



Emerging shared service organizations and the service-oriented enterprise

Critical management issues

Emerging shared service organizations

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Abstract

Purpose – Service-orientation enables new organizational forms and organization initiate shared service centers (SSCs) to become shared service organizations (SSOs) or service-oriented enterprises (SOEs). Services can be performed in-house, shared or outsourced. However, this form of organization faces significant challenges and to date not much research has focused on capturing experiences in this domain. The aim of this paper is to identify critical management issues in the development of service-oriented arrangements.

Design/methodology/approach – The research used a combination of literature and case study research, whereby literature provided the theoretical foundations and the case study is used to identify the critical research challenges.

Findings – Technological developments enable a service-oriented approach, leading to new organizational forms and a shift towards a more market-oriented type of control. The SOE is an enterprise that is modularized in business domains and organized around SSCs. New products can be created by orchestrating the services provided by the service centers, and this orchestration is expected to become a core capability. Service centers display varying levels of modularity, which influences the sourcing options. In our case study, the SSO and SOE emerged and evolved out of SSCs, and as a result an incremental, staged approach should be adopted with regard to its implementation. The main critical management issues are a carefully executed strategy, the redesign and reorganization of activities and roles, the standardization of processes, applications and the underlying IT architecture, and management of the transformation by involving all stakeholders.

Research limitations/implications – The SOE is explored using a single case study, which although it provides in-depth insight, limits statistical generalization. Further research should focus on the benefits, drawbacks and risks of these concepts. In addition, the bundling and orchestration of services need to be investigated.

Practical implications – This type of change is often technology driven. Companies should address the critical management issues when they adopt a more service-oriented approach at a business level.

Originality/value – To date, there are very few empirical studies that look at SSO and the SOE. This paper offers a contribution by investigating a real-life case study, analyzing the kind of organization involved, and identifying the challenges and issues.

Keywords Services, Outsourcing, Information networks

Paper type Research paper

1. Introduction

Enterprises can be organized by using different parts provided by a range of companies (Binder and Clegg, 2006). These parts can be provided as services and the need to be orchestrated by the core company in the network. Nowadays, more and more organizations adopt service-orientation by using service centers and turning themselves into shared service organizations (SSOs) or service-oriented enterprises (SOEs). Both the



SSO and SOE can be viewed as a set of capabilities that can be reconfigured to meet changing objectives (e.g. Cherbakov *et al.*, 2005). These capabilities are often organized in the form of shared service centers (SSCs), which can be defined as a semi-autonomous entity that provides well-defined services to other organizational entities based on predefined service level agreements (Bergeron, 2003; Janssen and Joha, 2006). The use of SSCs is often a first step towards outsourcing, because it tends to involve semi-autonomous business units and it allows companies to see what it is like to manage those business units within their own hierarchical control (Janssen and Joha, 2006). Ideally, the SOE is an enterprise of cooperating services that are loosely coupled to create dynamic business processes and applications and span organizations and heterogeneous information systems, which nevertheless offer the flexibility to adapt to changing circumstances quickly (Cherbakov *et al.*, 2005). In fact, at the heart of the SOE lies a sourcing question, because the modules involved can be sourced in different ways.

Adopting service-orientation offers many benefits to enterprises, making it possible to create services that are modular, accessible, well-described, implementation-independent and interoperable (Fremantle *et al.*, 2002, p. 80). Rather than having to set up a new department for every new product or service, it allows companies to assemble new processes by reusing already existing services. The premise is that a SOE has tremendous potential and can offer all kinds of benefits, allowing companies to improve their efficiency, consistency and reliability, to reduce costs and risks, to create agility and flexibility and to reuse existing processes on the basis of service-oriented design principles (Erl, 2007; Khoshafian, 2006; Krafzig *et al.*, 2004; McGovern *et al.*, 2006; Woods and Mattern, 2006). Each SSC specializes in certain types of roles in the production process, which can yield economic benefits (e.g. Clemons and Row, 1992) and may create dependence among the participants involved.

Although the concept of the SOE is an appealing one, there are few examples of research into its implementation and practices. Furthermore, because implementation may depend on the company and domain under study, we have opted in favor of exploring a SOE in practice by conducting a case study of a company in the financial sector, with a focus on modularization and management sourcing issues. This should provide insight into typical problems that need to be dealt with, and can be used as input by other researchers in their studies of this area. Furthermore, it should provide practical help to companies that find themselves faced with these challenges. The reason we decided to carry out a case study in the financial sector, is that a number of companies in this sector are considered frontrunners when it comes to service-orientation. In recent years, several of these financial organizations have begun using service centers that provides services to multiple users. The services provided by the SSCs are loosely coupled and can be used to create dynamic business processes in a flexible way. The structure of the paper is as follows. In the next section, we discuss the theoretical background, after which the research approach is presented. Next, the case study is described. In section 5, we discuss our findings, and in section 6, we present our conclusions and recommendations.

2. Theoretical background

2.1 Modular systems and services theory

Enterprise organizational structures change due the to focus on core competence and the use of parts provided by different companies (Binder and Clegg, 2006). When an enterprise is modularized, this means that the functions and activities should be identified and assigned to modules according to some kind of modularization principle.

Service-orientation emerges from service-oriented architectures (SOAs). In a SOA, what is inside the modules is hidden, which means that the environment is only exposed to the service interface (Fremantle *et al.*, 2002); the idea being that the elements within the module can be altered without affecting the interface. In this way it should be easy to replace the modules, using a variety of sourcing options. Generally speaking, modularization serves three purposes, any of which may justify expenditures to increase modularity (Baldwin and Clark, 2000):

- modularity makes complexity manageable;
- modularity enables parallel work and improvement;
- modularity creates adaptivity to deal with uncertainty.

Modularization and service-orientation makes it possible to integrate and disintegrate potential new business components efficiently and effectively, either by sharing modular components internally, or by outsourcing modular components to an external supplier. To adapt to changing circumstances, new partners, business services and software modules can be plugged in or removed. The various options of sharing, insourcing and outsourcing of modular components are presented in Figure 1.

Introducing a SOE involves a critical decision at a strategic level. It implies a long-term strategy with considerable complexity and risks. At the heart of this kind of organization there is an implicit sourcing question. The company involved needs to be divided into modular components, which in turn need to be integrated. This process of organizational decomposition and integration is realized through the use of services. Moreover, there is a need for new business functions that concentrate on performing more business process management and orchestration activities to facilitate the integration of modular components.

The SOE can be viewed as a particular kind of sourcing arrangement consisting of service requesters and providers. The introduction of service-orientation can be seen as a first step towards the outsourcing of services (Janssen and Joha, 2006). After all, if services are based on a loose kind of organization and if there are well-defined interfaces, it is no longer important who operates the services or how they are implemented. As a result, the overall focus of company management shifts towards managing the service interfaces.

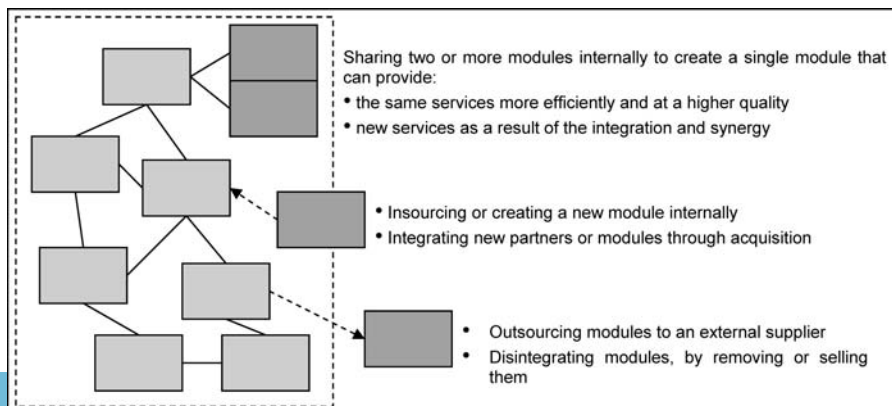


Figure 1.
Integrating,
disintegrating and
sharing modules in a SOE

2.2 Sourcing theory

Sharing services can be seen as a specific kind of outsourcing arrangement, because outsourcing arrangements address the relationship between clients with one or more external vendors, whereas shared services arrangements address the relationship between many clients and one vendor, which belong both to the same organizational entity (Janssen and Joha, 2006). There are many theories that address the issue of sourcing, including transaction cost, principal-agent, resource-based, coordination, social contract, social exchange and core competency theory. Lee (2003) provides an overview of the various theories, the accompanying sourcing issues and driving motto. In our analysis, we use transaction-cost theory, as it can be used to explain the existence of firms (e.g. Coase, 1937), and because technological developments influence transaction cost and the organization of firms (e.g. Clemons and Row, 1992). In addition, we use the principal-agent theory, because it addresses the relationship between the principal, the service requester, and the agent, the service provider. These types of relationships are of key importance in an SSC and SOE.

The emergence of the concept of SOE can be explained by looking at transaction costs. Transaction-cost theory is often used to explain the trend towards more sourcing, with coordination costs falling due to the use of new technologies (Coase, 1937; Williamson, 1975). "Transaction costs result from the transfer of property rights between parties and exist because of friction in economic systems" (Coase, 1937; Williamson, 1975). Coase argues that the main reason to set-up a business is to avoid some transaction costs, whereas Williamson sees asset specificity, in which assets are specific to each other, as the main reason for the existence of firms. The electronic market hypothesis of Malone *et al.* (1987) and the move toward the middle hypothesis by Clemons *et al.* (1993) suggest that the use of information systems organizations to outsourcing activities, by reducing coordination costs. In addition, Clemons *et al.* (1993) argue that IT can reduce coordination costs without increasing the associated risks that would result in more outsourcing and less vertically integrated firms. The basic idea is that enterprises will stop expanding internally when the cost of organizing an extra transaction within the boundaries of the enterprise becomes equal to the costs of carrying out the same transaction elsewhere in the market. The Internet enables connectivity and SOAs improve the interoperability and reduce transaction costs, allowing organizations to focus on their core competencies.

In a service-oriented approach, the roles of and interactions between service requesters and providers are of central importance. Principal-agent theory deals with the relationship between the principal and agent based on the division of labor, information asymmetry, and environment and partner behavior (Jensen and Meckling, 1976). In our case study, the organizational entities that use the SSC are the principals, while the SSC is the agent. The agent makes decisions that influence the organizational entities. In this theory, the agency costs, the principal costs of monitoring and control, and the guaranteed costs of the agents are seen as remaining welfare loss and as an efficiency criterion, recommending institutional arrangements that minimize the agency costs (Jensen and Meckling, 1976). This theory draws attention to the relationship between principal and agent, and the need to manage these relationships using service level agreements, contracts and benchmarking. The risks involved can be prevented by managing the relationships between client and vendor and by improving communication. It is impossible to translate out every possible scenario into a contract, and relationships often go beyond rules, agreements and exceptions, and are based on trust, commitment and mutual interest (Lee *et al.*, 2003). Principal-agent theory draws

attention to the need to investigate the relationship and agreements among service centers. Emerging shared
service
organizations

2.3 Factors affecting sourcing

There are various factors that influence the sourcing options available to companies, with some core activities, for instance product innovation, preferably kept in-house, while other non-core activities can be outsourced to the market, because external suppliers can provide higher quality at lower costs. Factors that affect the transaction costs are coordination costs, asset specificity, complexity of product descriptions (Malone and Crowston, 1990), operation risk and opportunism-related risk (Clemons *et al.*, 1993). Market transactions create coordination costs such as selecting reliable suppliers, negotiating agreements, orchestrating the relationships by monitoring, taking actions, improving quality, etc. Asset specificity refers to assets that cannot be used instantly by other organizations due to site specificity, physical asset specificity, or human asset specificity (Malone and Crowston, 1990). Malone *et al.* (1987) define the complexity of product descriptions as “the amount of information needed to specify the attributes of a product in enough detail to allow potential buyers to make a selection”. Operational risks are described by Clemons *et al.* (1993) as the risk of another party involved in a transaction underperforming with regard to its agreed responsibilities, willfully misrepresenting itself or withholding information, while opportunism-related risks are associated with insufficient bargaining power or the loss of bargaining power as a direct result of the relationship with another party. The latter contains, among other things, relations-specific investments and lock-in effects. These factors influence the different sourcing options.

3. Research methodology

The objective of this study is to analyze and improve our understanding of the SOE in practice by identifying critical management issues. This analysis should increase our knowledge of the transformation towards the SOE and can be used by practitioners to support the change process.

The selection of research instruments depends on the amount of theory that is available, the type and complexity of the problem under study and the research objective or questions. Firstly, theory concerning the SOE is scarce and it often focuses on technical aspects rather than management issues. Secondly, the problem under study is complex, involving aspects at a strategic, organizational, business process-oriented and technological level. In addition, the type of organizations we have investigated can be described as “a shifting, multiple-goal political coalition” (March, 1988). Finally, because it is our purpose to build rather than test theory, due to the relative lack of empirical studies regarding the SOE, we have opted in favor of exploratory research by conducting a case study.

Case study research can be characterized as qualitative and observatory in nature, using predefined research questions (Yin, 1989). The case study research methodology is particularly well suited to information systems (IS) research (Benbasat *et al.*, 1987). We conducted eight semi-structured interviews with organizational representatives and external consultants involved in the creation, transformation and operation of SOEs. During the interviews, the history, evolution and critical management issues of the SOE were discussed. The questions concerning critical management issues were based on literature (Erl, 2007; Khoshafian, 2006; Krafzig *et al.*, 2004; McGovern *et al.*, 2006; Woods

and Mattern, 2006). In addition, documents relating to the history, set-up and operation of the SOE are analyzed.

4. Case: the SOE

The company we investigated is one of the largest financial service providers in the Netherlands, operating over 20 brands in a number of markets. Although the Netherlands is the principal market, the company is active in many European countries. The company was formed by several acquisitions and mergers in the past, and it has a number of offices in various locations in the Netherlands.

We took the company as an example of a SOE, because it is organized around service centers, which means service-orientation is applied at the organizational level. In essence, the service centers communicate and need to interact with each other to provide a product or service to the customers. Each service center has a number of functions and operations that need to be combined with the functions of the other service centers to meet customer demands.

Because the service centers and service-orientation have in place for a number of years, any start-up problems have already overcome, and the interviewees are already used to the new type of organizational structure.

4.1 History and evolution

The company decided to opt in favor of a service-oriented approach after several mergers and acquisitions, which resulted in a large duplication of activities and the need to restructure the company. Initially, this resulted in the merging of some of the departments into a SSC. This was an exploratory move, because the SSC was intended to serve several labels and at the same time work more efficiently. At a later stage, more and more SSCs are created. The management of the SSCs was able to outsource parts of their activities. Some SSCs were even outsourced completely, when the company decided it needed to focus on its core activities in a globalised market, the most prominent example being the payment of the insurance claims.

Developments towards the SOE took place incrementally over the course of the better part of a decade. Generally speaking, we identified four notional stages of maturity:

- (1) *The traditional enterprise.* At this stage, there is a traditional hierarchy consisting of functional departments.
- (2) *SSO.* In the next phase, a number of services are unbundled and concentrated in shared service centers. At this stage, one or more SSC are coming into existence. The shared service stage contains a combination of functional hierarchy and SSCs.
- (3) *SOE.* At this stage, a separate management and coordination layer is introduced, the complete organization is organized around shared service centers and there are no longer any functional departments.
- (4) *Retained SOE.* At the final stage, a number of shared service centers are outsourced.

In Figure 2, the progression from one stage to the next is represented. This model shows the emergence of a small number of shared service centers in phase 2. There are service level agreements (SLAs) between each of the departments and the SSC, and they all start using the services of the SSCs, either on a voluntary basis or because in

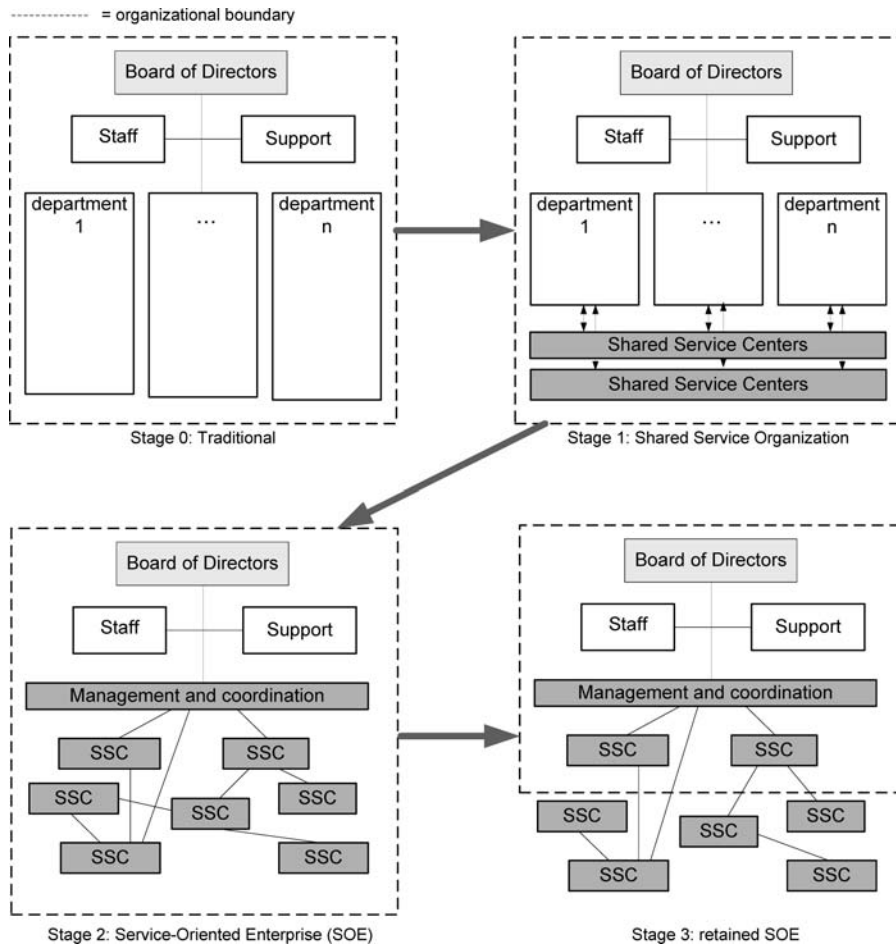


Figure 2.
Evolution towards SSO and the SOE

time they are forced to do so. Slowly the departments, supporting the board of directors, start focusing on managing the service centers, to realize the company's objectives, and on product innovation, as all service centers should be involved in the innovation process. This results in the SOE, in which most of the SSCs are located in-house. In the next stage, more and more shared services are outsourced, with only the core services that distinguish the company from its competitors carried out in-house, keeping in mind that managing the supply chain itself also becomes a core capability.

4.2 Relationships among service centers

The principal-agent theory deals with the relationship between the principal and the agent. There are many interactions and relationships among the service centers, in which the service centers can act as service providers, agents, and as requesters in the role of principals. Figure 3 presents an example of interactions among service centers for the processing of claims. These types of interactions appear in stage two and three of Figure 2 and are representative of most of the insurance products. In case an accident happens, an insured can submit a claim to the insurance company and a

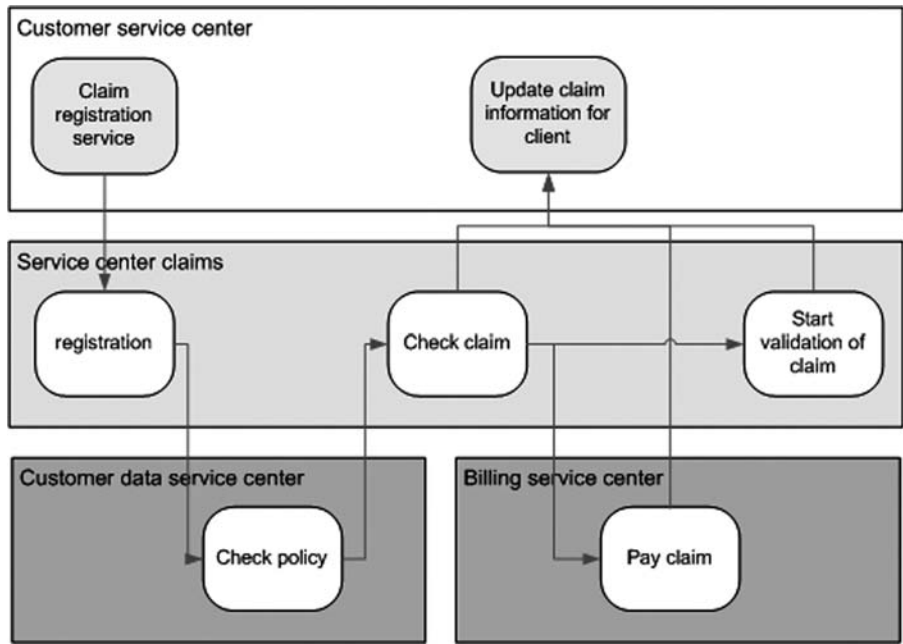


Figure 3.
Example depicting the
operational relationships
among service centers

business process that crosses several service centers is started. Firstly, the claim is registered, after which the information is checked by the customer data service center. The customer data service center stores all data regarding the customer and the policy. After checking whether or not the claimant is covered by the policy, the claim will be checked. This can be done by asking experts to investigate the claim, although for small claims, in many cases no initial check is performed. The claim will be validated only after money has been paid to the claimant.

If the service center claims decides to pay, the billing service center is asked to settle the payment. The billing service center makes sure that the claim is paid and checks if the client has no payment backlog. After payment has taken place, an entire procedure for validation may be set in motion. The customer service center receives updates of status changes and, if so desired, can communicate relevant information to the client.

This example shows that a number of service centers are involved in processing a claim. Each service center has its own specialization and focuses on its own core business. The entire process of unbundling, concentration and integration is realized through the use of service centers aimed at integrating the efforts of the single business services. The service center processing the claim acts both as a service provider, by offering all kind of services related to claims, and as a requester, by using the services offered by other service centers.

Service providers and service requesters make agreements concerning their performance with regard to criterion s like response time, service availability and helpdesk support. Long-term agreements concerning the service levels, costs and development of new products are made only once a year. These negotiations results in SLAs that need to be monitored. SLAs help strengthen the principal role of service requesters. If there are questions or problems, the service centers can interact using a help desk or account manager, whose aim it is to solve any operational questions. Each

service centers offers a number of web-services that can be used by the service requester to initiate a new service. In addition, a number of web-services are offered to provide control and monitoring information.

The entire company is organized around units that provide and request services, the so-called service centers. In all, there are 12 main service centers, and each service center can act as service provider and requester. Because not all end-users can make arrangements with a service provider, there is a service center that is aimed at creating new products and making sure that existing products are improved through the use of other service centers, and which primarily acts on behalf of (potential) customers. This center makes agreements with service providers about their service offerings, the annual improvements that need to be made and the development of new services needed to offer new products.

5. Discussion

5.1 Modularization and service-orientation

The modular structure of the organization is not the result of the implementation of a blueprint, but emerged over time. At the outset, a single SSC is created that seemed to embody a logical cluster of activities and that had clear boundaries with the other parts of the organizations. One of the advantages of this initial SSC is that it offered potential benefits as a result of economies of scale.

The decision-making process consisted of negotiations and numerous interactions between managers. It is only after the decision to start a SSC is made, that the implementation details and interactions with the other parts of the organization are considered. Although the interviewees indicated that some of the existing problems may be solved by changing boundaries, it was decided not to change the organization of the service centers after they had been established. The design process is based on successive refinements of the general requirements that had been drawn up with the vision is developed, until a suitable concrete implementation of the final modular organization is reached. We found that the logic to cluster certain shared services is not unambiguous. Modularization is based on four categorization principles that could be overlapping to some extent (Janssen, 2008).

- (1) products, e.g. based on insurance products;
- (2) functionality, e.g. service center collecting payments or paying claims;
- (3) expertise, e.g. legal service center;
- (4) information systems, e.g. service center infrastructure.

The four modularization principles are used to some degree. Clustering based on different criteria may have a similar outcome, for example, the service center infrastructure can be derived by using the information systems or by using the expertise modularization principle. The functionality modularization principle can take a process-related view, as functionality can be used to support the entire life-cycle of insurance policies.

5.2 Sharing and sourcing

Existing services can be used to create new business processes. The interviewees indicated that the creation of a new business processes by reusing the services often took more than six months, even though SOA using web services helped make them interoperable from a technological point of view. The main problems occurred in the

areas of data and semantics, and they are certainly not of a technological nature. As one interviewee put it “we can create a new interface within a minute”. The problems that did occur had to do with the divisions of costs, service level agreements, changing and updating the information systems and preparing the staff for the change. Often a separate department is created within a service center whenever a new product is created, which is then made responsible for processing that new product, using the available systems and expertise. In short, the major issues did not involve adapting the system, but changing the organization. Simply put, interoperability is hampered more by people, organizations and data structures than it is by technology. Even the enterprise architecture can help to some extent, although is not sufficient to create interoperability.

Technological developments made service-orientation and the associated new organizational forms possible, allowing a shift towards greater market control. The SSC and SOE can be viewed as falling somewhere between complete hierarchy and market control. In the theoretical background, factors influencing the different sourcing options are presented. When applied to the findings of our case study, these factors can be used to explain the shift from the traditional structures to SOE, as depicted in Figure 4. The questions remains of the traditional organization are a complete hierarchical control and the retained SOE is complete market control. In our case study, this is not the case, and as a result, we did position all the stages between complete in-house and outsourcing arrangements.

The Internet enables connectivity among systems and organizations, while SOAs allow systems to become interoperable, which on the one hand reduces the coordination costs, but which also reduces the asset specificity of tasks by standardization, making it harder to use technology to customize the tasks. Using technology rationalizes product descriptions are rationalized and makes dealing with different customer needs less demanding. Finally, the operational and opportunism-related risks can be reduced by an effective orchestration of the relationship with the service providers.

Ideally speaking, the variables underpinning the principal-agent theory will remain the same for all sourcing options. In our case study, there is an increasing trend to tighten and formalize internal relationships in terms of accountability, and an opposite trend to introduce more partnership dimensions in terms of the arrangements with external suppliers. There is a learning process that involves identifying the best elements of in-house production and outsourcing, resulting in a SOE where the question whether service modules are delivered internally or externally becomes irrelevant.

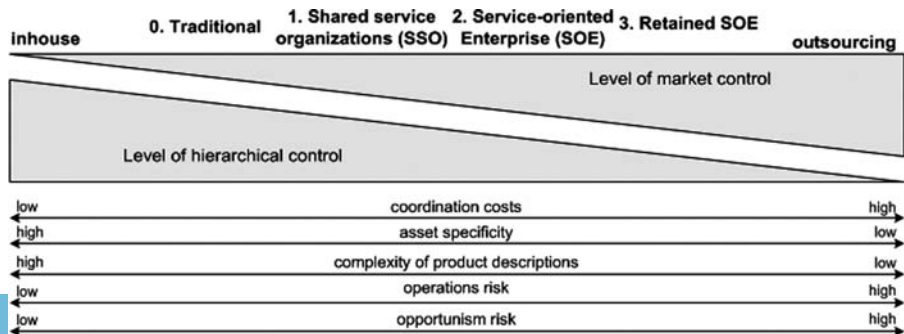


Figure 4. Control and sourcing options

5.3 Critical management issues

During the quest towards the SOE, many hurdles needed to be taken and a large number of critical management issues are addressed. Inspired by the literature (Erl, 2007; Khoshafian, 2006; Krafzig *et al.*, 2004; McGovern *et al.*, 2006; Woods and Mattern, 2006), a number of critical management issues concerning modularization and sourcing are identified. The taxonomy suggested by Baldwin *et al.* (2001) is used to elaborate further on the critical management issues with regard to the introduction and implementation of the SOE. The four categories are (1) strategic and organizational, (2) political, (3) technical, and (4) economic, and the issues involved are presented in Table I.

5.3.1 Strategic and organizational SOE issues. When the company is moved towards a SOE, of crucial importance is the business and IT strategy involving the implementation of a business architecture that describes and standardizes the modular business components, determines rules on how to orchestrate them into business processes and delegates responsibilities to the managers involved in the business processes. In our case study, although the modules seemed to emerge as a result of negotiation processes and evolve over time, they are part of a conscious strategy to become a SOE.

In our case study, there is clear focus and well-defined goals at the introducing of the SSC and SOE and concentrating on feasible achievement and reasonable time frames, which contributed to the chances of success according to the interviewees. There are many obstacles that need to be overcome, and having a clear vision makes that process easier. Moreover, starting small and developing gradually makes it possible to develop a strong business case. This helped to ensure the early visibility of benefits.

Strategic and organizational SOE issues

- Clear business and IT strategy
- Sufficient focus
- Redesign and reorganization of activities and orchestration of organizational service flow
- Identification of services and levels of customization, drawing up SLAs and continuous improvement
- New governance mechanisms and organizational structure
- New roles and responsibilities
- Business-IT collaboration
- Service value management

Political SOE issues

- Change management involving all stakeholders
- Agreement on interface standards and the use of terms
- Rationalization of application portfolio
- Creating a shared culture and ensure visibility
- Enforcement of the use of service centers and avoidance of conflicts
- Education, communication and training

Technical SOE issues

- Supporting IT architecture in terms of Service Oriented Architectures (SOA) and standards
- Integration and interfaces between modular services
- Develop for reuse
- Security needs to remain visible
- Retain expertise in various areas
- Risk of outphasing applications
- Increased design complexity
- Avoiding duplication of activities and services
- Incomplete technical standards

Economical SOE issues

- Sufficient budget (for reuse and innovation)
- Compensate overhead
- Funding model
- Geographical concentration of departments
- Cost predictability, as funding might be on pay per use

Table I.
Critical management
issues of the SOE

A new governance structure is required by introducing new resources, roles, processes, and even new groups or departments. The service centers are semi-autonomous and can have revenue models based on pay-per-use. Not recognizing the need for new governance mechanisms may easily result in failure (Janssen and Joha, 2007). Ultimately, when these issues are under control and the environment itself has successfully adapted to the required changes, the many benefits associated with service-orientation can be reaped. However, the process of moving toward this new governance model can challenge traditional approaches and may require time, money and a great deal of patience (Erl, 2007).

The architecture of the company in our case study emerged as a result of the implementation of individual projects. It is this, the *de facto* architecture, rather than a conceptual architecture made on the drawing board, that makes up the SOE. This means that understanding the organizational capabilities needed to carry out business strategies, and understanding this emergent architecture is of paramount importance. Dynamic capabilities help a firm in adjusting its resource mix, making it possible to maintain the sustainability of the organization. Teece *et al.* (1997) have suggested a dynamic capabilities view, also known as dynamic resources, which they describe as “the firm’s ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments”. They argue that sustainability lies with a firm’s managerial and organizational processes, which are shaped by the firm’s asset position (resources) and the available paths. The results of our case study suggest that the design of SOEs should take this dynamic capabilities view into account. Capabilities are needed to accomplish the required transformation and also to create new business processes by using the service centers in place.

5.3.2 Technical SOE issues. Design standards are a prerequisite, in that they anticipate potential future problems by making several decisions for architects and developers ahead of time, thereby increasing the consistency and compatibility of solution designs. Their use is required to realize the successful propagation of service-orientation and to ensure interoperability. In our case study, the service center had to provide a standardized set of services needed to process claims. This reduced diversity, avoided duplication of efforts and ultimately resulted in cost reductions. In addition, bundling the service resulted in economies of scale and scope.

Although creating these standards can be a straightforward process, incorporating them into a non-standardized IT environment that is already set in its ways can be difficult. The use of design standards introduced a need to enforce their compliance, which turned out to be a policing role that met with considerable resistance. Additionally, architects and developers sometimes felt that design standards inhibited their creativity and ability to innovate.

A preferred strategy in the delivery of IT-services is to begin by conceptualizing a service inventory by defining a blueprint of all planned services, as well as their relationships, interfaces, boundaries, and individual service models. The SOE can also introduce an increased level of complexity for the architecture as well as individual service designs (Erl, 2007). In a technological sense, this can be addressed by a combination of sound technological architecture design, modern vendor runtime platform technology, and the consistent application of service-orientation design principles (Erl, 2007). Although, in our case study, there is a shared vision, at the beginning there is no detailed business case or architecture. Projects are only initiated when they are expected to contribute to the vision.

5.3.3 Political SOE issues. Change management is of key political importance in enabling a business transformation on this scale. The championship of the executive manager is an important factor in realizing the large-scale standardization and the SOE. The acceptance of design standards requires negotiations and compromises. Moreover, before transformation takes place, the purchasing and sourcing on the part of the department involved in the new service center should be halted. Because new investments are depreciated over many years, they can block the introduction of service centers, possibly preventing standardization on one application.

The interviewees indicated that there is a tendency to bypass service centers that performed poorly in favor of other service centers. Rather than reusing the services, there are several occasions when service centers budgeted investments to build a new service. Although, in our case study, the board blocked the bypassing of certain service centers to stimulate reuse, it proved difficult to convince people that they should use service centers that performed poorly. Managing the reuse of services and avoiding the development of too many services remains a critical aspect.

5.3.4 Economical SOE issues. Having a budget and the appropriate resources is a precondition for the organizational transformation to happen. The budget is needed to finance one or more initial projects that can act as pilot projects, to introduce the SOE incrementally and to overcome resistance. In our case study, the pilot projects had a considerable impact on the perceived success of the overall SOE implementation. As a result, they should be chosen with the greatest care. One of the interviewees indicated that starting with a failure might have blocked the whole process. It is also crucial for projects to have budget to meet the challenges inherent in the use of new technologies, methodologies and processes.

In addition, budget was needed to compensate for initial overheads involved in the transformation towards a SOE. The overheads are caused by different factors, for instance, employees having to familiarize themselves with new standards and processes, defining new standards, and changing business processes. More important, however, is the initial overhead caused by efforts required to increase reusability. Instead of merely focusing on immediate requirements, potential future applications must be taken into account to ensure that the services being implemented are reusable. This required that budget and human resources are reserved to make this work.

6. Conclusions and recommendations

SOAs enable service-orientation at the business level, resulting in new organizational forms and a shift away from hierarchy towards more market control. The organization we investigated, initiated the SOE by bringing together similar activities in shared service centers and in this way becoming a shared service organization. The SOE is created by introducing a management and coordination layer and by organizing the complete organization around shared service centers. In this regard, the SOE can be viewed as consisting of shared services that can either be provided in-house using a shared service center, or outsourced. Shared service organization and SOE can be viewed as falling somewhere between complete hierarchy and market control. This also implies that in the future greater emphasis will be on the integration and orchestration of services, which means that more research is needed to investigate this type of control.

In our case study, we found that, over time, a variety of types of service centers emerged. Creating service centers is difficult and requires long-term negotiation processes. The SOE under study evolved and emerged over time using an incremental,

staged approach. We found that modularization principles can be based on the type of product, functionality, expertise and information systems. There may also be other principles if other case studies are investigated. The resulting organization is influenced by path dependencies, political struggles, by other power-related and critical management issues. More research is necessary regarding modularization principles and the associated benefits, drawbacks and risks.

The main critical management issues in the transformation towards the SOE are a carefully executed strategy, the redesign and reorganization of activities and roles, the standardization of processes, applications and the underlying IT architecture and managing the transformation by involving all stakeholders. Realizing a SOE is not easy, as it requires major changes in organizational arrangements, coordination mechanisms, new processes, standards and allocation of responsibilities. Although, the premise is that this can result in a highly normalized, standardized and streamlined architecture, it can also introduce an increased level of complexity, both with regard to the architecture and individual service designs. It is, therefore, very important that critical management issues within the strategic, organizational, political, technological and economic dimensions are addressed in a systematic and structured way when moving a company towards a shared service organization or SOE.

Every service can be outsourced completely or in part. In our case study, even SSOs outsourced parts of their activities. It is still unclear how the modules and sourcing options are related and future research is needed. In this kind of organizations, a core competency will be the bundling and orchestration of services, either provided in-house or outsourced, into business processes, and more research into this area of orchestration aspects will be necessary. Moreover, further research should investigate the benefits, drawbacks and risks of the SSOs and the SOE, and ultimately the findings need to be generalized by conducting comparative case studies.

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