Figure 4. The territorial marketing service is defined mainly by the goal *Define opportunities on the territory* (b) that has two strategies to achieve it, namely a traditional desk strategy and a Web-Site strategy (this latter is the case of the PAL considered). The Map shows that the objective is fulfilled for both the strategies by services providing information on the territory in a PAL-oriented interaction, that is the PAL defines its own available information on new opportunities, on the actual norms, and providing geographical maps (if available). Analyzing the Map may allow to infer that the desk service is preferred because of the chance to obtain something more or at least not planned by the system (as in the case of the Web-Site that has rigid constraints). In fact, an interview with a PAL officer confirmed that in the PAL case businesses prefer the desk service offered by appointment. Indeed, to refine the Map on the strategy *By Desk* would shown that there is a misalignment with the *By Web-Site* strategy because of the offering allowing to achieve the *By Desk* strategy with a more complex and collaborative way of interaction. Thus the analyses of the AS-IS Map shown that there is a misalignment between the main objectives of the Italian e-Government plan (at the top level) and the operational level where the Web-Site is developed but not exploited in a valuable way for the PA and businesses (that have nevertheless to loose time for appointment). Moreover, from the Map emerges that achieving the strategy *by events of life* it means that the PAL do not have a perspective on businesses based on business value activities, but a perspective based on an administrative view of the enterprise activities (e.g. open a new firm refers to the *what* an enterprise must fulfill in terms of norms in order to achieve the opening a new firm, not to the *how* this can have value for its activities).

Figure 4. Map for the Pas' territorial marketing services (AS-IS)
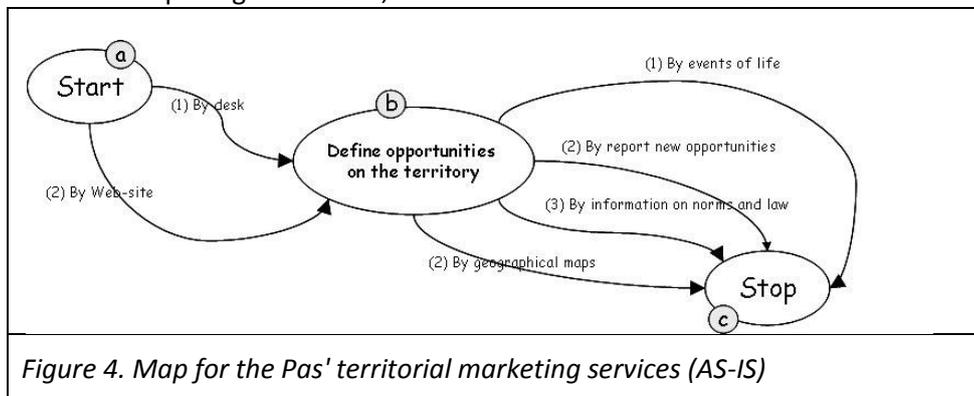
The By events of life strategy is inherited from the higher level Map (see Figure 3) refined from the top Map of the Italian e-Government plan (see Figure 2). To better show this issue we provide an example

from a central PA portal, namely www.impresa.gov.it. In this case, we do not have territorial marketing services as category; considering the characteristics of the service we follow the path by events of life - *Enterprise Development > Growth and strengthening of the enterprise*, but we do not found any service. This can depend on back-office (the central PA back office is not integrated with local PA back office), or most probably, because the service is under another event of life (our research shown that the territorial marketing service is related to processes of *Growth and strengthening of the enterprise*, considering the events of life perspective). Taking these issues into account, in the *Define the Service Concept* step, we exploit the knowledge provided by the semantic repository: we compare territorial marketing services retrieved on the basis of the *by event of life* strategy and the ones associated to the process that has the goal to open a new sales point. Now, we have to define the AS-IS strategy Map for the operational definition of the territorial marketing activity for businesses. We assume to consult the available documentation provided by consultants supporting the PAL in the service improvement. The business plan based on geomarketing analyses identifies the territory where the new point of sale must be located.

Figure 5. Map of the operational level of businesses research location activity.
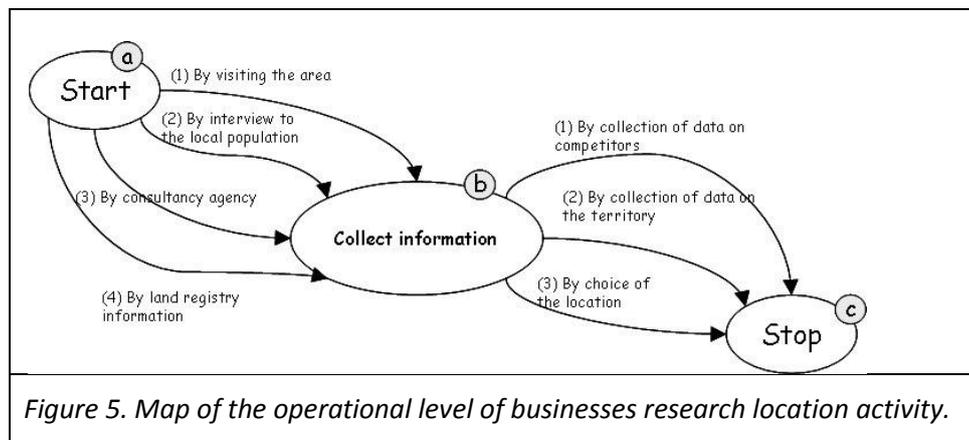
To be effective, the location research must be supported by a deep knowledge about the territory (e.g. number of inhabitants, number of resident households, etc.), and about competitors (e.g. number of hypermarkets, number of points of sales in the same territory, etc.). Collection of useful information from existing databases and repositories represent the major issues for the effectiveness of the process.

In fact, the goal Collect information at operational level is achieved by different strategies where PAL is concerned by three path, namely:

Path1 <Start, Collect information, By land registry information>,<Collect informationStop, By collection of data on competitors>

Path2 <Start, Collect information, By land registry information>, <Collect informationStop, By collection of data on territory>

Path3 <Start, Collect information, By land registry information>,<Collect informationStop, By choice of the location>

The Map shows the relevance of the land registry office, as potential provider of a business oriented offering; nevertheless, the Map shows a misalignment between the Define opportunities on the territory objective in the Map of Figure 4 (PA-oriented), and the Collect information objective in this Map: this latter, on the one hand, is business oriented at operational level, on the other hand it involves a PAL, by pointing out a potential value coproduction. In fact, the land registry office, on the one hand, may support the Collect information goal for businesses; on the other hand, by reconfiguring the service, the land registry office may exploit the support provided to businesses, by collecting information on businesses and on the local productive system. This issue aligns the Collect information goal with the high level strategy of the path <Realize One-Stop-shop, Realize One-Stop-shop, By information on the productive system>. At a glance, the analysis shows that there is a misalignment

between high level strategy of the Ministry eGovernment plan and the PAL goal of define opportunities on the territory, rather than with the operational level of Collect information.

We now carry out the Define the Service Concept step, by defining an AS-IS service value configuration on the basis of the association services/business processes in the semantic repository. In the following, we provide some snapshot from the implementation of the semantic repository as an ontology using the tool Protégé (2007). We refer to the OpeningNewSalesPoint process, considered as a sub-process of the strategic planning of the business infrastructure territorial development chain. The OpeningNewSalesPoint process is composed of three sub-processes, namely LocationResearchAndChoice, NewSalesPointSetUp, and NewSalesPointStartUp. The goal of the LocationResearchAndChoice sub-process is to find a location that satisfies the requirements of the business plan, and the GuidelinesOfTheFranchisor; both are represented in the ontology as Resources used in the LocationResearchAndChoice sub-process.
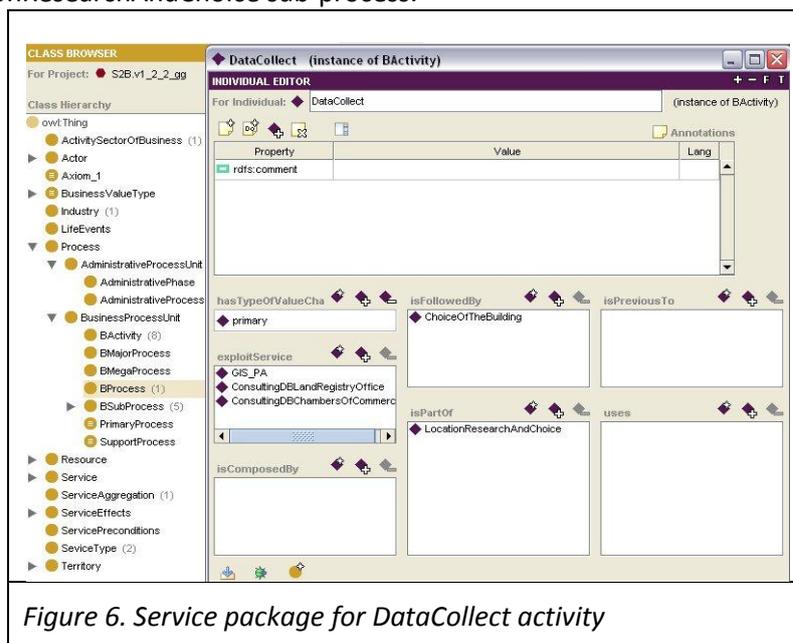

Figure 6. Service package for DataCollect activity

The repository supports accessing such a knowledge, providing an ontological representation of business processes based on the value-chain model. Moreover, the repository allows to navigate through the different activities of the LocationResearchAndChoice, providing views on the Abstract Services exploited by the process, and on the activities that compose the process. Focusing on the LocationResearchAndChoice process, we now consider the DataCollect activity, whose goal is to collect information to choose the most competitive location for a new point of sales. The goal of the DataCollect activity is to retrieve information about the territory and about competitors. The repository shows that the required knowledge is available in the databases of the local agencies and Chambers of Commerce, using services classified in the repository as SupportingKnowledge. Figure 6 shows the Abstract Services for DataCollect, namely: (i) ConsultingDBChambersOfCommerce, providing access to the databases of Chambers of Commerce; (ii) ConsultingDBLandRegistryOffice, providing access to the databases of the Land Registry Office (but not available for the considered PAL A, but in another PAL B); (iii) ConsultingGISPA service, that provides access to local public administration geographical data bases. This way, we have identified a basic AS-IS service concept composed by a service package involving the three services previous cited and the related processes. Together with the instances of the concepts on the left side of Figure 6 and with the Maps of Figure 4 and of Figure 5, the service concept is part of the AS-IS service value configuration, produced in step 3, namely Exploits available services configuration. Moreover, the semantic repository navigation has shown the presence of a ConsultingDBLandRegistryOffice service, provided by the PAL B. This service is a complementary configuration component part of the AS-IS service value configuration.

4.2   Service Configuration

We now consider the *service configuration* phase, where we first build a TO-BE service strategy Map by analyzing the configuration components of the AS-IS service value configuration (V1). The resulting TO-BE service strategy Map is described in Figure 7.

Figure 7. Map for the PAs' territorial marketing services (TO-BE).
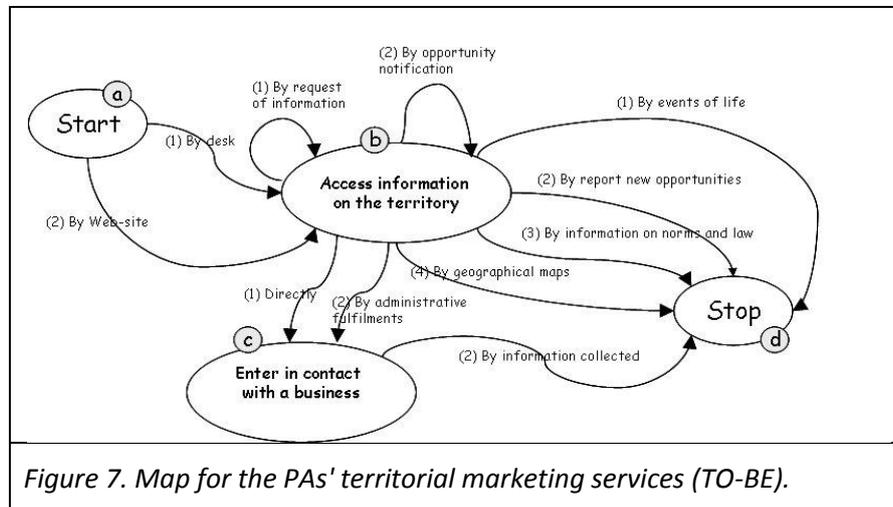
The PAL has to change the objective from the PA-oriented goal Define opportunities on the territory to Access Information on the territory, that is more business oriented because it implies not simply that the administration provides a list of services/opportunities (AS-IS), with no other chance of communication for the business; rather it provides businesses with the opportunity of having access to the public administration, that is to ask public administration for services (TO-BE). This relevant issue is represented by the thread relationship: < Access Information on the territory, Enter in contact with a business, By administrative fulfillments>, < Access Information on the territory, Enter in contact with a business, Directly>. In fact, this thread describes a way to exploit available strategy such as By Web-site and By-desk to obtain value for businesses (that can now not only consult a static and close list of services, but also ask the PAL for relevant information) and for PA (by the alignment with the Ministry objective <Realize One-Stop-shop, Realize One-Stop-shop, By information on the productive system>). Thus, in the TO-BE service value configuration these issues result in the following refinement (we use Mx to indicate the belonging Map, followed by the related Path):

M1-Pathc1c<Realize One-Stop-shop, Realize One-Stop-shop, By information on the productive system>

M2- Patha2b1c<Start, Access information on the territory, By Web-Site>,< Access information on the territory, Enter in contact with a Business, Directly>,<Stop, By information collected>

M2- Patha2b2c <Start, Access information on the territory, By Web-Site>,< Access information on the territory, Enter in contact with a Business, By administrative fulfillments>,<Stop, By information collected>

The two solutions are alternatives, but in the case of the PAL only the strategy that allows direct access through Web-Site needs to be improved. The improvement of this strategy will (i) enhance the number of visits of businesses to the Web-Site providing access to relevant data, and at the same time (ii) it will provide PAL with data on the productive system (through profiling of enterprises and mining on the data from the service requests). Taking into account that the Ministry eGovernment plan expects that PAs and PALs service frameworks are open and based on Service Oriented Architecture technologies such as SOAP, the service ConsultingDBLandRegistryOffice provided by the PAL B is relevant because it can be exploited through the alignment of the Path<Start, Reuse Available solution, By Service Oriented Architecture> in the Map of Figure 3. In fact, this is a choice that the AS-IS service value configuration offers to the PAL that is willing to improve its Web-Site for territorial marketing. Indeed, the final TO-BE

service value configuration allows PAL to define a plan for improving access to the DB of the Land Registry office for businesses from the PAL Web-Site; taking that into account, the project chosen is that of reusing a Web Services application from another PAL (B), enhancing the back-office integration and lowering costs of development. In conclusion, the methodology allows to (i) discover misalignment between goals from different levels (in this case strategic and operational), (ii) supporting a service package definition, and (iii) the choice of projects improving a service value configuration.

5   CONCLUSION AND FUTURE WORK

In this paper we propose a framework that aims to enhance agreement and a common understanding on what contributes to make a service valuable amongst a wide group of stakeholders. The core of the proposed framework is a methodology, built on the basis of a model of the service domain, this latter developed from a deep literature analysis and bound to experiences in research projects (Barone et al., 2006; Batini et al., 2009; G. Viscusi, 2007). The model at the basis of the methodological framework presents the concepts involved in the service interaction, whereas in many cases actual methodologies do not have a definition of the concepts characterizing the domain of intervention (Avison, D. E., et al. 2003). Furthermore, the methodology uses state of the art formalisms for goal modelling and semantic representation tools, including but not limited to the ones proposed in this paper. Another contribution is to show the methodology application in a complex domain such as the G2B domain. Limitations concern the application of some phases of the methodology to a single case study, without testing the complete methodology. Future work concerns first the continuous improvement of the framework through applications to case studies in different domains of service provision. Besides this issue, future work concerns the development of quantitative methods for the improvement of the evaluation phase of the methodology (namely the quality assessment). In particular, we focus on the issues emerging from the field of IT Business Value and productivity in the information systems research area (Melville, Kraemer et al., 2004), and on the widening of the formal definition of concepts involved in service value configuration.

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