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Deliverable abstract

The purpose of this deliverable is to present the business rationale of the OASIS platform. To achieve this purpose, this deliverable underlines the business context of all pilot sites involved in the OASIS project and based on this analysis highlights the opportunities for improvement. In sequence an analysis of the OASIS business model stresses how the identified improvements can be achieved by enabling the OASIS platform as a coordinator between the private service providers and the public authorities. The findings of this analysis exemplify how OASIS platform envisions enhancing financial and business improvements for the public agencies by using federated services and a different business approach that separates public data from the processing (and re-use).

Project Management Review

Reviewer 1: WP leader				Reviewer 2: Coordinator B. Thuillier		
	Answer	Comments	Type*	Answer	Comments	Type*
1. Is the deliverable in accordance with						
(i) the Description of Work and the objectives of the project?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> M <input type="checkbox"/> m <input type="checkbox"/> a	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> M <input type="checkbox"/> m <input type="checkbox"/> a
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* Type of comments: M = Major comment; m = minor comment; a = advice

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1. Introduction

This deliverable is the result of Task 3.1 Business problem identification of Workpackage 3 and aims at presenting the business case for the OASIS platform. The research within this task includes performing an overall analysis discerning the main aspects of the business environment of the pilot sites with particular focus on the provision of web-based services.

For the purposes of this deliverable, the concept of 'business model' was used as a vehicle to analyse and to represent the business environments of the pilot public agencies. A state of the art analysis on business models in the literature in the contexts of e-business, e-commerce and e-government is initially performed. Based on this analysis we select the main perspectives and elements of a business model to be used for the representation of the business cases. Building upon these elements, this deliverable presents a twofold presentation for each pilot site: an e-business oriented and an e-government oriented analysis. The e-business oriented presentation focuses on the value offered to the business' customers, the actors and resources involved and the associated revenue/cost structures. The e-government oriented analysis explores the organizations involved in the public service provision, the tangible and intangible offerings, the coordination activities, the underlying business processes and the resources involved.

Using the depicted models of the pilot site business contexts, we identify deficiencies and opportunities for improvement; in particular we have highlighted an absence of linkage between the revenues and costs of the provided e-services, the presence of multiple contracts with private service providers and the existence of slow and bureaucratic procedures to establish a new e-service, fragmentation of resources and financial loss by not creating economies of scale.

In sequence, the vision of the business model for the OASIS platform is presented using both perspectives: the e-business and the e-government. We demonstrate multiple scenarios and their business models to investigate potential variations that can be realised by the pilot sites during the project and after its termination. The analysis finally demonstrates how OASIS platform can resolve or improve the identified areas.

Finally, following the analysis of the existing and OASIS business cases the deliverable includes a first analysis of the cost modelling and revenue modelling elements. Two main modes are examined; namely the general licensing mode and the SaaS mode. The cost and revenue modelling estimations imply that SaaS mode can result in significant savings at the service provider side and at the government side as the number of enrolled public bodies is increasing. These savings will be translated to the revenue stream creating a business scenario that will allow the consortium to identify the most suitable model for the commercialization of the results of the project.

2. State of the Art

2.1. Defining Business Models

The 'business model' term appears controversially in the literature. Breaking down the term into the 'business' and 'model' components helps us create an understanding of business models concept:

- Business: a particular organization engaged in the trade of goods, services, or both to consumers or generally the activity of buying and selling goods and services.
- Model: a representation of an object usually on a smaller scale or a simplified representation/description of a complex entity.

In this section we present the most widely accepted and used definitions of business models. The variant definitions emphasize either the revenue/product aspects, the business actors and network aspects or the marketing specific aspects (*Osterwalder and Pigneur, 2002*).

Amit and Zott (2001) argue that a business model depicts the content (goods/services, resources/capabilities), structure (parties involved; linkages; sequencing; exchange mechanisms), and governance of transactions (flow control) designed as to create value through the exploitation of business opportunities. *Margetta (2002)* states that a business model tells a story explaining who the customers are, what do the customers value and how the business can make money providing that value. At the same time a business model should explain the underlying economic logic of how the business delivers value to the customers at an appropriate cost and how the business is profiting from the specified activities. A simpler definition of business model as a method by which an enterprise builds and uses its resources is given by *Afuah and Tucci (2001)*. *Timmers (1999)* defined a business model as the architecture for product, service and information flows, including a description of the various business actors and their roles, the sources of revenues, and the potential benefits for the various business actors. Similarly, *Weill and Vitale (2001)* define a business model as a description of the roles and relationships among a firm's consumers, customers, allies, and suppliers that identifies the major flows of product, information, and money, and the major benefits to participants.

According to *Elliot (2002)*, a business model specifies the relationships between different participants in a commercial venture, the benefits and costs to each and the flows of revenue. The purpose of a business model is to address the relationship between profits, revenues and costs. *Petrovic et al. (2001)* perceives business models as the logic of a business system for creating value. *Hawkins (2001)* describes a business model as the commercial relationship between a business enterprise and the products and/or services it provides in the market. He explains that it is a way of structuring various cost and revenue streams such that a business becomes viable, usually in the sense of being able to sustain itself on the basis of income it generates. *Rappa (2001)* defines it as the method of doing business by which a company can sustain itself; i.e. generate revenue. *Shafer et al. (2005)* conduct an exhaustive review of business models definitions and define business models as a representation of a firm's underlying core logic and strategic choices for creating and capturing value within a value network. *Keen and Qureshi (2006)* argue that the logic of value-generation is the core of a business model and regard two themes in the conceptualization of business models: (1) focus on value, and (2) the basic logic of the business. They assert that business models are a vehicle for addressing how to balance value between the customer and the provider. *Osterwalder et al. (2005)* define business models as a conceptual tool that contains a set of elements and their relationships and allows expressing the business logic of a specific firm. It is a description of the value that a company offers to one or several segments of customers and of the architecture of the firm and its network of partners for creating marketing, and delivering this value and relationship capital, to generate profitable and sustainable revenue streams.

Osterwalder (2004) summarizes the objectives of a business model into the following:

1. To contribute in capturing, visualizing and better understanding of the business logic of an enterprise
2. To improve measuring, observing and comparing the business logic of a company
3. To improve the alignment of strategy, business organization and technology
4. To help foster innovation and increase readiness for the future through business model portfolios and simulation
5. To assist on patenting e-business processes or even entire aspects of the business.

2.2. Business Model Components

Deriving from the diversity of definitions, a controversy also appears on the building blocks that comprise a business model.

Hedman and Kalling (2003) suggest that a generic business model includes the following causally related components: (1) customers, (2) competitors (3) offering, (4) activities and organisation, (5) resources, (6) supply of factor and production inputs, and (7) Longitudinal characteristics such as constraints on actors, cognitive and social limitations. *Mahadevan (2000)* indicates that a business model consists of a configuration of three streams: (1) the value stream, which identifies the value proposition for the business partners and the buyers, (2) the revenue stream, which is a plan for assuring revenue generation for the business, and (3) the logistical stream, which addresses various issues related to the design of the supply chain for the business.

Shafer et al. (2005) suggest that a business model consists of the following groups of components:

1. Strategic choices: customer target, value proposition, capabilities/competencies, revenue/pricing, competitors, offering, branding, mission, etc.
2. Create value: resources/assets, processes/activities.
3. Value network: suppliers, customer information and relationship, information flows, product/service flows.
4. Capture value: cost, financial aspects, profit.

Recent literature seems to converge on the components that construct a business model. *Chesbrough and Rosenbloom (2002)* state that a business model is composed of 1) value proposition (i.e., the value created for users by the offering based on the technology), 2) market segment (i.e., the users to whom the technology is useful and for what purpose), 3) value chain structure (within the firm required to create and distribute the offering), 4) cost structure and profit potential (of producing the offering, given the value proposition and value chain structure chosen), 5) value network positioning (i.e. the position of the firm within the value network linking suppliers and customers including identification of those with whom the firm will potentially complement or compete), 6) competitive strategy (by which the innovating firm will gain and hold advantage over rivals). Drawing upon the work of *Osterwalder (2004)*, the VIVACE project features the following elements of a business model (*VIVACE, 2006*):

- The **value proposition** of what is offered to the market
- The **target customer** segments addressed by the value proposition
- The communication and **distribution channels** to reach customers and offer the value proposition
- The **relationships** established with customers
- The **core capabilities** required by the enterprise
- The **configuration of activities** to implement the business model;
- The **partners** and their motivations for joining the enterprise

- The **revenue streams** generated by the business model
- The **cost structure** resulting from the business model

Osterwalder (2004) and Osterwalder and Pigneur (2004), suggest a widely cited ontology for developing business models that organises the business model elements into the following four pillars further explained in [Table 1](#) and [Figure 1](#):

1. **Product**: What business the company is in, the products and the value propositions offered to the market.
2. **Customer Interface**: Who the company's target customers are, how it delivers them products and services, and how it builds strong relationships with them.
3. **Infrastructure Management**: How the company efficiently performs infrastructural or logistical issues, with whom, and as what kind of network enterprise.
4. **Financial Aspects**: What is the revenue model, the cost structure and the business model's sustainability?

Pillar	Building Block	Description
Product	Value Proposition	A Value Proposition is an overall view of a company's bundle of products and services that are of value to the customer.
Customer Interface	Target Customer	The Target Customer is a segment of customers a company wants to offer value to.
	Distribution Channel	A Distribution Channel is a means of getting in touch with the customer.
	Relationship	The Relationship describes the kind of link a company establishes between itself and the customer.
Infrastructure Management	Value Configuration	The Value Configuration describes the arrangement of activities and resources that are necessary to create value for the customer.
	Capability	A capability is the ability to execute a repeatable pattern of actions that is necessary in order to create value for the customer.
	Partnership	A Partnership is a voluntarily initiated cooperative agreement between two or more companies in order to create value for the customer.
Financial Aspects	Cost Structure	The Cost Structure is the representation in money of all the means employed in the business model.
	Revenue Model	The Revenue Model describes the way a company makes money through a variety of revenue flows.

Table 1: The 4 Pillars and 9 Building Blocks of Business Models (*Osterwalder, 2004*)

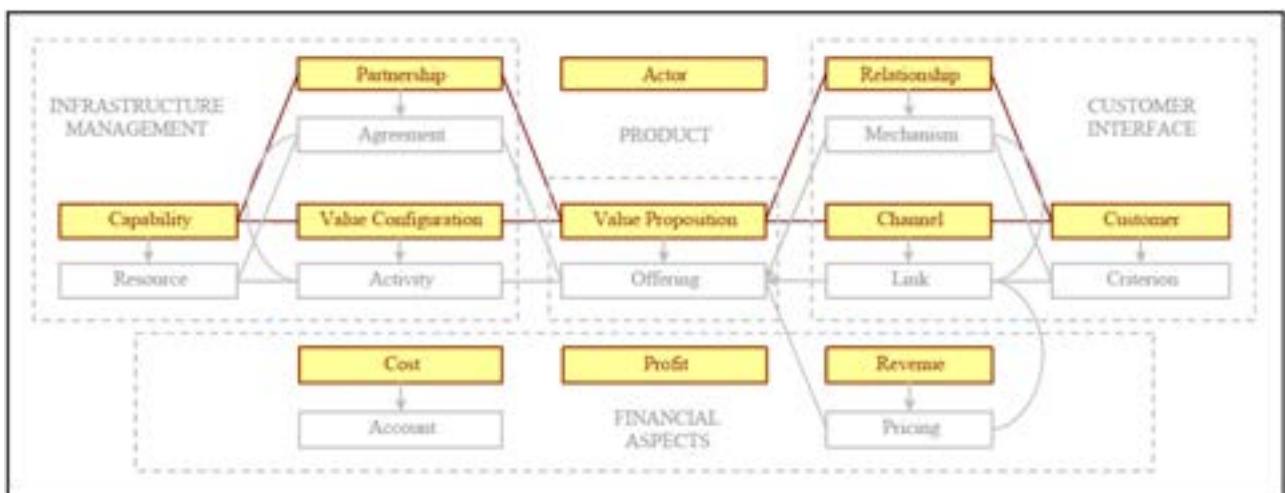


Figure 1: The business model ontology (*Osterwalder, 2004*)

Recently, *Al-Debei and Avison (2010)* have developed a unified framework for the business model concept, taking into account the related literature on the various contexts in which the business

model concept applies, including e-commerce, e-business and e-government. *Al-Debei and Avison (2010)* recognise four elements of business models, as depicted in [Figure 2](#).

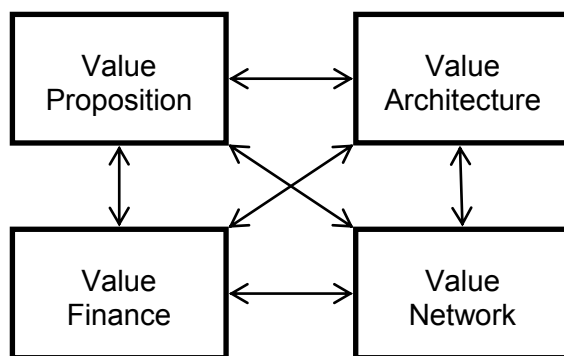


Figure 2: The Business Model Dimensions (Al-Debei and Avison, 2010)

Dimension	Description	Elements
Value Proposition	An overall view of a company's bundle of products and services that are of value to the customer	Product and/or service
		Intended value element
		Target segment
Value Architecture	Technological Architecture and Organizational Infrastructure	Core resources
		Core competence
		Value configuration
Value Network	Business and Customer Actors Web	Actors
		Role
		Relationship
		Flow communication
		Channel
		Governance
		Network mode
Value Finance	Financial Setups and Returns	Costing
		Pricing methods
		Revenue structure

Table 2: The Business Model Elements (Al-Debei and Avison, 2010; Osterwalder, 2004)

2.3. E-Government Business Models

Although the concept of business models has been widely used it is relatively unexplored in the context of e-government (*Janssen and Kuk, 2007; Janssen et al., 2008*). Nonetheless, it is argued that e-commerce and e-business business models are inappropriate for the e-government context because they often focus on maximizing revenue and profit and outweighing competitors, whereas the primary interests of governments are in gaining more efficiency, enhancing the existing public services and developing new ones and empowering citizens (*Janssen and Kuk, 2007; Lee and Hong, 2002*). Another reason is that public networks are quite different from individual organizational hierarchies; service provisioning in the context of e-government typically requires collaboration among a range of actors across different agencies. Finally, government agencies are inherent monopolies, while enterprises function in a competitive and free context.

Very little is known in the e-government field about the components of a business model, the intermediate variables and processes that translate an e-government business model into new

service offerings (*Janssen and Kuk, 2007*). *Janssen and Kuk, 2007* identify six key components of a business model in public service networks: (1) organizations in the public service network, (2) service offerings, (3) network coordination, (4) business processes, (5) shared resources and (6) network capabilities. Based on their empirical investigation, they present three e-government business models:

1. **The Portal Model:** A joint portal provides integrated and for more customer-oriented services. The portal provides a virtual business counter by offering access to an integrated set of services provided by multiple agencies. The service offering is that customers can find all the public services in one place, without having to deal with multiple agencies.
2. **The Orchestration Model:** A process orchestrator coordinates a chain of activities, which involves coordination across various departments. The orchestration model changes the business from sequential to parallel coordination of activities, leading to reduction of time and wastage.
3. **The Shared Services Model:** Instead of each public agency having its own IT department the shared service model enables agencies to centralise, share and reuse each other's resources, such as IT skills and competencies.
- 4.

Janssen et al. (2008) describe eight e-government Web-based business models:

1. **Content Provider:** provision of static and dynamic content including information on products, and services focusing upon the core-business. This content is coming from a single organization and can be customized to match customers' needs.
2. **Direct-to-Customer:** direct service provisions to customers and businesses focusing upon the traditional functions, services, and products of the organization.
3. **Value-net-integrators:** coordination of the collection, processing, and distribution of information from several organizations, such a one-stop shop to a certain customer segment. This model coordinates the services provision of other organizations and does not provide any services directly.
4. **Full-service provider:** collaboration among a number of organizations to provide a one-stop shop. The customers do not directly deal with individual organizations and the identities of the organizations are often hidden and play no major role.
5. **Infrastructure service provider:** provision of infrastructure services to support the creation of Web sites. Often the infrastructure provider is founded when many organizations discover that they are developing a similar set of functionalities and decide to concentrate the development and service provisioning in one organization.
6. **Market:** This model brings together supply and demand using market mechanisms. The governmental organization intermediates between many providing and requesting organizations.
7. **Collaboration:** facilitation of electronic participation and discussion among citizens, business, and public administration for activities including policy-making projects and decision-making.
8. **Virtual communities:** This model concerns the creation of a community which is centred on a certain topic or a group of recurring customers.

2.4. The Business Model Framework for OASIS

State of the art analysis demonstrates that although the business model concept is mature for the e-commerce and e-business context, it should be differentiated for the e-government context. For the purposes of building the OASIS business case, we will adopt the ontology structure of *Al-Debei and Avison (2010)* and also the framework of *Janssen and Kuk (2007)*. **The reason is that we aim at focusing on both the efficiency value proposition of governmental agencies models, but also in demonstrating deficiencies of current public electronic services' configuration and how OASIS provides the opportunity to public agencies to become competitive and**

profitable using cloud computing as a vehicle. Hence, we will analyse the five pilot sites' current and future business models using two frameworks.

2.4.1. The e-business perspective

Value Proposition: We will describe the business logic of creating value for customers and/or each party involves through offering the e-services and how this satisfies the customer target segments.

- Product/Services that the pilot public organizations offer
- Intended value elements that are incorporated in the offering of products/services
- Target market segment along with their preferences

Value Architecture: We will describe the architecture of the pilot sites organizations including technological and organizational infrastructure and their configuration which allows the provisioning of the products/services in addition to information flows.

- ICT and other resources necessary to provide the products/services
- The resources' configuration that should allow creating the value elements in higher quality and lower cost
- Core competences that result from the resources' management

Value Network: We will present the way that the pilot organizations enable transactions through coordination and collaboration among parties and multiple companies.

- Actors and Role including any stakeholder (suppliers, distributors, marketers, partners, etc.) that participates to the value creation
- Relationships among the actors involved
- How the value is exchanged among the actors and communicated via channels
- Governance explaining which actor is governing or being dominant of the network
- Network mode which can be either open value network in the sense that any stakeholder can suggest and provide ideas or closed value network in the sense that ideas can only come from selected actors

Value Finance: We will describe the way in which the public organizations manage costing, pricing and revenue breakdown to sustain and improve profit.

- Costing including all costs related to the provision of the products/services
- Pricing methods for providing the product/service to the target market segment
- Revenue structure that enables the organizations to translate the offering value into money and generate revenue streams.

2.4.2. The e-government perspective

In this view the business model of web-based services of a public organization is comprised by a distinct set of **business processes** that are vehicle for creating the service, **resources** that are consumed in the execution of the business processes, dynamic **capabilities**, **coordination** of capabilities and resources that is necessary for **offering** the service and deploying IT resources in an efficient and effective way.

Organizations in the public service network: We will describe the organizations that need to collaborate for the provision of the e-services.

Service offerings: We will present the services that are provided by the processing of data and the e-service.

Network coordination: In this element we will include the managerial and organizational structures that are necessary for the coordination and facing of problems caused by the division of tasks and labour.

Business processes: We will describe the business processes that define the information and activities flows involved in the e-services provision.

Shared resources: We will present the role of all resources, including IT resources and human resources for supporting the business processes underlying the e-services.

Network capabilities: In this element we will describe the use of ICT for better reuse of existing knowledge and expertise through building interfaces among management, operation and the design and development of infrastructures.

3. Current e-Government Business Models in Pilot Sites

3.1. Department of Drôme – France

In this sub-section we present the existing business model of the Drôme department for web-based e-government services using the two mentioned frameworks: the e-business and the e-government perspective.

3.1.1. The e-business perspective

Value Proposition:

- **Product/Services:** The e-services provided are informational (provision of static and dynamic content) and transactional (provision of functionalities that relate to the agencies' core functions).
- **Intended value element:** The offered value by the electronic services is mostly intangible; citizens have easier, faster and undisrupted access to public information, they do not need to physically interact with the agency and the public services are provided to them 24/7.
- **Target Market Segment:** The target market of the web-based services of public agencies in France is in general the citizens and businesses. Specifically per service that is developed and deployed in OASIS: Ushahidi targets citizens that are confronted with a physical threat or related incident, Opendata targets citizens and businesses that can benefit from opening public data in a standard format, OpenMairie targets public administrations for managing internal business processes and Capdemat targets to citizens that request a basic public service.

Value Architecture:

- **Core resources:** The resources for the provision of the e-services mainly include ICT infrastructure (e.g. servers, network infrastructure), data (e.g. public information, citizens' data), physical infrastructure (e.g. computer rooms) and personnel (e.g. IT personnel, developers).
- **Value configuration:** The private service provider of each e-service is responsible for the development of the e-service, the data hosting, the service hosting, the technical management, and the maintenance. Drôme department does not own the resources; instead the department outsources their provision. Usually each e-service is provided by a different private service provider which means that multiple instances of each resource are present not used to their maximum capacity.
- **Core competence:** The provision of the e-services is not a core competence of the Drôme department.

Value Network:

- **Actors:** The public agency collaborates with multiple private service providers for the provision of the e-services (outsourcing). The agency also collaborates with central government who provides the legislative framework in which the agency operates and with other public agencies for the coordination of information and services.
- **Role:** Each private service provider is responsible for the creation of the e-service that is associated with him and remains responsible for the provision of this e-service.
- **Relationship:** Drôme department holds a contract or Service Level Agreement (SLA) with the private service providers. The department may have as many private service providers/SLAs as the number of e-services.
- **Channel:** Each e-service usually functions individually, not through a platform or portal.
- **Governance:** The Drôme department governs the relationship with all partners for the e-services. The department is the actor deciding if a new e-service will be added or an existent e-service would be changed or terminated.
- **Network mode:** This is closed value network in the sense that the public agency is always the one initiating the development of a new e-service, based on the identification of needs.

Value Finance:

- **Costing:** Costing for the provision of the e-services involves technical management costs and maintenance costs. The above costs are defined in the SLA and determined usually after a competition among the private service providers according to a public procurement legislation; commonly the public agency undergoes an open contest process in which a call for tenders is published by the public agency, then applicants submit their offers and a selection is made by the agency based on a series of criteria.
- **Pricing methods:** The pricing of the provided service is decided by the government and the public agency. The e-services currently are provided to the end-users without any price in exchange.
- **Revenue structure:** As all public agencies the revenue model of Drôme department is the collection of **taxes**. Moreover, indirect revenues derive from savings due to the presence of e-services, such as fewer employees are required for interacting with the citizens. Similarly to the offered value, the profit from the e-services is mainly intangible, including the empowerment of citizens and their increased participation to the public affairs.

As depicted in ~~Figure 3~~ **Figure 3** the public agency aims to provide a value to its customers (mainly citizens and businesses) through the provision of e-services. To do so, variant resources are managed, which however are mostly outsourced because information technology is not a core competence of the agencies. The resources for the e-services' provision are requested by one or many private service providers. Regarding the financial view, currently there is no income to the public agency from the provision of the e-service although there is an involved cost for the resources and their management (hosting, maintenance, technical management). The public agency usually undertakes this cost indirectly as part of the contract with the service provider.

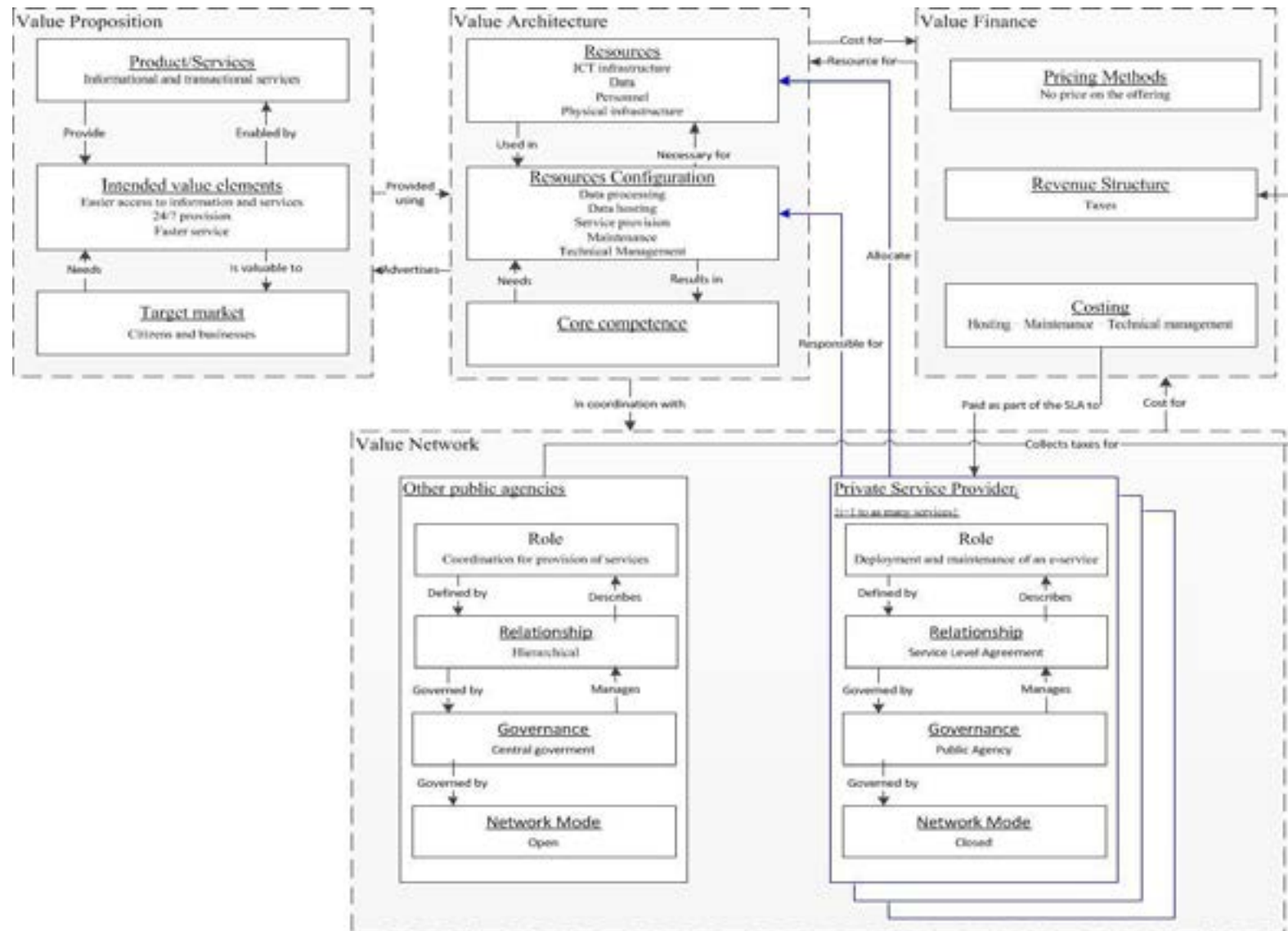


Figure 3: Drôme Department business model (e-business perspective)

3.1.1. The e-government perspective

In France today public agencies identify the need or value of offering an e-service to citizens and business or other public agencies and in sequence publish a public tender for proposals by private service providers. The same process is followed for the renewal of software. The e-services are afterwards provided locally (not centrally). A public agency may hold as many contracts (usually lasting 3 years) with private providers as the number of e-services that offers. For the selected e-services there are no development costs (open-source software) and the private providers are paid by the agency for installing and setting the software, license fees (if any), providing hosting and onsite maintenance services.

Organizations in the public service network: Currently public administrations in France work isolated from each other for the provision of e-services. Each public agency manages a relationship with one (or many) private service providers for the provision of e-services. Commonly for each e-service a public agency initiates and manages a new relationship and administration process.

Service offerings: The e-services provide informational and transactional services. The end-users have easier, faster and undisrupted access to public information, they do not need to physically interact with the department and the public services are provided to them 24/7.

Network coordination: Due to the absence of coordination with other public agencies or a central governmental gateway for the provision of the e-services, this element reflects only managerial and organizational structures that coordinate the division of tasks for the provision of the e-services and coordinate the allocation of tasks to the private service provider(s). Coordination is necessary among the legal process of the public tender, the internal IT department (if any), and the private service provider(s) to ensure the compliance to the contract.

Business processes: Starting from the public tender conduction, the process of publishing the call for tenders and selecting the private service provider is common to all e-services. For example, the business processes underlying Ushahidi refer to the procedures for citizens to report different types of incidents (e.g. burned out bulb, damaged garbage, dead animal on public roads, cumbersome to remove) and for public officers to respond to these reports. The information flow starts from the citizen using multiple data streams and a map-based interface. The technical departments receive this information and plan their operations. Opendata business processes include the determination of data that can become openly available and the uploading of the data sets. For the cold data the processes also include updating the data sets when needed. For the hot data the software is processing the provision of real time information (such as traffic information).

Shared resources: The resources for completing the business processes underlying the e-services include the legal experts, the IT personnel and the public officers involved in each service. They also include ICT infrastructure, data, and physical infrastructure. Currently the public agency manages the legal experts, the public officers, and the data. The private service provider is responsible for the IT infrastructure and personnel. In some cases, some IT personnel and infrastructure from the public agency is also involved.

Network capabilities: This element includes the back-office interfaces of the e-services that enable the department for example to upload information (i.e. in OpenData) or to collectively manage citizens reports (i.e. Ushahidi).

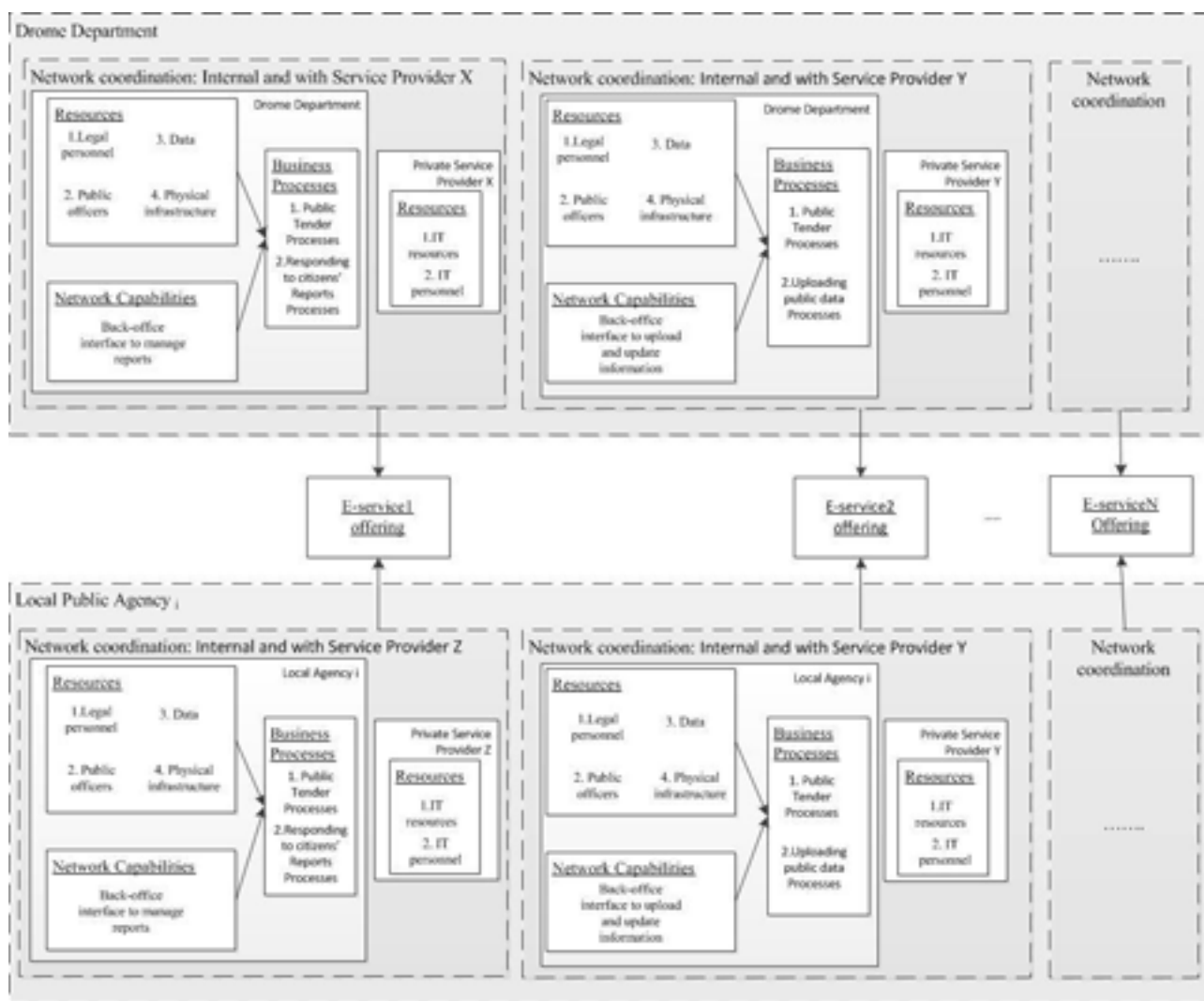


Figure 4: Drôme Department business model (e-government perspective)

As depicted in [Figure 4](#) the common situation today in France is that public agencies and Departments collaborate with multiple private service providers for multiple e-services. In this business model there are repetitions and duplications of tasks. In particular, the selection of service provider and establishment of contract (along with the associated resources) is repeated potentially as many times as the e-services in question. The public agency needs to administrate the multiple relationships and monitor the multiple contracts. Additionally, in the case that a specific e-service is designed (for example a public documents archiving service) and requested by more than one public agencies, we may confront the case in which the public administration establishes two (or more) contracts with the same service provider for the provision of the same e-service losing the opportunity to benefit from economies of scale.

3.2. Stara Zagora Regional Economic Development Agency - Bulgaria

Today, the service of Joomla is provided by the Stara Zagora Regional Economic Development Agency in Bulgaria. In this sub-section we will present the existing business model of the Development Agency web-based e-government services using the two mentioned frameworks.

3.2.1. The e-business perspective

The business model adopted by the Stara Zagora Regional Economic Development Agency is very similar to the business model of Drome department. Hence we will use the business model as a reference and highlight the differences between them.

Value Proposition:

- **Product/Services:** The e-services are mainly informational.
- **Intended value element:** The offered value by the electronic services is mostly intangible; citizens have easier, faster and undisrupted access to public information, they do not need to physically interact with the agency and the public services are provided to them 24/7.
- **Target Market Segment:** The e-service is used by citizens and businesses; specifically 54% businesses and 36% citizens. The target market of the e-service is individuals or businesses that are interested in tourism information about a location.

Value Architecture:

- **Core resources:** Resources include ICT infrastructure, data, physical infrastructure and personnel.
- **Value configuration:** A private service provider is responsible for the customisation of the e-service which is an open source solution, the data hosting, the service hosting, the technical management, and the maintenance. The Agency outsources the provision of resources and their configuration.
- **Core competence:** The provision of the e-service is not a core competence.

Value Network:

- **Actors:** The actors involved are a private service provider, central government and other public agencies.
- **Role and Relationship:** A Service Level Agreement (SLA) defines the relationship and responsibilities.
- **Channel:** The e-service functions individually, not through a platform or portal.
- **Governance:** The Stara Zagora Regional Economic Development Agency governs the relationships with the other actors regarding the e-services.
- **Network Mode:** The network operates in closed value mode.

Value Finance:

- **Costing:** Costing for the provision of the e-service involved software development costs, technical management costs and maintenance costs. The above costs are defined in the SLA and determined usually after a competition among the private service providers according to a public procurement legislation; commonly the public agency undergoes an open contest process in which a call for tenders is published by the public agency, then applicants submit their offers and a selection is made by the agency based on a series of criteria. According to the current legal framework for public procurement the following limits apply: for procurements bellow 7.5 thousand euros it is possible to make direct contract with the service provider, bellow 25 thousand euros the agency needs public announcement for request for proposals and at least 3 offers for the task, and above 25 thousand euros a public tender should be held.
- **Pricing methods:** The e-service is given for no price.
- **Revenue Structure:** The revenue model is based on collection of **taxes**.

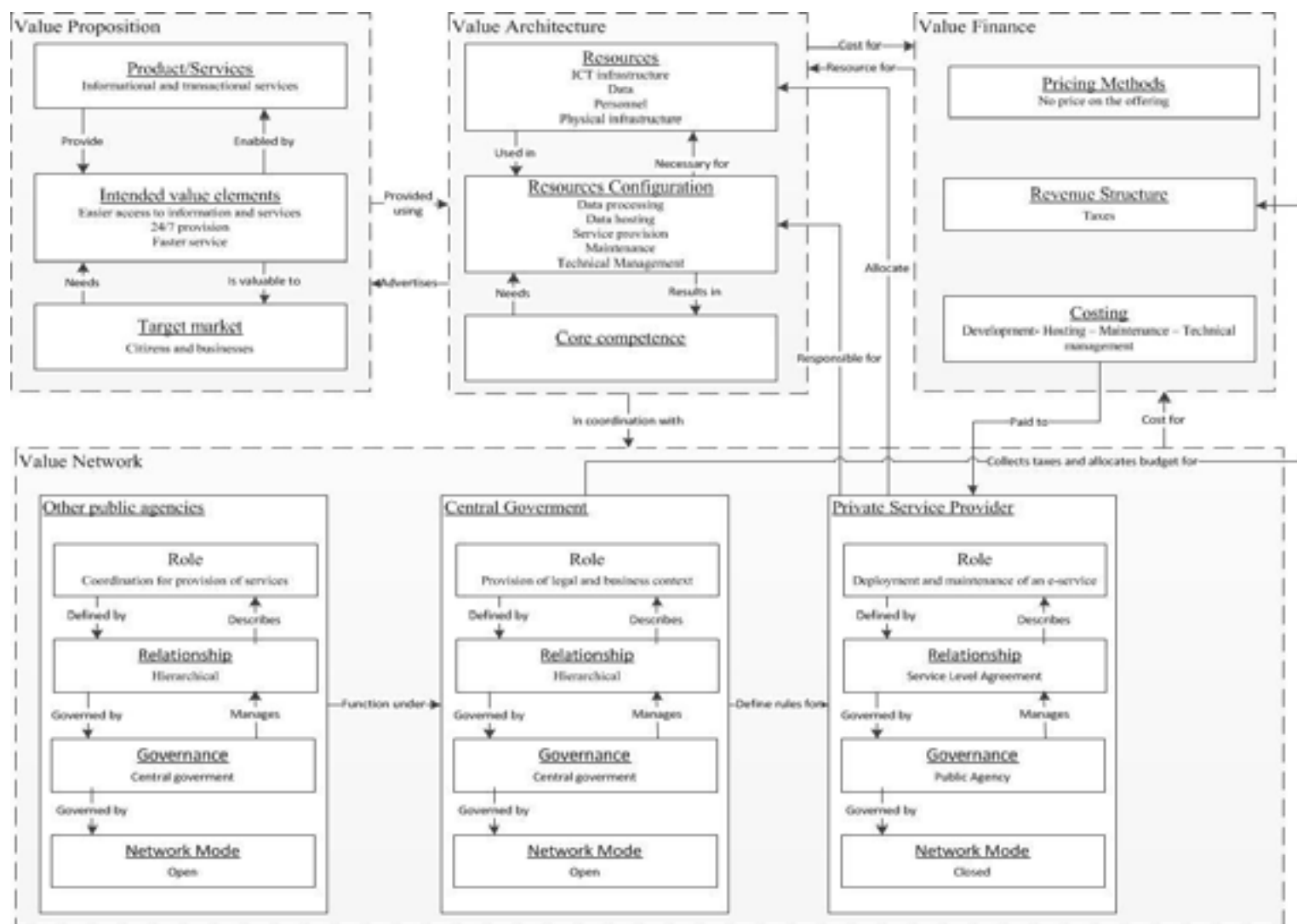


Figure 5: Stara Zagora Regional Economic Development Agency business model (e-business perspective)

3.2.2. The e-government perspective

The Joomla e-service is operating under a simple business model that is very similar to the one of Drôme Department. As in France, in Bulgaria public agencies identify the need or value of offering an e-service and in sequence publish a public tender for proposals by private service providers. The same process is followed for the renewal of software. The e-services are afterwards provided locally (not centrally). A public agency may hold as many contracts with private providers as the number of e-services that offers. The involved costs include development costs, installation costs, license fees (if any), hosting and onsite maintenance costs.

Organizations in the public service network: Public administrations in Bulgaria work isolated from each other for the provision of e-services.

Service offerings: The e-service under provision is Joomla that offers map-based touristic information to the end-users.

Network coordination: Due to the absence of coordination with other public agencies or a central governmental gateway for the provision of the e-services, this element reflects only managerial and organizational structures that internally coordinate the division of tasks for the provision of the e-services. Coordination is necessary among the legal process of the public tender, the internal IT department (if any), and the collaboration with the private service provider to ensure the compliance to the contract.

Business processes: Similarly to the French business processes, this element includes the public tender conduction processes and the processes of determining the touristic information per touristic site, uploading it and updating it.

Shared resources: The resources include legal experts, IT personnel, public officers and ICT infrastructure, data, and physical infrastructure.

Network capabilities: The back-office interface that enables Stara Zagora Regional Economic Development Agency to upload and update touristic information.

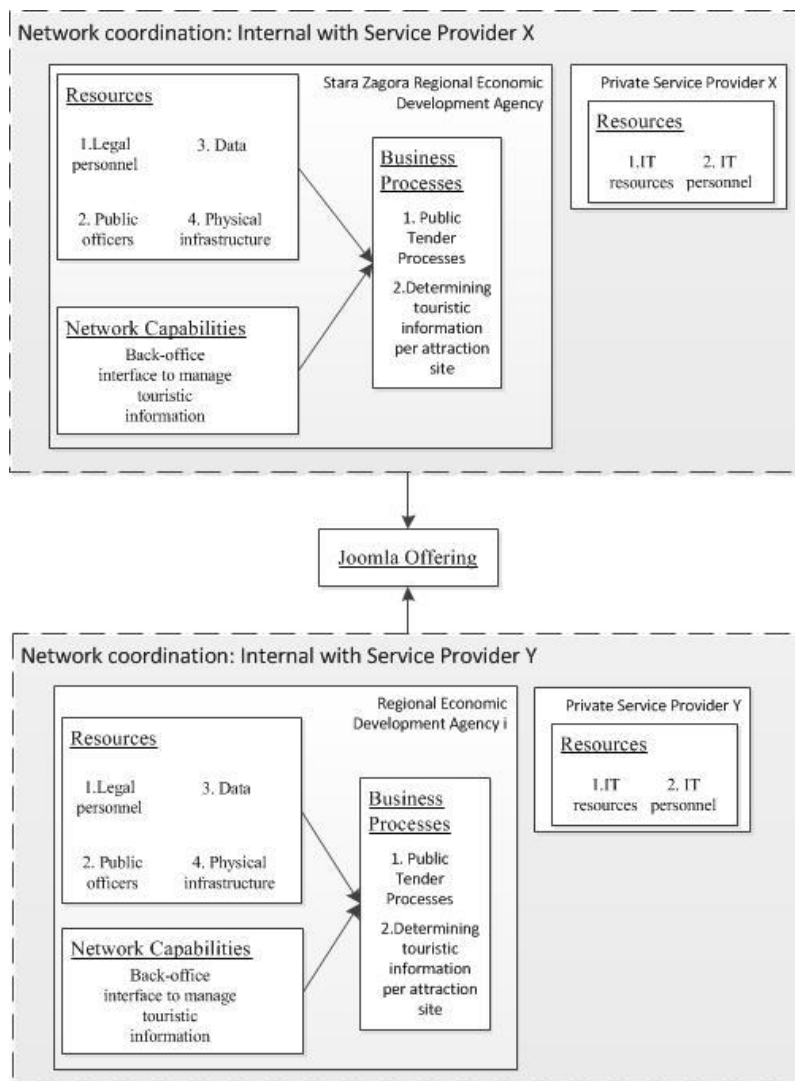


Figure 6: Stara Zagora Regional Economic Development Agency business model (e-government perspective)

3.3. Region of East Marmara – Turkey

The East Marmara Development Agency in Turkey is currently providing two e-services in the context of OASIS project; namely 'Investment Promotion and Business Retention', and 'Data Collection'.

3.3.1. The e-business perspective

Value Proposition:

- **Product and/or service:** The e-services provided are informational and transactional.
- **Intended value element:** The offered value by the electronic services is mostly intangible; end-users have easier, faster and undisrupted access to public information, they do not need to physically interact with the agency and the public services are provided to them 24/7.
- **Target segment:** The target market of the e-services is businesses and public agencies. 'Investment Promotion and Business Retention' e-service targets enterprises and the 'Data collection' e-service targets public central and local authorities.

Value Architecture:

- **Core resources:** The resources for the provision of the e-services mainly include ICT infrastructure, data, physical infrastructure and personnel.

- **Value configuration:** The Development Agency is using own resources for the software development of the e-service and the data and e-service hosting. A private service provider is subcontracted and is responsible in cooperation with the Development Agency for the technical management and the maintenance.
- **Core competence:** The development and provision of e-services is a core competence of the Development Agency. It is necessary for the sustainability of the Agency to make sure that the current configuration of resources (mix in-house and outsourcing) is providing high quality in acceptable costs.

Value Network:

- **Actors:** The Development Agency collaborates with private service providers for the provision of the e-services (outsourcing). The agency also collaborates with central government who provides the legislative framework in which the agency operates and with other public agencies for the coordination of information and services.
- **Role:** The Development Agency is responsible for the development and provision of e-services and the private service providers are responsible for the technical maintenance of them under the coordination of the Agency.
- **Relationship:** This relationship is determined in a Service Level Agreement (SLA). The Agency may have as many private service providers/SLAs as the number of e-services.
- **Channel:** Each e-service is provided individually, not through a platform or portal.
- **Governance:** The Development Agency governs the relationship with the other actors regarding the e-services.
- **Network mode:** This is closed value network in the sense that the Development Agency is always the one triggering the development of a new e-service, based on the identification of needs.

Value Finance:

- **Costing:** Costing for the provision of the e-services involves software development costs, service provision costs, technical management costs and maintenance costs. The software development and provision costs are internal costs to the Development Agency. The remaining costs are defined in the SLA and determined usually after a competition among the private service providers according to public procurement legislation; in Turkey the procurement of Regional Development Agencies is governed by a Government Directive. According to the Directive the Development Agency can procure any product or service below approximately 21 thousand euros without launching a public tender, through collecting price offers from at least 3 suppliers/service providers. The Development Agency can procure any service/product that involves research and development activities by negotiation below 83 thousand euros. On other conditions, procurement should be by non-exclusive competition based tender with a few exceptions. As an example of costing we may note that the design and maintenance of a system for allowing legal entities to write and submit online project proposals for funding cost approximately 12.23 thousand euros to the Turkish government. Another example is the design of the Development Agency's website that cost 3.95 thousand euros.
- **Pricing methods:** The pricing of offering the provided service is decided by the government and the public agency. The e-services currently are provided to the end-users without any price in exchange.
- **Revenue structure:** As all public agencies the revenue model of Development Agency is based on the collection of taxes.

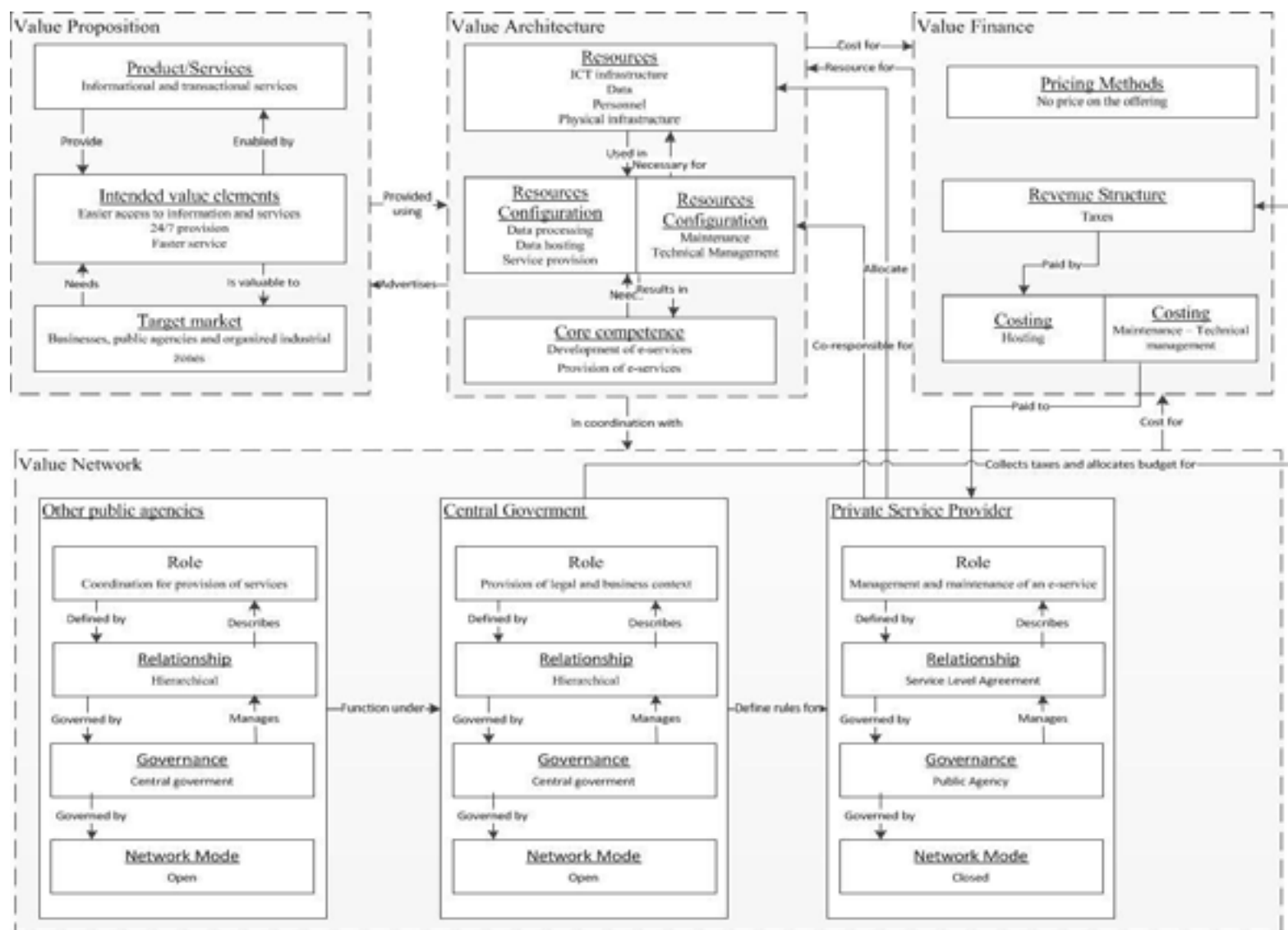


Figure 7: East Marmara Development Agency business model (e-business perspective)

3.3.1. The e-government perspective

The East Marmara Development Agency is currently providing two e-services in the context of OASIS project; namely 'Investment Promotion and Business Retention' and 'Data Collection'. The Development Agency holds a contract with a private service provider and they collaboratively provide the maintenance and technical management of the e-services.

Organizations in the public service network: Although the Ministry of Development has recently initiated a process of developing a central platform with e-services that will be used by all 26 Development Agencies in Turkey, currently each Development Agency is providing the four e-services isolated from each other. For the 'Data Collection' e-service the Regional Development Agency collaborates with all public and local authorities to collect statistical or other public data (such as employment statistics, educational statistics, business statistics, etc.).

Service offerings: The e-services provide informational and transactional services.

Network coordination: Similarly to the previous pilot sites, the coordination currently refers internal synchronisation (for example with the Investment Promotion Office for the e-service 'Investment Promotion and Business Retention') and collaboration with the private service provider(s).

Business processes: The process include the public tender conduction processes for selecting the private service provider and the underlying business processes for each e-service.

Shared resources: The resources for completing the business processes underlying the e-services include the legal experts, the IT personnel and the public officers involved in each service. They also include ICT infrastructure, data, and physical infrastructure.

Network capabilities: This element includes the back-office interfaces of the e-services that enable the Agency to receive proposal forms, process them and publish their evaluation results.

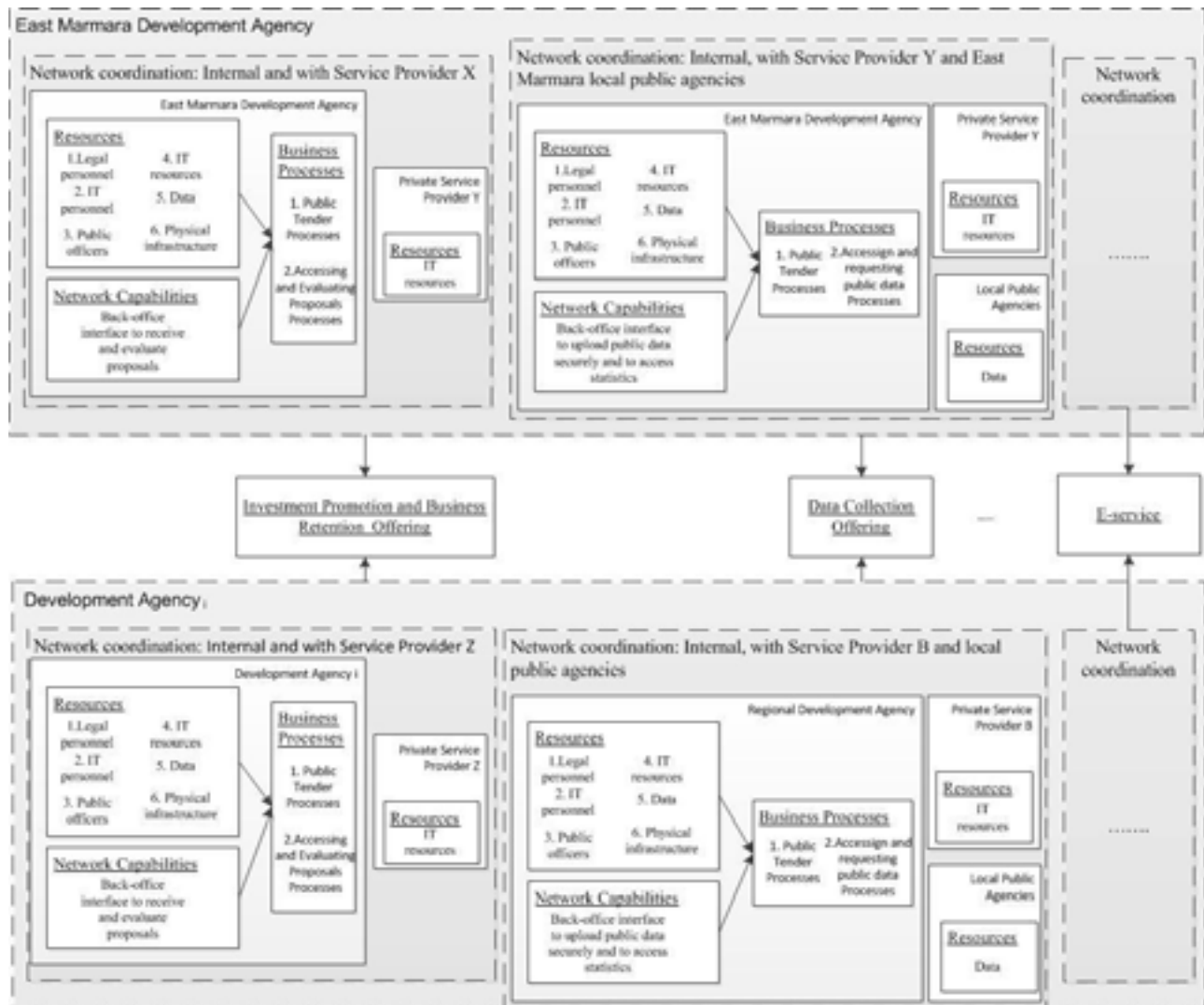


Figure 8: East Marmara Development Agency business model (e-government perspective)

3.4. Province of Torino - Italy

Province of Torino in Italy is currently providing one e-service; namely 'Mapping of territorial economic activities'.

3.4.1. The e-business perspective

Value Proposition:

- **Product and/or service:** The e-service is informational. Specifically, the e-service allows citizens and enterprises to access location-specific information about the economic and productive system in their areas.
- **Intended value element:** The offered value by the electronic services is mostly intangible; end-users can have uninterrupted access to the public data related to the economic activities of an area.
- **Target segment:** The target market of the e-service is citizens, businesses and public agencies.

Value Architecture:

- **Core resources:** Resources include ICT infrastructure, data, physical infrastructure and personnel.
- **Value configuration:** The Province is cooperating with a single private provider who is responsible for the development of the e-services, the data hosting, the e-services' hosting, the technical management, and the maintenance. The Province outsources the provision of resources and their configuration.
- **Core competence:** The provision of the e-services is not a core competence.

Value Network:

- **Actors:** The actors involved are a single private provider (CSI Piemonte), central government and other public agencies.
- **Relationship and Role:** A framework contract for the period 2009-2014 between the Province and the private provider defines the relationship and responsibilities.
- **Channel:** The e-service functions through a central governmental gateway.
- **Governance:** The Province governs the relationships in the network regarding the e-services.
- **Network Mode:** The network operates in closed value mode.

Value Architecture:

- **Core resources:** The resources for the provision of the e-services include ICT infrastructure, data, physical infrastructure and personnel.
- **Value configuration:** The private service provider is responsible for the development of the e-service, the data hosting, the service hosting, the technical management, and the maintenance. The Province outsources the provision of resources and their configuration.
- **Core competence:** The provision of the e-service is not a core competence.

Value Finance:

- **Costing:** Costing for the provision of the e-services involves software development costs, service provision costs, technical management costs and maintenance costs. The hosting and technical management costs are internal costs to the governmental gateway. CSI Piemonte is an in-house partner of Province of Turin for the ICT. The contract between them defines that the Province pays annually to CSI the amount of 9.593.011 euros for all ICT services including hardware and software.
- **Pricing methods:** The pricing of offering the provided service is decided by the government and the Province. The e-services currently are provided to the end-users without any price in exchange.
- **Revenue structure:** As all public agencies the revenue model of the Province is based on the collection of taxes.

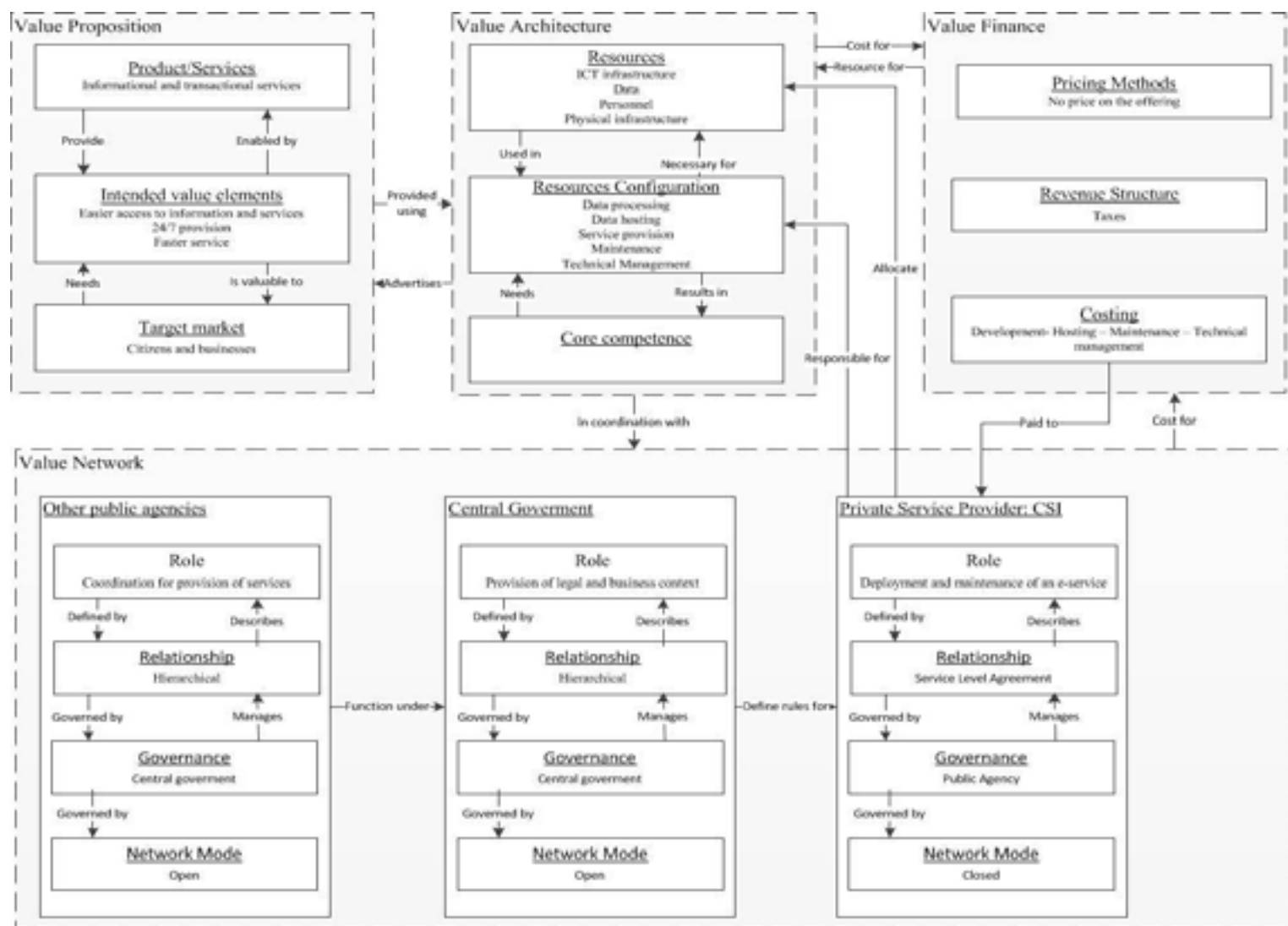


Figure 9: Province de Torino business model (e-business perspective)

3.4.1. The e-government perspective

Province de Torino currently provides one e-service; namely 'Mapping of territorial economic activities'. For its provision, as well as for any other e-service development and provision, Province holds a contract with a private service provider (CSI Piemonte).

Organizations in the public service network: The organizations currently involved in the provision of 'Mapping of territorial economic activities' e-service' are the Province de Torino and the private service partner (CSI Piemonte).

Service offerings: The e-service offers informational services. The e-service allows end-users to have a map-based view of economic and productive activities in a specific area.

Network coordination: Similarly to the previous pilot sites, the coordination currently refers internal synchronisation (between the Register of economic activities, the Employment Services and of the Agriculture Office) and collaboration with the private service provider (CSI Piemonte).

Business processes: The processes include the public tender conduction processes for selecting the private service provider and the business processes for the provision of the 'Mapping of territorial economic activities' e-service, such as the collection of data per geographical area and per economic activity category.

Shared resources: The resources for completing the business processes underlying the e-services include the legal experts, the IT personnel and the public officers involved in each service. They also include ICT infrastructure, data, and physical infrastructure.

Network capabilities: This element includes the back-office interfaces of the e-services that enable the Province to receive publish economic activity information.

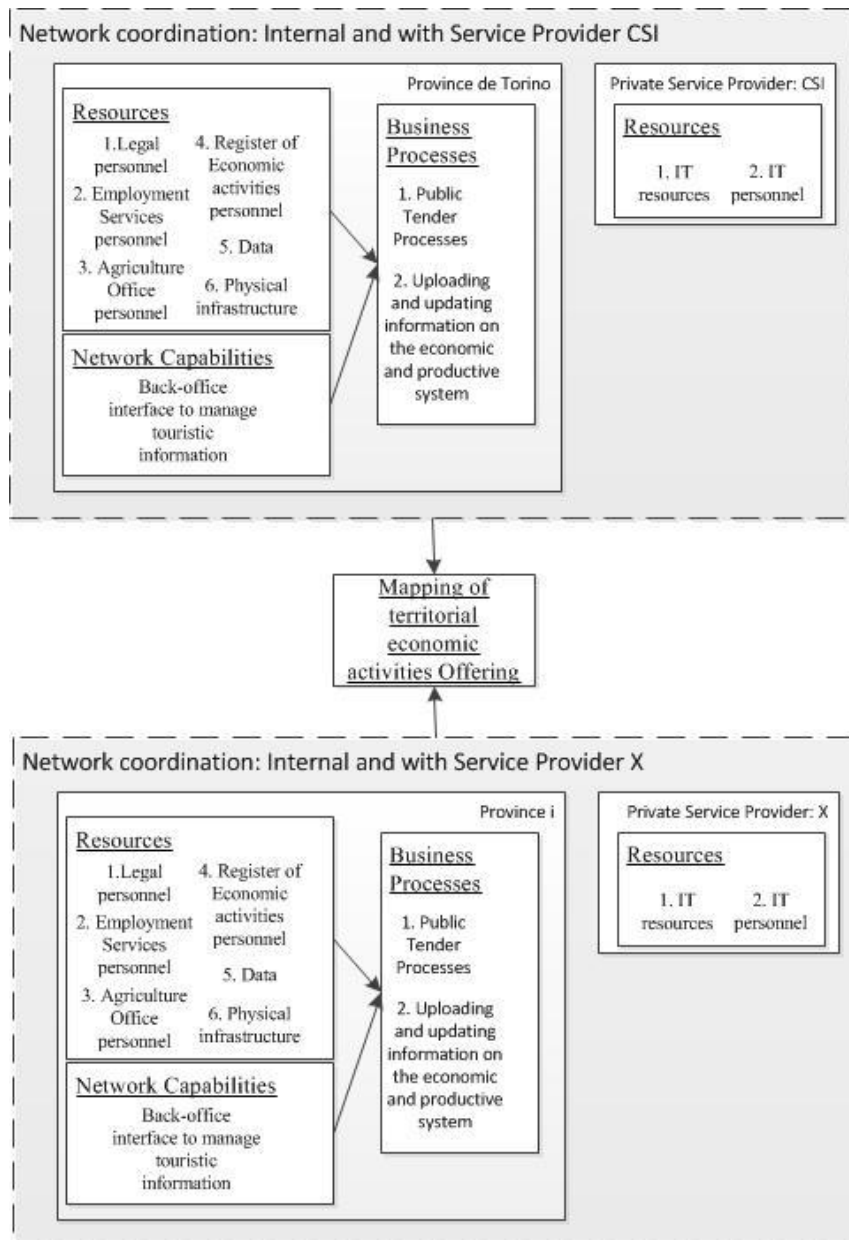


Figure 10: Province de Torino business model (e-government perspective)

3.5. Val de Suze - Italy

Comune di Bussoleno today operates under a very simple business model regarding web-based e-government services. Particularly, only information services are supported by a central gateway which are provided free of charge to the end-users. The e-services are hosted locally at the municipality's computer centre. The municipality undertakes the costs for technical management, maintenance, development. The IT personnel expenditures derive from the Municipality's revenues such as incomes from exploiting natural resources of the area.

3.5.1. The e-business perspective

Value Proposition:

- **Product/Services:** The e-services provided through the central gateway are informational.
- **Intended value element:** The offered value by the electronic services is mostly intangible; citizens have easier, faster and undisrupted 24/7 access to public information, they do not need to physically interact with the agency for information.
- **Target Market Segment:** The target market of the web-based services is citizens and businesses.

Value Architecture:

- **Core resources:** The resources for the provision of the e-services mainly include ICT infrastructure (e.g. servers, network infrastructure), data (e.g. public information), physical infrastructure (e.g. computer rooms) and personnel (e.g. IT personnel, developers).
- **Value configuration:** Comune di Bussoleno is responsible for the development of the e-services, the data hosting, the service hosting, the technical management, and the maintenance.
- **Core competence:** The provision of the e-services currently is a core competence of Comune di Bussoleno.

Value Network:

- **Actors:** The actors involved are the Comune di Bussoleno and the central Italian government. Comune di Bussoleno collaborates with central government who provides the legislative framework in which the agency operates and with other public agencies for the coordination of information and services.
- **Role:** Comune di Bussoleno is responsible for the collection and processing of the public data, as well as the provision of e-services based on them.
- **Relationship:** Since currently the service provision is in-house, there are no external relationships in the network.
- **Channel:** The e-services are provided through a central gateway managed by Comune di Bussoleno.
- **Governance:** Comune di Bussoleno governs all relationship in the sense that decides if a new e-service will be added or an existent e-service would be changed or terminated.
- **Network mode:** This is closed value network in the sense that the public agency is always the one initiating the development of a new e-service, based on the identification of needs.

Value Finance:

- **Costing:** Costing for the provision of the e-services involves development, data and service hosting, technical management and maintenance costs all undertaken by Comune di Bussoleno.
- **Pricing methods:** The pricing of the provided service is decided by the government and the public agency. The e-services currently are provided to the end-users without any price in exchange.
- **Revenue structure:** As all public agencies the revenue model of Comune di Bussoleno is the collection of taxes, fines and exploitation of natural resources. Moreover, indirect revenues derive from savings due to the presence of e-services, such as fewer employees are required for interacting with the citizens. Similarly to the offered value, the profit from

the e-services is mainly intangible, including the empowerment of citizens and their increased participation to the public affairs.

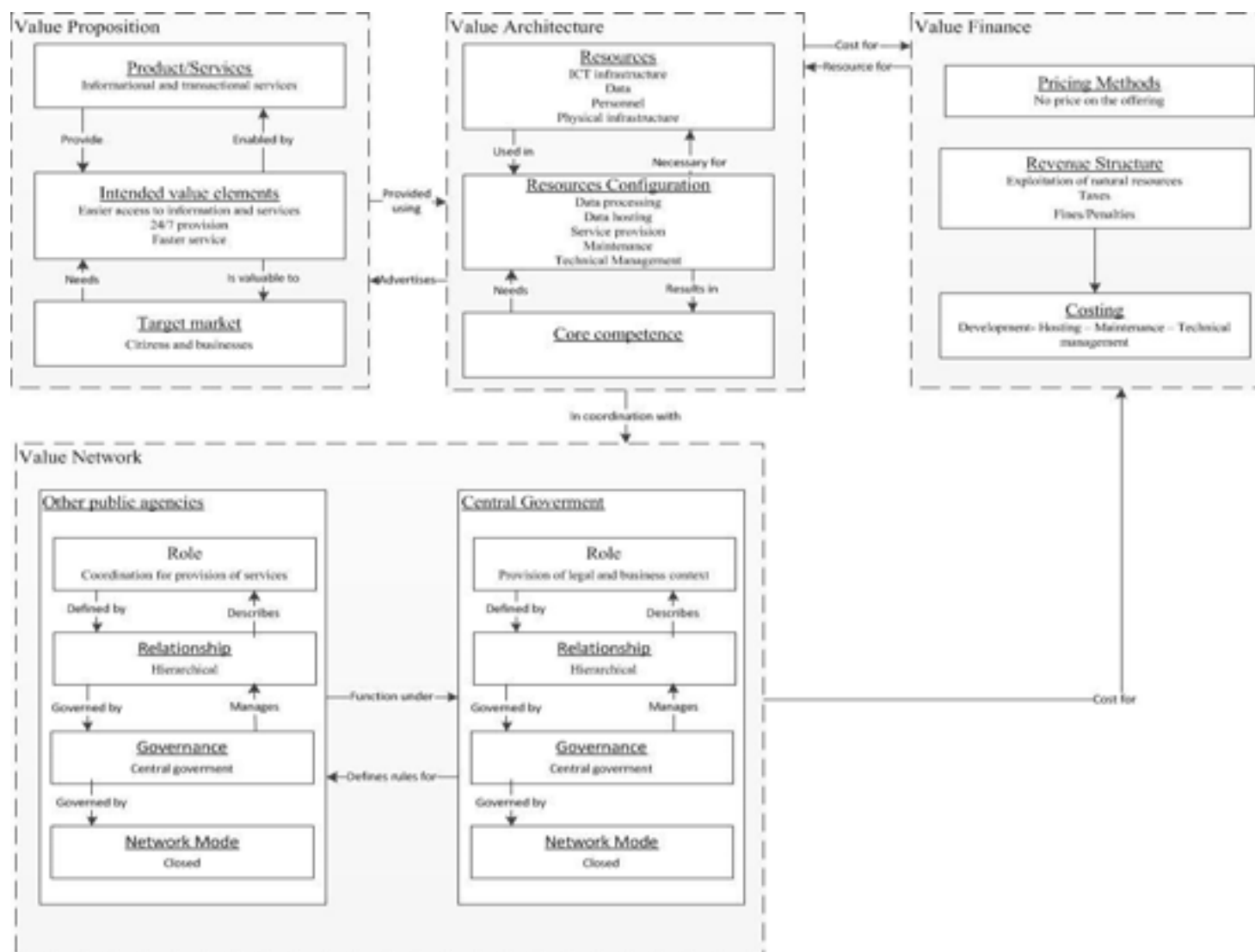


Figure 11: Comune di Busolleno business model (e-business perspective)

3.5.2. The e-government perspective

Currently Comune di Bussoleno offers only informational services through a central gateway that operates in-house.

Organizations in the public service network: Comune di Bussoleno is the main organisation in the business model network.

Service offerings: The e-services provide informational services. The end-users have easier, faster and uninterrupted access to public information, they do not need to physically interact with the department and the public services are provided to them 24/7.

Network coordination: The coordination necessary for the provision of services is only internal for the business and technical tasks involved in the e-services. As depicted in [Figure 12](#) ~~Figure 12~~ other municipalities that might offer informational services (in-house or with outsourcing to a service provider) currently do not coordinate with each other.

Business processes: The business processes involved refer to the selection of informational services, maintenance of the information and management of the technical infrastructure.

Shared resources: The resources for completing the business processes underlying the e-services include the IT personnel and the public officers involved in selection of information. They also include ICT infrastructure, data, and physical infrastructure.

Network capabilities: This element includes the back-office interfaces of the e-services that enable the department for example to upload.

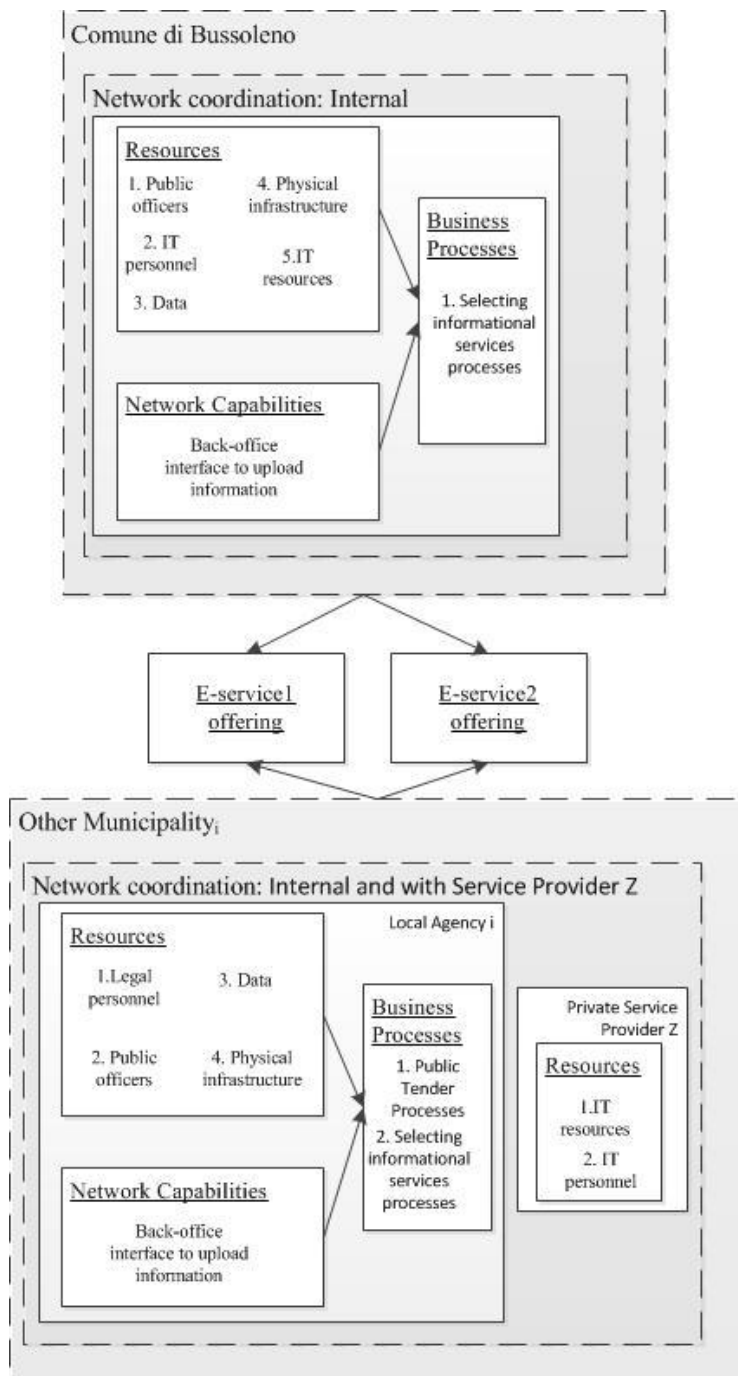


Figure 12: Comune di Bussoleno business model (e-government perspective)

3.6. Conclusions

Using the concept of business model we have represented and gained a deeper understanding on the business context of the pilot sites regarding web-based services. From a business perspective we can conclude for all pilot sites that there is no clear structure for managing the Value Finance component. Specifically, in all pilot sites there is no linkage between the revenues and costs of providing the e-services. Although public administration does not focus on making profit, from a management perspective it is needed to create a sustainable connection between revenues and costs. Additionally, in most pilot sites, the exploitation of the resources for the provision of the e-services does not create a core competence for the public administration. Finally we notice that the

pilot public agencies tend to hold a contract with a service provider per e-service; hence there is a chance that the services of the private providers are not fully taken advantage. Moreover, this practice inevitably increases the administrative burden for creating and monitoring multiple contracts.

From an e-government perspective we can identify within the agency an unnecessary fragmentation of resources; although most e-services require at least to some extent the same business processes and human and IT resources, it seems that the current practice leads to segmentation and probably repetitions that lead to delays, inability to advance knowledge and skills, inefficient use of resources, etc. Across public agencies we notice that the different agencies tend to repeat the same processes and occupation of resources in order to provide an e-service; hence there would be as many instances of the business model (IT resources, personnel, administrative work) as the agencies that provide the e-service. Finally from a central government point of view, a private service provider may receive from the government multiple contracts for providing an e-service to multiple agencies. This would mean a waste of public money since the provider actually multiplies the revenues for the providing same service to various agencies.

4. OASIS Business Models

The analysis of current web-based services' business models in the pilot sites demonstrates the deficiencies of existing practices both from a management and a financial view. OASIS envisions addressing some of these issues using the advancement of federating services technologies. OASIS aims at dealing with the segmentation and isolation of information by grouping online services in a unified portal following a user-centred logic. Federating services provide an opportunity for public administration to make better use of customer and public information. Moreover, they can enable public administration to make better use of IT resources making the services more efficient and less expensive by creating economies of scale and removing duplications of organisational structures and IT infrastructures. Finally, OASIS gives the opportunity to public agencies to make a better use of public assets (especially information) and create competitive advantage from making smart processing of it that could be exploited by other agencies. In the following we present a visionary OASIS business model that can be differently adjusted in the pilot sites during the project, based on their needs.

4.1. The e-business perspective

Value Proposition: The business model of OASIS incorporates a different business logic with the purpose to create value not only for the end-users (citizens, enterprises, public agencies), but also for all other involved parties including the public agency that provides the e-service and the private services providers.

- **Product and/or service:** The public agency can select and provide through OASIS platform and service providers various e-services, including information and transactional ones.
- **Intended value element:** The value that is offered to the end-users by accessing public e-services (such as the 24/7 provision or the easier access to information. OASIS intends to create value to the private service providers who can create a 'marketplace' of public services; private service providers can become proactive and design e-services for the public administration agencies instead of waiting for the often inflexible and bureaucratic public administration to create novel ideas for services. On the other hand, public administration can benefit from such a competitive environment by receiving novel ideas and becoming more advanced. Public administration will also benefit from an efficient identification from a single point of access (the OASIS Platform manager) of service private providers that can design e-services that manage the public data in a novel way.
- **Target segment:** The target market of public administrations is commonly citizens and businesses. However, OASIS envisions making public administrations more competitive and targeting also to other public administration agencies; in the case that a public agency invests into implementing a novel e-service that other governmental agencies want to utilise then the public agency can benefit from the original investment. This benefit can be either financial (for example with a share over the new contract) or ethical (for example with governmental acknowledgement of novelty and usefulness)

Value Architecture:

- **Core resources:** The resources for the provision of the e-services include ICT infrastructure (e.g. servers, network infrastructure), data (e.g. public information, citizens' data), physical infrastructure (e.g. computer rooms) and personnel (e.g. IT personnel, developers).
- **Value configuration:** The resources are processed in cloud architecture in which development, data hosting, service hosting, technical management and maintenance are combined. The private service providers will develop the software and maintain it and also will provide relevant physical infrastructure and personnel. The public agency will process the data (citizen and businesses' data, public data). The OASIS platform manager will

provide the physical infrastructure, personnel, and also service hosting and technical management.

- **Core competence:** The hosted e-services may be a core competence of the agency or a value-added service.

Value Network:

- **Actors:** The business model of OASIS involves more actors than the traditional e-government models; multiple private service providers, multiple other public agencies, central government, the OASIS platform manager.
- **Role:** The OASIS platform manager becomes a central point that collects e-services' needs from public agencies and advertises calls for projects to the service providers. The public agencies remain responsible for the collection, storage and processing of data. The service providers are responsible for the provision of e-services and for the design of novel ways to process public data and create value to the end-users. Central government provides the legislative framework and especially the public procurement procedures.
- **Relationship:** The public agency will hold a contract of membership with the OASIS platform. Also the agency will hold a **contract or Service Level Agreement (SLA)** with multiple private service providers.
- **Channel:** The e-services will be provided through OASIS platform.
- **Governance:** The **OASIS platform manager governs the relationship** with all partners for the e-services.
- **Network mode:** This is an **open value network** in the sense that public provider can design and implement an e-service, publish it through OASIS and target public agencies.

Value Finance:

- **Costing:** The provision of the e-services involves software development, data hosting, service hosting, technical management and maintenance costs. We can identify three scenarios for the costing choices: 1) services that the service providers have already registered as an option to the OASIS platform, b) services that are requested to be developed by a public agency, and c) existing or new services that require very short response time for which OASIS platform manager will provide the service hosting. In all cases, the OASIS platform will pay the technical maintenance costs and the public agency will bear a cost for OASIS membership. In scenario 1 (~~Figure 13~~[Figure 13](#)), the private service provider will undertake the software development costs and the service hosting while the data hosting costs will remain internal to the public agency. In scenario 2 (~~Figure 14~~[Figure 14](#)), the private service provider and the public agency will share the development costs. The private service provider will bear the service hosting cost and the public agency the data hosting cost. In scenario 3 (~~Figure 15~~[Figure 15](#)), the OASIS platform manager will be responsible for the service hosting instead of the service provider.
- **Pricing methods:** There are multiple scenarios that can be adopted regarding the pricing methods. First, the public agency will decide if the e-service will be provided to the end-users (citizens, businesses, other public agencies) for a price (subscription) or for free. Second, when a public agency invests on the development of an e-service in collaboration with the private providers and the OASIS Platform manager, then the e-service will be available to other public agencies. When the other public agencies select to use this e-service for a specific price, then the revenues are shared among the public agency that invested, the private provider and the OASIS platform manager.
- **Revenue structure:** Additionally to the indirect revenues from the collection of taxes, OASIS aims at increasing public agencies revenues by sharing the investment costs for the provision of an e-services among the agency, the OASIS platform and the private service provider and also sharing the potential profit from the end-users subscription (if any) and the service providers' memberships. Moreover, if it is decided to offer the e-services to the end-users with a price (or subscription) then this revenue will be shared between the OASIS platform manager who coordinates the marketplace, the service provider who offers the novel processing of data and the public agency who manages the data.

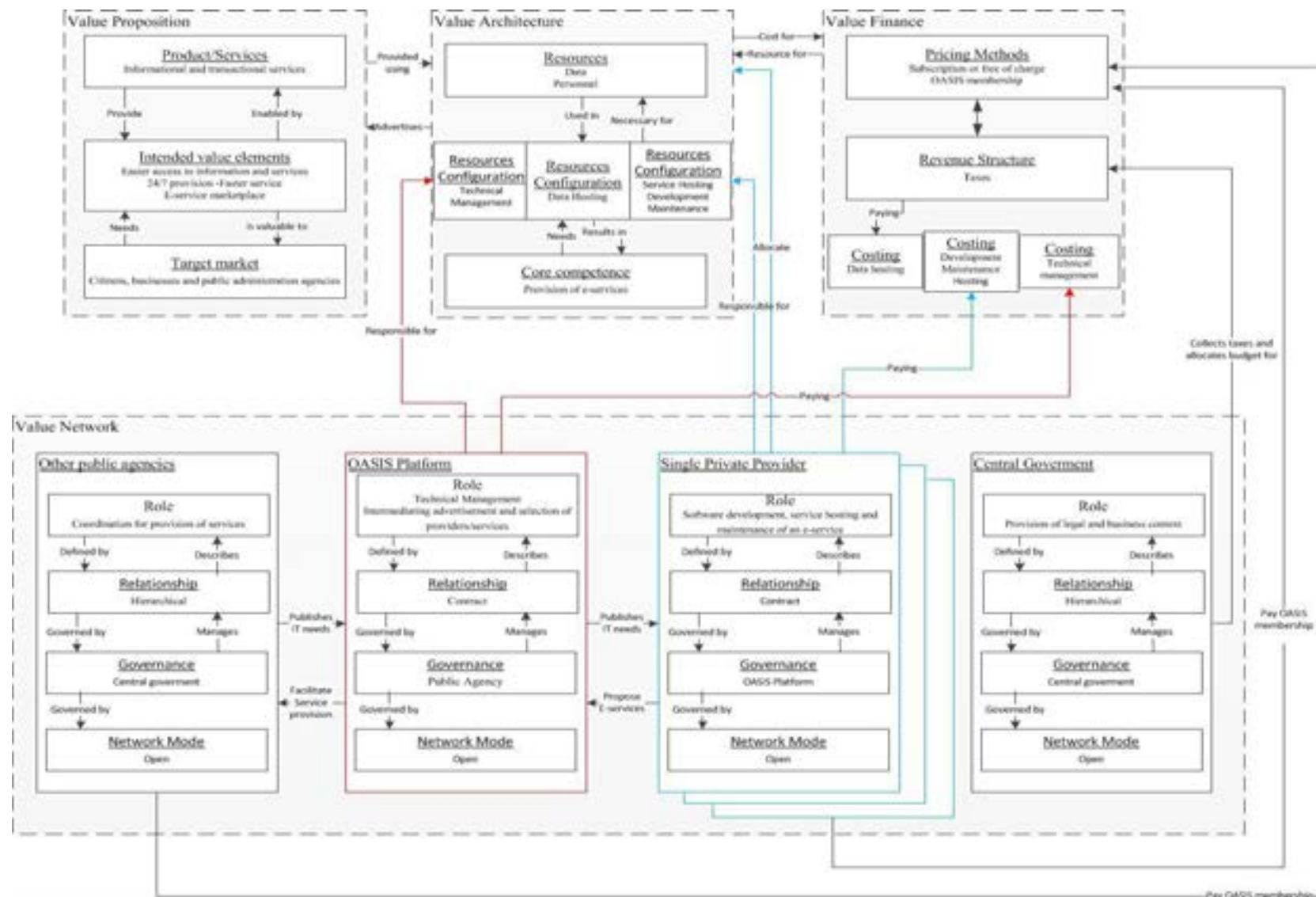


Figure 13: Public Agency using OASIS platform business model (e-business perspective, scenario 1)

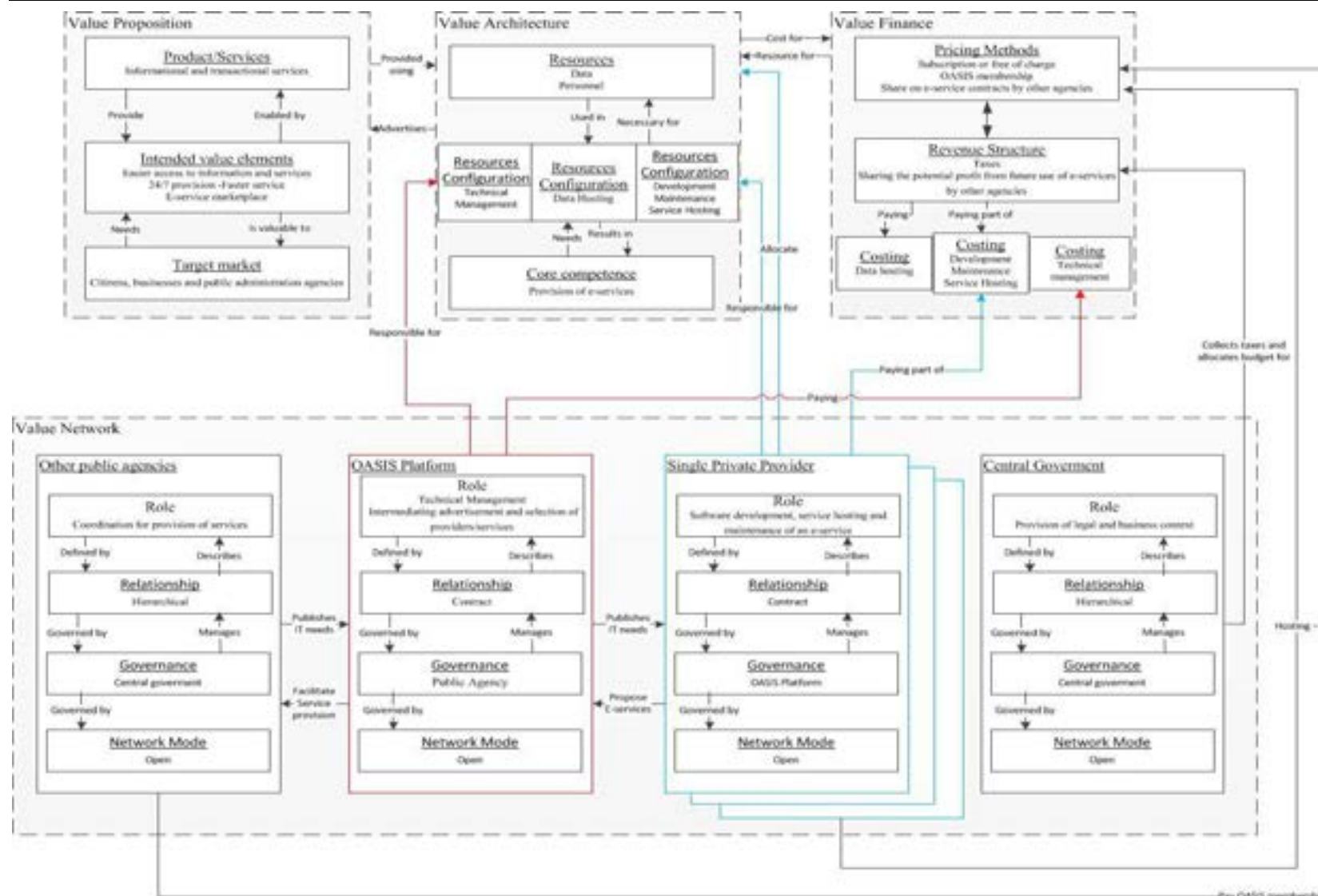


Figure 14: Public Agency using OASIS Platform business model (e-business perspective, scenario 2)

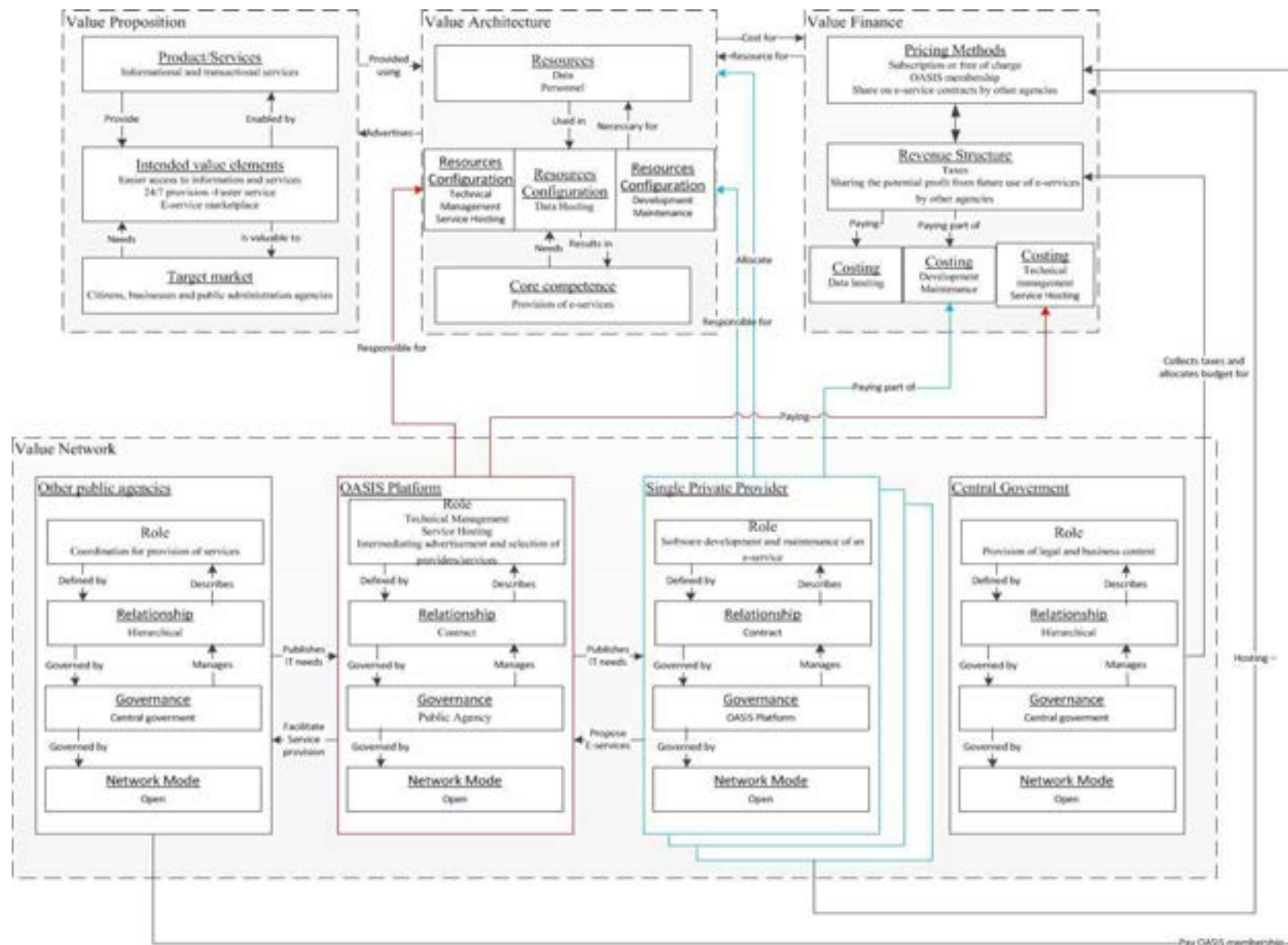


Figure 15: Public Agency using OASIS Platform business model (e-business perspective, scenario 3)

4.1. The e-government perspective

Organizations in the public service network: This element includes the organizations that need to collaborate for the provision of the e-services. These organizations are the private service providers, several public agencies, central government, and the OASIS platform manager. The public agencies collect and are responsible for the public data. The private service providers aim at developing new services for managing public data for the provision of novel services. OASIS platform manager is a central point to facilitate the identification of service providers or in some cases share the technical service provision.

Service offerings: The e-services provide informational and transactional services. OASIS platform will become a facilitator of finding e-services that process public data to provide novel services to citizens and businesses. Moreover, OASIS platform will attempt to create **economies of scale** in the provision of e-services for the public administration; in the cases that multiple public agencies request to purchase the same existing e-service the OASIS platform will aggregate the requests to achieve a better price than the one from the independent purchases.

Network coordination: Several relationships need to be coordinated for the OASIS business model. The public agency needs to coordinate with the OASIS platform manager for the selection of e-services from a list of existing services or for requesting a new e-service proposed by the public agency. It should be noted, that in that the OASIS platform manager needs to coordinate with multiple public agencies to aggregate multiple requests of the same service into one contract with the service provider of the e-service in question ([Figure 17](#)~~Figure 17~~). The OASIS platform manager also needs to collaborate with the private service providers.

Business processes: The initial processes involved refer to the identification and selection of e-services from the ones that are already offered by the service providers. In this case the purchase of an e-service will be similar to the one of a commercial software package. Other business processes include the processing of data within the agency for each service.

Shared resources: The resources for completing the business processes underlying the e-services include the legal experts, the IT personnel and the public officers involved in each service. They also include ICT infrastructure, data, and physical infrastructure.

Network capabilities: This element includes the back-office interfaces of the e-services that enable the Agency to access the e-service.

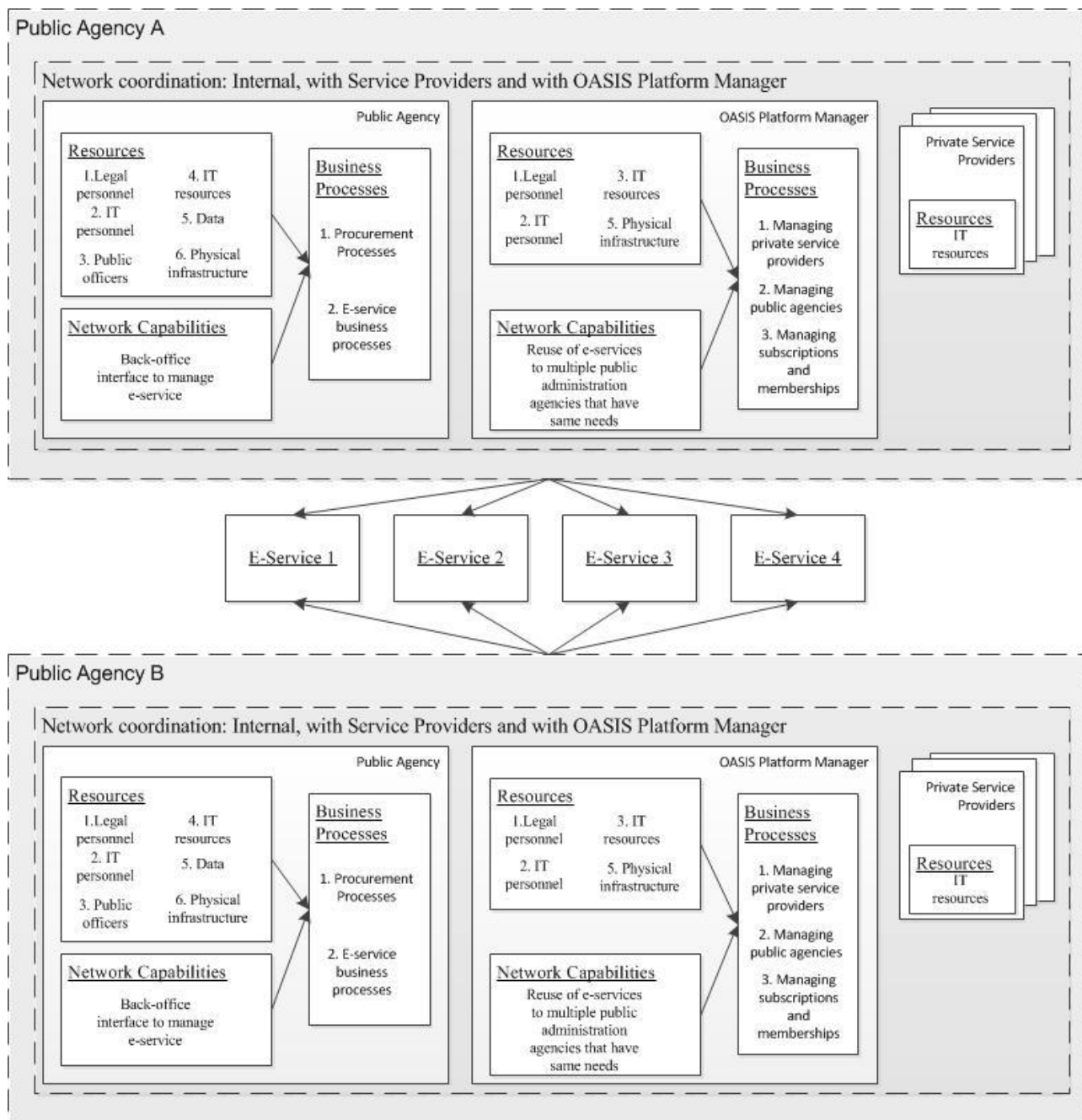


Figure 16: Public Agency using OASIS Platform business model (e-government perspective)

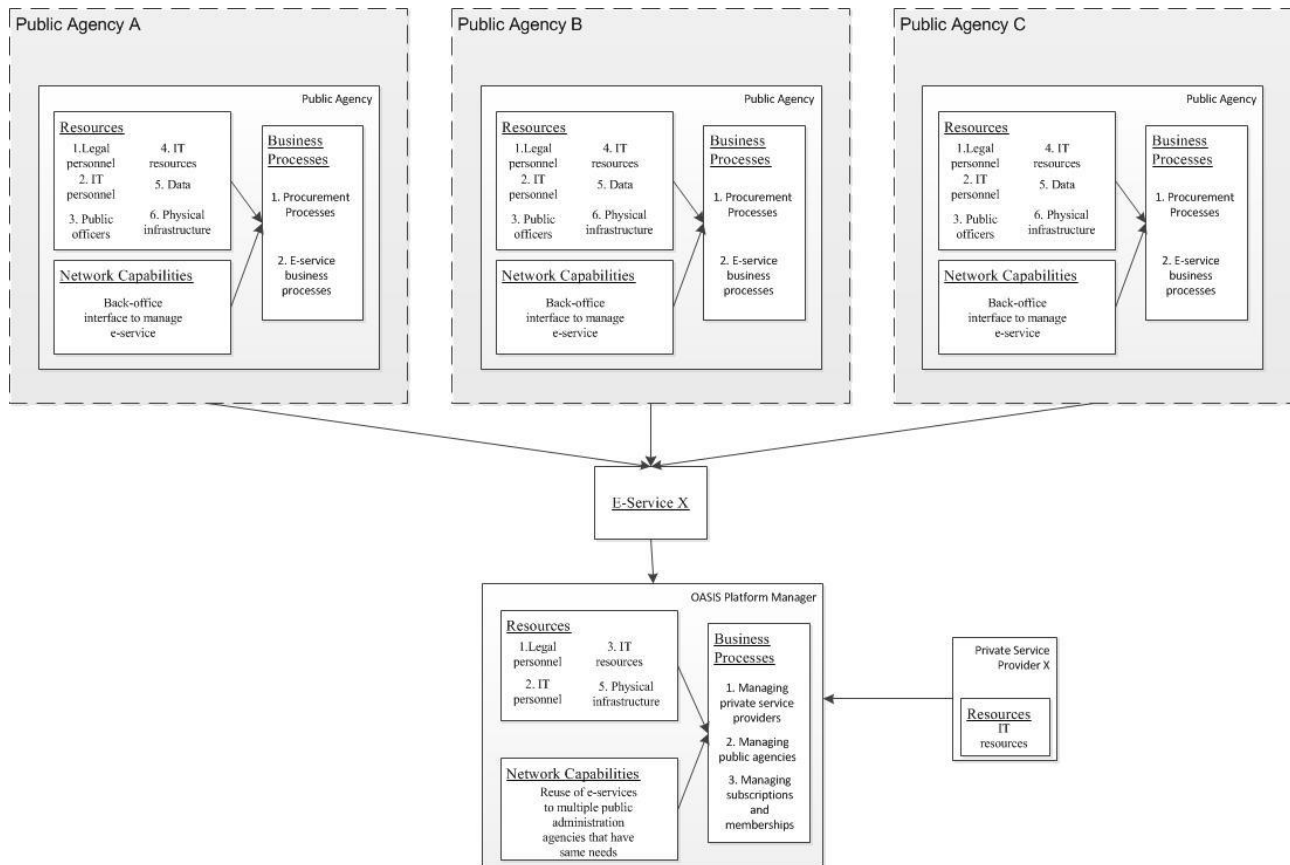


Figure 17: Public agencies requesting same e-service using OASIS Platform (e-government perspective)

5. Assessment on the Value Finance

The current section is an introduction to the work that will be developed during the second iteration of the business model creation.

One of the elements included in this second iteration is related to the definition of a modelling tool allowing the stakeholders to define different business scenarios for the future commercial exploitation of the platform.

In the final part of the first iteration of the business model the consortium has developed a first immersion in the cost model as a starting point for the work to be implemented in the next tasks.

5.1. General methodology

The creation of a model for the estimation of the profitability related to the commercial exploitation of the model has a starting point in the analysis of the value finance. It implies the identification of the mail revenue and cost streams and its comparison with the current models when applicable.

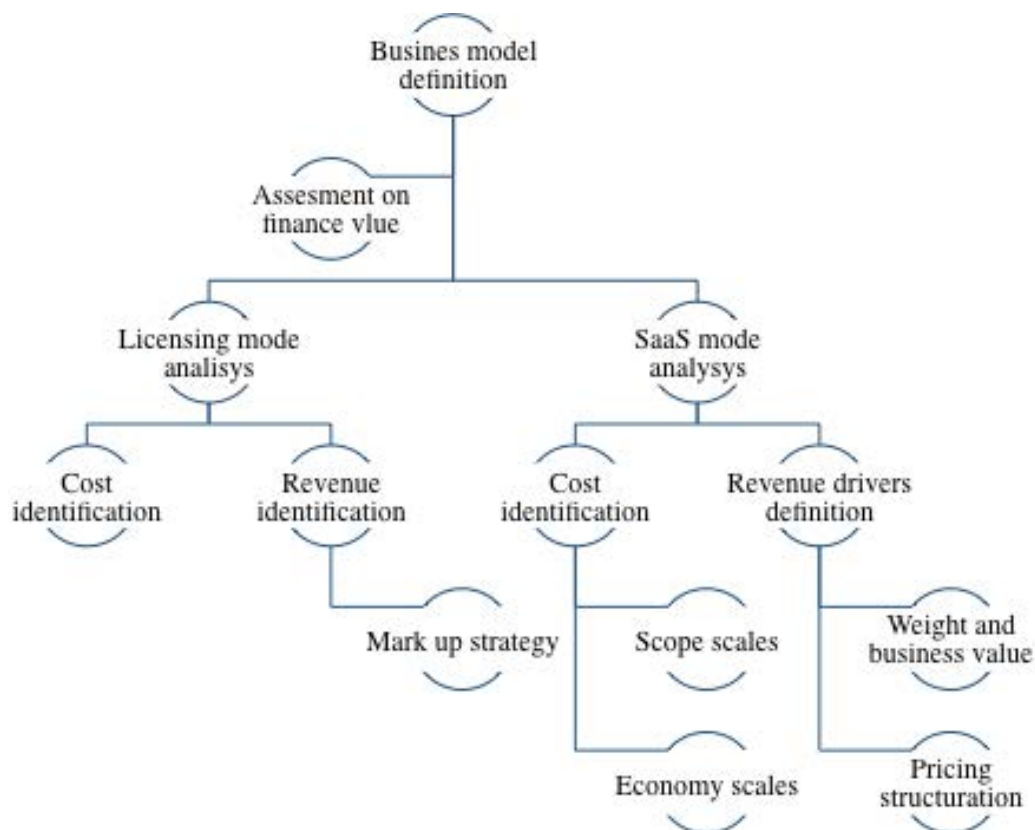
The main elements included in the approach are:

- **Cost modelling for general licensing mode:** The current approach related to the delivery of services means a classical ICT project licensing mode driven approach. In this scenario the provider/s is/are creating a value proposition including all the software and hardware needed that are sold to the public body as single unit. In this case, no economy of scale appears (or it is very reduced).
- **Cost modelling for Software as a Service (SaaS) mode:** In this case the selling process is considered as a rental of services instead of the delivering of a product. It means that in terms of groups of costs, the approach will be very closed to the previous one and the main element is the fact that economy of scale and scope will allow the service provider to be able to recover costs easily.
- **Revenue modelling for general licensing mode:** For this case, the expected revenue model is based on the application of a mark up on top of actual current costs. The model is related only to the process for recovering incurred costs both direct and indirect.
- **Revenue modelling for Software as a Service (SaaS) mode:** In this case the model is based on the definition of a event and resource consumption of services. The main part of the task for developing this model will be related the identification of the drivers that are constructing the event appearance model and the consumption of resources models.

The main steps for the methodology are expected to be as follows:



The methodology will be detailed defined during the next tasks of the WP. By the moment, some guidelines have been identified. The waterfall structure for the first part of the methodology have been defined as:



As a starting point, the outcome of the current work includes the first identification of the cost items and a first estimation of the costs for different number of public bodies served. In the next parts of the section we include a description of the cost models for licensing mode and SaaS mode.

5.2. Cost Model for General Licensing Mode

The main groups of cost identified for this mode are the following:

Group of costs	Identified costs
Software related costs	data retrieval licence Software support software installation and personalisation
Infrastructure costs	basic infrastructure management : maintenance (internal staff or subcontracted) Supervision, security, version and components follow up, clean room, air conditioning shared or dedicated equipment performance et high availability : scalability clustering ...
Security related costs	Security: dmz access mobile web services reverse proxy general security reference...

Backup:
incremental / system
recovery activity

The first estimations made show the following costs:

		1 public body	5 public body	10 public body
Software related costs	data retrieval	1.000 €	5.000 €	10.000 €
	licence	0 €	0 €	0 €
	Software support	4.000 €	20.000 €	40.000 €
	software installation and personalisation	1.800 €	9.000 €	18.000 €
Infrastructure costs	basic infrastructure management : maintenance (internal staff or subcontracted)			
	Supervision, security, version and components follow up, clean room, air conditioning	5.000 €	25.000 €	50.000 €
	shared or dedicated equipment performance et high availability : scalability clustering ...	1.000 €	5.000 €	10.000 €
Security related costs	Security: dmz access mobile web services reverse proxy general security reference...	5.000 €	25.000 €	50.000 €
	Backup: incremental / system recovery activity	2.400 €	12.000 €	24.000 €
TOTAL COSTS		25.200 €	126.000 €	252.000 €
COST PER PUBLIC BODY		25.200 €	25.200 €	25.200 €

5.3. Cost Model for Software as a Service (SaaS) Mode

The main groups of cost identified for this mode are the following:

Group of costs	Identified costs
Software related costs	data retrieval

	licence Software support software installation (template) software customization
	Software upgrade (1 day per month)
Infrastructure costs	basic infrastructure management : maintenance (internal staff or subcontracted) Supervision, security, version and components follow up, clean room, air conditioning REAL shared or dedicated equipment
	performance et high availability : scalability clustering ..
Security related costs	Security: dmz access mobile web services reverse proxy general security reference... Backup: incremental / system recovery activity
Connectivity costs	Broadband connectivity

The first estimations made show the following costs:

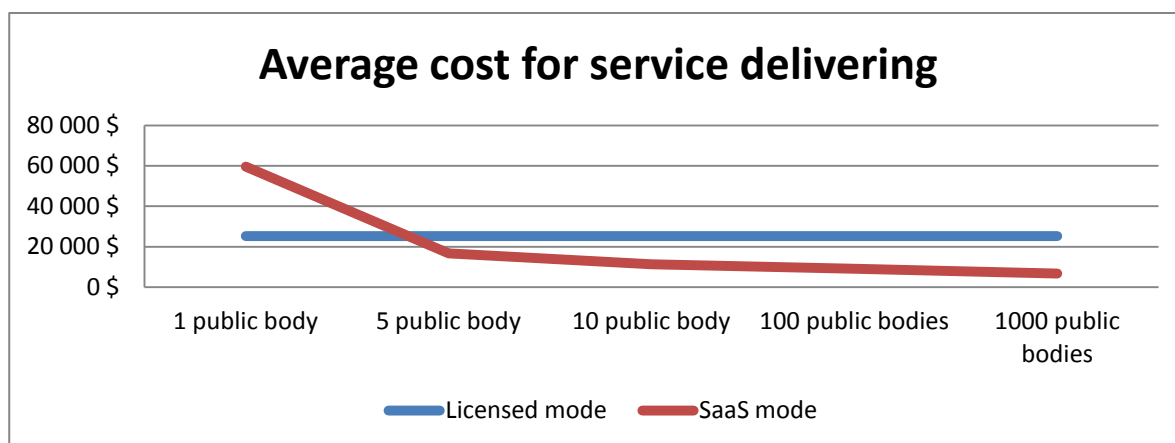
		1 public body	5 public body	10 public body	100 public bodies	1000 public bodies
Software related costs	data retrieval	1.000 €	5.000 €	10.000 €	100.000 €	1.000.000 €
	licence	0 €	0 €	0 €	0 €	0 €
	Software support	4.000 €	20.000 €	40.000 €	400.000 €	4.000.000 €
	software installation (template)	3.000 €	3.000 €	3.000 €	3.000 €	3.000 €
	software customization	900 €	4.500 €	9.000 €	90.000 €	900.000 €
	Software upgrade (1 day per month)	450 €	450 €	450 €	450 €	450 €
Infrastructur e costs	basic infrastructure management : maintenance (internal staff or subcontracted) Supervision, security, version and components follow up, clean room, air conditioning	5.000 €	5.000 €	5.000 €	15.000 €	20.000 €

	REAL shared or dedicated equipment performance et high availability : scalability clustering ..	30.000 €	30.000 €	30.000 €	150.000 €	300.000 €
		5.000 €	5.000 €	5.000 €	50.000 €	100.000 €
Security related costs	Security: dmz access mobile web services reverse proxy general security reference...	5.000 €	5.000 €	5.000 €	50.000 €	100.000 €
	Backup: incremental / system recovery activity	2.400 €	2.400 €	2.400 €	24.000 €	240.000 €
Connectivity costs	Broadband connectivity	2.800 €	2.800 €	2.800 €	25.000 €	100.000 €
	TOTAL COSTS	59.550 €	83.150 €	112.650 €	907.450 €	6.763.450 €
	COST PER PUBLIC BODY	59.550 €	16.630 €	11.265 €	9.075 €	6.763 €

5.4. Comparison of results

In the next figure are shown the average costs for both models.

The results show that the SaaS mode implies at service provider side an important level of savings. These savings will be translated to the revenue stream creating a business scenario that will allow the consortium to identify the most suitable model for the commercialization of the results of the project.



The gradient of the line showing the SaaS mode values have changes while incrementing the number of public bodies involved as a result of the different scalability and modularity of the components of the solution.

It should be noted that the values that appear in the previous tables and figure are a first estimation and it is probable that the final model will produce results that will differ from those included in the current document.

6. Conclusions

The purpose of this deliverable is to provide a documentation of the business environments of the pilot sites involved in OASIS. Based on the analysis of the associated business cases, we highlighted opportunities for improvement of the business contexts both regarding financial and operating structures. Specifically, we identified that the pilot sites do not associate the revenues and costs linked with the provided e-services. Also, the pilot sites tend to hold multiple legal contracts with multiple private service providers (usually as many as the e-services). This is accompanied by slow and bureaucratic procedures to establish a new e-service and fragmentation of resources. Finally, although the needs of the local public authorities resemble, a lack of coordination prevents the creation of economies of scale that could benefit the governments.

OASIS presents an opportunity to resolve or improve the above problems by creating a central access point that can operate as a marketplace for e-services. The main concept underlying this business model is that the service functioning and the data can be regarded as separate elements. The public agencies are responsible for the secure processing of public data, but the private service providers can propose novel ways that these data can be processed in the benefit of citizens, businesses and local authorities. OASIS presents a business model in which the public agencies can share with the private service providers the investment costs for a new service offering, but also can share revenues for a defined period. This model refers to the communication of the European Commission COM(2007) 799 on "Pre-commercial Procurement: Driving innovation to ensure sustainable high quality public services in Europe". Finally, OASIS can become the coordinator of such e-service agreements and aggregate public requests to achieve better price offerings by the private sector.

Following the analysis of the existing business cases per pilot site in providing public e-services and the presentation of the OASIS envisioned business case, an analysis of the cost modelling and revenue modelling elements is presented. Two main modes are examined; namely the general licensing mode and the SaaS mode that represent the existing business case and the OASIS one respectively are examined. The first estimation indicates that the SaaS mode implies at service provider side an important level of savings and at the government side important savings as the number of public bodies is increasing. An analysis of the OASIS business model specification per pilot site will be presented in the second iteration of this deliverable. For that second iteration it is important to mention that following elements will be analysed in detail:

- Trends in modularity of components and systems
- Power consumption issues
- Identification of drivers for determining the elements included in revenue stream
- Identification of intangibles that provoke hidden savings derived from moving to the cloud
- Isolation of cost elements of the value chain of the service provision
- Allocation of costs to actors participating in the service delivery
- Outsourcing of parts of OASIS value chain

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