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Exploring Determinants Influencing a Service-Oriented Enterprise Strategy: An Executive Management View

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Abstract. Due to the convergence of rapid business developments and digitization challenges firms need to become more agile. A service-oriented enterprise (SOE) strategy is an approach that decomposes an enterprise into business services that are modular, accessible, and interoperable, in which parts can be provided in-house, or outsourced to the market. The SOE concept has mainly been approached from a technological view and little is known about what type of strategic SOE determinants are relevant. A firm's strategy to implement an SOE requires top management support. Therefore, insights at executive level are a prerequisite to identify strategic business directions. We conducted a literature review and a qualitative case study amongst eleven firms at executive level in various industries. Business services, business processes, and enabling technology were found in the literature as key determinants influencing a firm's SOE strategy. Subsequently, the interviews at executive level identified that organizational readiness, knowledge and skills, and governance also affect the SOE strategy of firms. We suggest that a holistic view is required to study the complexity of an SOE. By using an executive view we contribute to IS and business literature as strategic SOE determinants become more explicit.

Keywords: Service-oriented enterprise · Strategic decision-making · Business services · Business processes · Enabling technology

1 Introduction

Technology researchers paid attention to adopting a service-orientation enterprise (SOE) to improve business services in the period 2005 up to 2009. An SOE enabled the building of new products, end-user services, or business processes by composing them out of readily available and reusable building blocks which can be accessed using services [1–4]. These building blocks have an interface to initiate the execution of services. Large granular services, often involving humans and software, are often called *business services*. [5] argue that 'service-orientation is emerging at multiple organizational levels in business, and it leverages technology in response to the growing need for greater business integration, flexibility and agility', p. 356. Research interest to study the concept of service-orientation decreased after 2009 as the concepts of adaptability and agility were studied as a serious alternative to respond to changes

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easily [6, 7]. However, there is a renewed market interest in SOE as the convergence of rapid business developments and digitization challenges reflect firms' need to seek various approaches and become more agile [8, 9]. For example, [10] transformed their organization into an SOE to cater for market changes, and improve business value in which business services are managed from an integrated perspective. By means of establishing various types of shared business services (e.g. HR, Finance & Procurement, Business Operations) and supported by technology they are able to manage business processes globally, standardize scale and simplify work. As changes in, for instance, Finance and Procurement services occur, corresponding services (e.g. Information Technology) may be affected too, as a result of which an integrated change approach is required. As a result of an integrated management approach, [10] is able to accelerate business value and reduce cost that is reinvested in business areas.

By adopting an SOE, firms create business services that are modular, accessible and interoperable [11]. This enables them to reuse existing services and assemble them into new business services. As a result, firms are more able to become agile, respond to changing business circumstances, and, as such, decrease business development times, improve service quality, and reduce development cost. An SOE can be characterized as a set of cooperating business services that are loosely coupled and supported by dynamic business processes and applications that span organizations and multiple information systems [1]. Yet, little is known about *what* types of strategic SOE determinants are relevant, and subsequently, influence the implementation of an SOE strategy. Moreover, we may assume that a firm's strategy to implement an SOE requires top management support. Therefore, insights at executive level are a prerequisite. Given this void in research, we argue that a holistic approach is required to identify and analyze key determinants in the context of the implementation of a firm's SOE strategy. As literature is in its infancy we combine a literature review with empirical research by conducting interviews at the executive level. The leading research questions were:

- What SOE determinants are identified based on a literature review?
- What SOE determinants are identified at firms' executive level?

To address these questions an exploratory approach was conducted, consisting of a literature review and interviews conducted at executive level. In particular, we selected eleven firms in various industries. Firms deciding to adopt an SOE are studied by investigating their SOE strategy and corresponding determinants. By using an executive view we contribute to IS literature as strategic determinants become more explicit. This paper is organized as follows. In Sect. 2 the research is positioned vis-à-vis existing literature in the field of SOEs and next, the concepts business services, business processes, and enabling technology are presented. Section 3 explains the research approach. Next, the findings of our qualitative analysis are described in detail. Finally, our conclusions and limitations are listed in Sect. 5.

2 Literature Background

2.1 Service-Oriented Enterprise

The concept of an SOE gained momentum as the next generation of loosely coupled enterprise in which examples are recognized amongst various industries including computer industry, telecommunications, aircraft, and automotive industry [12–14] have defined an SOE as 'an enterprise that implements and exposes its business processes through a service-oriented architecture (SOA), and that provides frameworks for managing its business processes across a SOA landscape, p. 347''. Literature shows that firms' aim to become an SOE is based on their business strategy. Strategic business drivers are, for instance, new service development [15], orchestrating new sources of value creation [16], and an increase enterprise agility [17]. In an effort to adapt to dynamic circumstances, today, firms deconstruct their enterprises and business processes into multiple business components that makes it more easy for businesses to focus on their core capabilities. Such business components can be characterized by a collection of activities or tasks in which resources produce services.

The decomposition of enterprises makes complexity manageable and, as such, services can be integrated and disintegrated. In this way business services can be provided by the own organization or by the market. As there are many business services, this results in sourcing strategies in which multiple modes of sourcing decisions are managed simultaneously [18]. Consequently, some sources, often related to the core competences, are provided in-house, whereas more commoditized services are outsourced. Examples include car manufacturers [19], external distribution channels [20], and IT process integration capabilities [21].

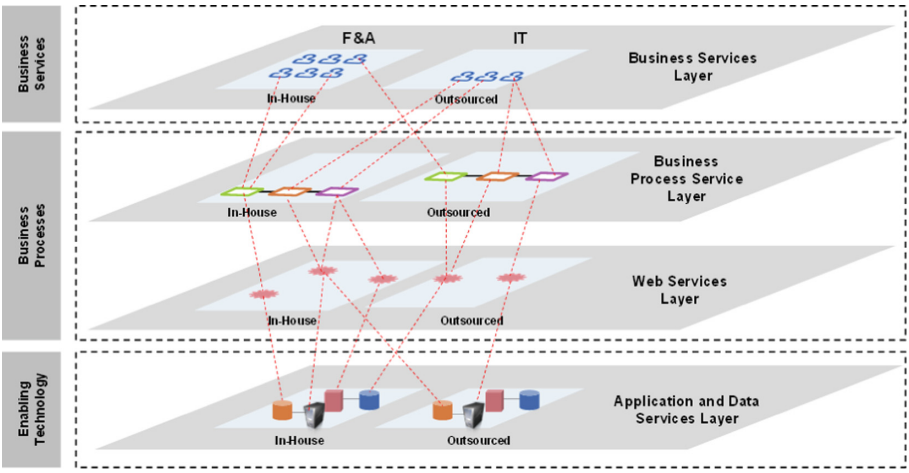

Fig. 1. Explaining a service-oriented enterprise by using layers

[22] points out that in order to become an SOE, firms must dismantle traditional stovepipes and design and implement modular services that can be reused dynamically. The authors argue that from an architectural perspective an SOE consists of various layers that comprise business services, business processes and IT infrastructure. Moving downward, business services, which reflect the first layer provide a firm essential support to produce and sell their products and goods. In turn, business services are supported by business processes, which form the second layer. Next, web services are used to establish relationships between business processes and enabling technology. The latter is seen as the third layer that consists of applications, data and IT infrastructure [23, 24]. The relationship between business services, business processes, and enabling technology is shown in Fig. 1.

The figure shows that services can be divided into business services and web services. Business services provide a business functionality and can be executed by software and/or humans, whereas web services are software-based services. At each layer there are services on different levels of granularity that can be combined to create new business services. By unbundling business services (e.g. F&A, IT) into loosely coupled business service processes, web services form the connection towards the application and data services layer. At each aggregated level (e.g. business services, business processes, enabling technology) a firm may decide to keep these tasks in-house or outsource these to the market.

2.2 Business Services

Previous studies show that a firm's SOE strategy is influenced by their business services [1, 22]. To focus on their core business competences business services are perceived as a federation of capabilities that collaborate with other business services in an ecosystem [1]. To improve effectiveness firms decompose their enterprise and corresponding business services into smaller autonomous business components that may interact with other business components. To manage complexity, the interaction between business components can be managed by means of services. Literature on services distinguishes varies types of services, ranging from business, technical, and software [5] to web services [25]. Consequently, component-based business services increase a firm's agility to cater for market and internal changes. In line with a firm's strategic business drivers to establish an SOE an analysis may reveal if business capabilities and related component-based services can be developed in-house or outsourced to the market. Prior research of [26] shows that firms can decide which SOE related layers, as shown in Fig. 1, can be kept in-house or outsourced to the market. Literature reveals various examples of business services, both organized in-house, by means of shared services, or outsourced services, such as Finance and Accounting, HR, Procurement and IT [27, 28]. To support component-based business services, enterprise information systems (EIS) must be loosely coupled to create dynamic business processes [29] and, therefore, form a prerequisite for a strategic sourcing decision. Tightly coupled business services and EIS, on the other hand, may hinder the degree of SOE effectiveness.

2.3 Business Processes

Within traditional enterprises process flows are often sequential which may hinder reacting to internal and external changes adequately. Applying a service-orientation approach business processes are managed across a firm's organization that requires breaking down siloed business processes into modular independent services [5] that support dynamic processes. Considering dynamic processes, each subsequent process step may be based on the full or partial results of previous steps. This is in contrast with traditional processes that are designed from a predefined static sequence. From the perspective of a single service orchestration is concerned with the composition of services. To cater for changing circumstances business processes as applied within an SOE need to be orchestrated dynamically by means of choreographies, in which business processes are integrated to create end-to-end business processes. [13] argues that an SOE contains business-component-based, standardized process flows to encourage reusability [2]. To do so, a dynamic process design needs to build upon modular services that are supported by Enterprise Information Systems (EIS) that comprise applications, data, and infrastructure.

2.4 Enabling Technology

Literature shows that business processes are supported by enabling technology [2, 23, 24]. More specifically, EIS are used, based on the assumption that seamless integration of information is provided such as 'financial and accounting information, human resource information, supply chain information, and customer information' [30, p. 121]. [31] argue that 'EIS refer to organizational implementations of commercial software packages that enable the integration of transaction-oriented data and business processes throughout an organization (p. 152)'. An EIS is essential to respond to business and IT developments in IT-driven firms such as financial services and telecommunications [32]. As a result of changing firm and vendor relationships, supporting EIS need to be modified and enhanced [17]. This is related to the concept of modularization that can be applied to information systems as well as on an organizational level [33]. When business services are modularized the degree of complexity to manage these services is decreased. Moreover, EIS that support various loosely coupled modules and thus business services can be sourced both internally or to vendors. Consequently, the option to source a firm's EIS increases their level of adaptability, which, in turn, contributes to the manageability of an SOE. The concept of modularization supports organizations to interconnect their enterprise systems modules with other organizations modules. Interoperability across platforms is ensured as long as the interfaces between modules remain the same. This encourages seamless integration of information provided by various business services like finance and accounting, human resource, and procurement [30]. Thus modularized EIS can be configured to accommodate different business processes.

3 Research Method

The first phase in this research was based on a review of existing literature in the field of SOEs. On the one hand, the literature background focused on determinants that affect the implementation of a firm's SOE strategy. On the other hand, we may find indications for perceived determinants that can be studied specifically. The literature background provided necessary input for the second phase by conducting interviews and constructing a questionnaire that has been used to gather qualitative data in order to identify SOE determinants. Our qualitative method thus yielded an exploratory research [34]. This research design enabled the researchers to explore SOE determinants in a natural setting [35]. To acquire more insight in SOE determinants, it is necessary to consider different industries. In particular we have analyzed eleven firms in eight different industries.

We used two main criteria to select appropriate firms, namely: (A) the size of a firm, and (B) geography. Although there are differences between these eleven firms, they were selected due to similarities with regard to an SOE strategy. All of the selected firms are considered to be large companies and market leaders in their specific industry, operating in an intense and dynamic environment resulting in a need to be agile to cater for changing market circumstances and internal changes. This is related to the first criterion. The firms have at least two years of SOE experience and some of them are involved in a second generation SOE environment. Their geographical scope is based on operating on at least three geographies. The basic assumption is that business services must be agile by nature to provide these services in various countries. This is related to the second criterion.

3.1 Data Collection

Data was gathered between January 2015 and May 2016, and drew on various sources. These ranged from a literature review to a series of semi-structured interviews, both formal face-to-face and informal telephone interviews. First, we conducted eleven (11) in-depth interviews in total at executive level, as we want to investigate if an SOE strategy requires top management support. As the interviews were confidential, we anonymized the companies. All interviewed participants were executives or senior managers and had been engaged in establishing an SOE strategy. A semi-structured interview protocol was designed to gather data regarding the key constructs. Interviews varied from 60 min to 120 min in duration while some interviews were replicated for clarification purposes. Field notes were used during informal meetings to collect relevant background information. Second, a straightforward questionnaire was used to collect SOE-related information in which the key concepts were divided from the literature, namely: business services, business processes, and enabling technology. In addition, more generic client information was collected to create a better understanding of the sourcing context: strategic drivers, geographical coverage, and sourcing modes. The questionnaire was accompanied by a short cover letter that explained the purpose of this study. A short description of the questionnaire is provided in Appendix A.

Moreover, considering the need for clarity, and preventing the terminology from being interpreted differently, a glossary of definitions was included. By using multiple data sources we were able to increase the reliability of the data [36]. In this way we apply a cross-section between the firms to gain a richer insight in SOE determinants and to contribute to creating construct validity.

3.2 Data Analysis

The results of the case studies were written down in a case study report and sent to the participants to be validated. Interview data was stored in a case study data base. We analyzed the data in several systematic steps to ensure that the process is replicable. First, we studied context related information as well as construct data by grouping the statements (i.e. codes) into the construct categories. In doing so, we aim to create a basic understanding if determinants affect an SOE strategy. Second, a thorough analysis of the interview transcripts and field notes was done. Some data was verified by follow-up phone calls and emails. We consulted multiple sources of evidence, and strived for confirmation by triangulation of data. We used techniques as coding and clustering [34], sensitizing concepts and data displays [35]. We followed Miles and Huberman's advice to split the coding amongst two researchers, each coding the interview notes [35, p 64]. Then, we discussed the findings and clarified disagreements. As a result of the coding process we were able to identify links between concepts, so that we could fathom the data [37]. Patterns were gradually identified, which resulted in direct and indirect links between the constructs. Based on the analysis we were able to draw conclusions on how the constructs affected a firm's SOE strategy, and identified additional constructs.

4 Case Study Findings

4.1 Background Information

The questionnaire data revealed that the size of the firms ranges from 20,000 up to more than 100,000 employees, while the geography of the firms under study shows three dominant regions: North America, Europe and Asia Pacific. The SOE start of the firms varies from 2006 to 2014, and, by excluding the two firms that started in 2014, the vast majority of firms have a significant SOE experience. With regard to the headquarters location of the studied firms the questionnaire revealed that five out of eleven firms are located in the USA. SOE management reports to various reporting lines while the data does not indicate a specific relationship between the reporting line and sector, headquarters, size of the firm, start of the SOE, and geography. Moreover, the findings indicate that each firm allocates dedicated resources (e.g. SOE number of employees) to manage business services and related processes. Relevant background information is shown in Table 1.

Table 1. Background case study findings

Firm	Sector	Head quarters	Size of the firm	Responsible SOE manager	Reporting line	Start SOE	SOE geography	SOE number of employees
1	Pharma	USA	50,001 to 100,000	Director	CFO	2009	North America, Europe, Asia Pacific	100 to 500
2	Pharma	Switzerland	100,001 to 250,000	Director	CEO	2014	North America, Europe, Asia Pacific	5,001 to 10,000
3	Pharma	USA	20,001 to 50,000	Director	COO	2014	North America, Europe, South America, Asia Pacific	501 to 1,000
4	Food & Beverages	Mexico	100,001 to 250,000	Vice President	COO	2010	North America, South America	501 to 1,000
5	Diversified Conglomerate	Denmark	50,001 to 100,000	Director	COO	2007	Europe, Asia Pacific	100 to 500
6	Consumer Products	USA	20,001 to 50,000	Director	CEO	2006	North America, Europe, Asia Pacific	501 to 1,000
7	Food & Beverages	USA	20,001 to 50,000	Director	COO	2008	North America, Europe, South America, Asia Pacific, Middle East & Africa	1,001 to 2,000
8	Technology	USA	100,001 to 250,000	Director	Business Unit director	2006	North America, Europe, South America, Asia Pacific	1,001 to 2,000
9	Energy & Utilities	Norway	20,001 to 50,000	Senior Vice President	CFO	2006	North America, Europe, South America	1,001 to 2,000
10	Energy & Utilities	UK	50,001 to 100,000	Director	COO	2012	North America, Europe, South America, Asia Pacific, Middle East & Africa	1,001 to 2,000
11	Financial Services	Switzerland	50,001 to 100,000	Vice President	CFO	2011	North America, Europe, South America, Asia Pacific, Middle East & Africa	2,001 to 5,000

4.2 SOE Strategy and Business Services

The questionnaire indicates firms' strategic drivers to develop and implement an SOE strategy. Based on our questionnaire eight strategic drivers were assessed by the interviewees on a five-point scale (1 = low, 5 = high) (see Fig. 2). Importantly, the top three drivers indicate process excellence, the ability to scale up or down, and alignment of a firm's operating model. In an attempt to improve process efficiency interviews show that firms adapt their business processes continuously. Business services are often interdependent due to supporting interwoven business processes that need to be orchestrated dynamically. As a result, firms are able to cater for changes (e.g. improve their time-to-market and decrease lead times).

'We experienced that managing business processes is the key to sustain our business services. As multiple colleagues have to engage in performance process-related tasks it's key to decrease process complexity at all time. We strive to increase process performance day by day.' (Source: Director client 6)

Interviewees argue that in order to respond to environmental change effectively, business services are broken down in modular components. By integrating or disintegrating business components firms have the ability to scale up or down, depending on business needs. In doing so, flexible oriented business services contribute to enterprise agility.

'Based on our strategy 25% of F&A services are centralized in shared services centers to achieve standardization and flexibility. Our goal is to scale up to 75% within the three years… we expect that this ambition will lead to a 7% to 10% higher productivity.' (Source: Director client 3)

'As we have to adapt to market changes we have split our supporting processes in sub-processes to speed up time-to-market. Take for example our F&A function, we designed and implemented sub-processes in a modular way of working to support partial F&A activities, such as accounts payable, to align and integrate with other sub-processes easily.' (Source: Vice President client 4)

Moreover, as business services comprise modular components we find that firms have to make a critical decision at a strategic level how to source these business services. The questionnaire shows that all firms under study apply various modes (e.g. in-house and outsourced) of sourcing decisions that are managed simultaneously (see Table 2). This is consistent with prior research of [38] who argue that a firm's choice to select a sourcing mode is affected by the characteristics of a firm, such as their sourcing strategy, degree of risk aversion, internal capabilities, and market attractiveness.

Some firms opted to outsource large parts of specific business services, such as client 8 and 10 for Finance & Accounting and firm 5 for Information Technology. However, with the exception of client 6 and 10, all clients decided to provide data analytics services in-house.

'From a sourcing point of view we apply various models, including in-house, shared services and outsourced services, we have to! You know, it's impossible to acquire and maintain the knowledge and skills to support all our business services by ourselves. Besides that, we also have to be competitive in the market, so outsourcing tasks result in severe cost reductions.' (Source: CFO client 9)

Studying the interview data we find that in applying an SOE strategy executive management perceive organizational readiness to be an essential aspect. As business services are often interwoven and may span multiple functions (e.g. F&A, HR, IT) the complexity to organize and manage services will increase. In particular, sponsorship at executive level is required to create a buy-in from multiple stakeholders who are involved in managing various business services aspects, such as, business performance, change management, and financial goals and budgets. Interviews revealed that due to changing internal and external circumstances the clients under study developed a coherent approach over time to translate their SOE strategy into managerial consequences. Various executives experienced that a lack of stakeholder management may result in resistance that is difficult to overcome.

'The difficulty with business services is that responsibilities and budgets are dispersed amongst departments and geographies. That means that we have to pay a lot of attention to mutually align tasks and create a buy-in from all the stakeholders. This is an ongoing task and if we are not successful in this task, as a global organization we're not ready to provide business services.' (Source: Director client 10)

Fig. 2. Strategic drivers (N = 11)

With regard to organizational readiness we found that business services functions require involvement of the clients' employees in processes. To support procurement services, which are supported by EIS, employees have to exchange information between both services to ensure the availability and performance. As such, we found that from a content perspective the knowledge and skills of business employees are essential to manage and support these services. For example, employees need to have in-depth knowledge of business processes and the skills to operationalize these processes adequately.

'To support business services on a European scale we have to align business processes continuously to adapt to market conditions. As an example, we have appointed business process specialists on a central level to exclude a much process waste as possible. We are only able to integrate business services as we streamline our processes to the max!' (Source: Director client 5)

Table 2. Modes of sourcing decision per business service

Client	Number of SOE functions	Finance & Accounting % outsourced	Information technology % outsourced	Human resources % outsourced	Procurement & supply chain % outsourced	Data analytics % outsourced
1	3	30%	40%		10%	
2	4	30%	60%	20%	10%	
3	2	50%		10%		
4	3	30%		10%	40%	
5	3	10%	80%	80%		
6	5	10%	10%	10%	10%	30%
7	2			10%	10%	
8	2	80%			10%	
9	3	20%	60%	30%		
10	4	80%		40%	40%	100%
11	3	50%		10%	50%	

On an operational level information was exchanged within and between EIS to support business services. We found that EIS employees dispose of technical knowledge to integrate and configure EIS modules as these systems are used to support various business services (e.g. SAP for F&A and HR services). Moreover, both technical and process-related knowledge was exchanged between internal departments and external vendors in case business services are (partially) outsourced to the market.

'Our IT department has to share technical information regarding our functional SAP services with external vendors. As part of our IT infrastructure is outsourced we have to implement our SAP modules for F&A services on the vendor's platform. This requires a lot of technical knowledge from our side (i.e. impact analysis, performance, reporting) to keep services running'. (Source: Director client 2)

4.3 Business Processes

Based on the interviews we can distinguish four types of business processes that are applied by the selected clients to support business services (see Fig. 3). First, business processes can be implemented from a decentralized perspective. In this view an SOE function is performing business services on their own behalf. Second, some clients consolidate business processes tasks from a centralized perspective. As such, processes are managed by a centralized SOE function in which business units can be seen as internal customers.

'On a monthly basis all process owners meet at central level to discuss improvements and KPI's and assess if allocated budgets towards the business units are sufficient.' (Source: Director client 8)

Third, business processes can be consolidated and managed by a regional SOE entity and operated as a business. In this case, a region can be perceived as geographical entities, for instance Europe. Next, we found examples of processes that were

consolidated by a global SOE entity and, similar to a regional SOE entity, managed as a business towards regions. Finally, we identified clients who established business processes from a multifunctional perspective. In this case, business processes are managed across multiple SOE functions with an end-to-end ownership.

'We have to manage a complex set of various interrelated business processes, in particular in the supply chain and F&A domain. As internal responsibilities to manage these processes are fragmented we desperately need overview. That's why we have chosen to appoint global process owners who are responsible to manage and improve the performance of our end-to-end processes.' (Source: Vice President client 4)

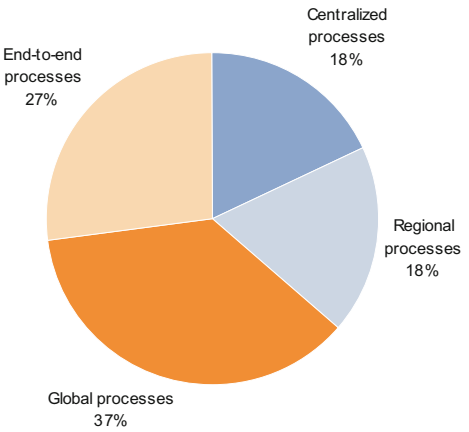

Fig. 3. Type of business processes (N = 11)

Importantly, interviewees argued that independent of the type of implemented business process governance is required to support the processes adequately. This means that clients have to pay more attention to developing governance mechanisms to manage interdependencies, for instance between front end and back end functions. Our findings reveal that clients have to deal with governance aspects, such as mutual tasks, responsibilities, and coordination mechanisms along the line of implemented business processes.

'We have organized the our F&A, HR, Procurement/Supply Chain services by means of bundles. To govern these bundles we have established centers of expertise (CoEs). IT, however, is governed separately based on a federative approach to coordinate the operational delivery of these services on a local level.' (Source: Director client 1)

This requires the existence of a coherent strategic blueprint that describes the position, role, and mandate of each party within the business process. By developing governance mechanisms that include internal and external stakeholders a governance strategy will improve the coordination of business process tasks and a such may overcome potential disputes between the parties involved. Consequently, a governance strategy may span inter-organizational mechanisms as external vendors maybe involved in the provisioning of business services.

4.4 Enabling Technology

The questionnaire data show that all clients use EIS to support their business services. With regard to the type of EIS SAP is applied predominantly, to enable business processes that provide business services in various regions (see Table 3). We find that the EIS, and particularly SAP, is highly modularized (instances), using standard interfaces to support multiple components of business processes.

'We use one SAP platform applying three instances that support in total four business functions, so IT integration is essential. Therefore, our goal is to use standard interfaces as much as possible to support a seamless integration approach.' (Source: Director client 7)

The EIS of the clients under study support at least two and ultimately five business services. Interviewees argued that the use of modularized EIS is essential as business services have to be adapted regularly to cater for changes and the EIS provide the technology to support these adjustments. EIS complexity is influenced by technology issues, such as legacy systems, as well as organizational issues. From a business perspective customer information has to be stored and managed by using information data structures, models and technology, which affects the development of EIS. Thus, interoperability is essential to exchange information and data by means of services and web services supported by modularized technology.

'Our ERP systems are modularized and mutually interconnected to support our processes. We have different modules within F&A and Procure to Pay systems. At the same time IT modules are used to support business functions, both manually and automated. For instance, we have implemented ServiceNow as tooling to support HR services that are interdependent with F&A and P2P.' (Source: Vice President client 11)

In addition, client documentation that was provided illustrated that all clients' EIS are interconnected to vendors' EIS as various business processes are outsourced. Consequently, client architects paid severe attention to develop interoperable systems to manage complexity as technology is provided both in-house and by outsourcing partners.

Table 3. Overview enabling technologies (N = 11)

Client	# of EIS systems deployed	# of EIS instances	EIS solution provider
1	Greater than 10	Greater than 10	SAP
2	Greater than 10	Greater than 10	SAP
3	1	1	SAP
4	1	4–5	Oracle
5	1	1	Oracle
6	1	1	SAP
7	1	2–3	SAP
8	2–3	2–3	SAP
9	1	1	SAP
10	1	1	SAP
11	6–10	6–10	SAP

5 Discussion

5.1 SOE Strategy and Business Services

Our research provides support for the existence of an SOE strategy and related business services. Importantly, the firms' SOE strategy was driven by various business drivers, in which process excellence was recognized to be the most important factor. We find that the firms under study modularized their business services into business components to manage complexity [39]. To manage the interplay between different business services an organizational entity was established to keep oversight. Although employees that form a part of this SOE organizational entity are geographically dispersed, business services are centrally managed and governed (e.g. roles and responsibilities). This finding provide insights that a holistic approach is applied to avoid interdependence issues between business services. [40], who studied business services that are provided in-house, underpins the importance of organizational design of business services. The authors argue that organizational design is a challenge as various design aspects are interrelated (i.e. strategy, collaborative partnerships, shared services processes, policy and regulation). Moreover, firms apply various sourcing modes as our findings demonstrate that all business services to some degree are outsourced to the market. Consequently, the way in which business services are established influence a firm's SOE strategy. We argue that firms develop an SOE strategy that takes modularized business services into account. Thus, an SOE strategy will include strategic decision-making in bundling business services and related sourcing decisions [3]. As such, an SOE strategy contributes to enterprise agility, in which diverse portfolios of strategic sourcing options can be managed to respond to rapid environmental change.

5.2 Business Processes

Interviews revealed that to manage business processes effectively, there is a dependency on the degree in which business services are integrated. We found that to support a firm's aim to respond to changes in an agile way, business services are integrated (e.g. Finance and Accounting and IT) and as a result, business processes are broken down into modular independent services. The latter is consistent with findings of [13] who argue that dynamic processes should be modularized to promote reusability. Based on our findings, business processes are perceived as complex as they span various business services as well as multiples countries. This finding is also reflected by the most ranked business driver by the firms to strengthen their SOE, namely: 'drive process excellence'. The more business processes are established to support both front and back office functions, the higher the degree to manage process interdependencies. However, we found that all firms used a process model to support business services tasks. These process models were predominantly based on supporting EIS (predefined processes and workflows). In addition, SOE employees had the mandate to adapt business processes if necessary to cater to changing circumstances. This finding relate to loosely framed business processes in which firms use a priori defined process model while allowing the execution of the process to deviate from the model [41]. Our findings show that business processes range from central to end-to-end type of configurations. Thus, service-oriented designed

business services are needed to establish relationships between dynamic business processes and enabling technology.

5.3 Enabling Technology

The case studies underpin the relevance of enabling technology as a platform to support business processes and corresponding business services. We find that dependent of the scope of enterprises, various business services are increasingly integrated with each other. To a certain extent EIS can integrate data, functions, and processes to support business services functionality. Our findings demonstrate that the firms' EIS are highly modularized (e.g. multiple instances) and interoperable with vendors' EIS. Thus data can be exchanged between firms and their vendors by means of web services and subsequently, reused. The fact that firms EIS are based on loosely coupled modules, implies that the degree of business services complexity can be decreased and may contribute to various sourcing modes. In doing so, business services can be more easily adjusted to respond to endogenous developments [17]. EIS critique in literature argues that large organizations often lead to integration struggles as the degree of interoperability and modularization between EIS is limited [11]. Consequently, business services data is distributed amongst various EIS [42], which is considered as a constraint for business-IT alignment [13].

5.4 Governance

As firms may apply various sourcing modes, in which business services are partially provided in-house and partially outsourced, the degree of complexity to govern these modes will increase. Our findings demonstrate that the firms' SOE organizational entity, which can be seen as a center of expertise, is responsible to develop and establish strategic policies to govern business services holistically. This is related to both business services and supporting business processes. As a result, governance mechanisms were implemented to govern interdependencies. Examples we found concern roles, responsibilities and mandates of senior management to manage business services in practice, which are monitored by the firms' SOE organizational entity. This is consistent with a previous study of [43] that demonstrated that large firms require coordination capabilities when blended modes of delivery are used with regard to business services. On the other hand, we found that operational business services and processes are governed at a decentralized level to cater for changes effectively. As all firms under study apply in-house as well as outsourced sourcing modes, at operational level governance is needed to quickly handle vendors issues. A lack, however, of governance attention may result in strategic SOE issues, such as goal conflicts and goal misalignment [44]. Therefore, both formal (SLAs, KPIs) and relational (trust, commitment) governance include mechanisms to limit the degree of governance issues [45].

5.5 Organizational Readiness

Interviews with the firms' representatives revealed that it is essential to align managerial goals and objectives to manage business services and achieve organizational readiness. As the firms' organization structures are based on business silos (e.g. front,

mid and back office), leading senior management per silo is responsible for tactical and operational services. To support these services, tactical strategies on business processes, financial management, and employee roles are formalized and established. Literature shows that organizational readiness is related to both process formalization [46], and IT readiness [47] and as such, is perceived as an important factor that contributes to success. To create a coherent approach on managing business services, however, we found that change management is required to set uniform goals and align fragmented managerial silo-oriented approaches. This finding relates to research of [48] who argues that organizational readiness relates to a firm's transition management capability that strives to effectively integrate business services. Importantly, our findings suggest that the determinant organizational readiness relate to [3] strategic management and organizational issue of 'Redesign and reorganization of activities and orchestration of organizational service flow, p. 45'. Firm's attention and effort to prepare their organization and create a buy-in at management level, and as such become organizationally ready, may overcome this organizational management issue.

5.6 Knowledge and Skills

The business services under study are interwoven which implies that employees have to exchange information continuously. In doing so, employees require in-depth business process knowledge and skills to deal with interdependences as business services span multiple departments. Beyond processes, management and employees need profound business services knowledge and skills to achieve business performance and solve operational issues. This is supported by [49] as knowledge-based business activities have become an increasingly essential component in developing a firm's business strategy. Additionally, firms require specific capabilities, knowledge and skills (e.g. relationship management) as business services are established in-house and provided by vendors. Therefore, firms knowledge and skills is created and transferred within an organizational context and can be divided into firm specific (SOE organizational entity), and general (e.g. departments) knowledge [50]. An SOE strategy, however, is influenced by the ability and willingness of managers and employees of a firm to communicate and transform knowledge on a day-to-day basis [51]. Hence, firms should invest in building knowledge capital to support the exchange of information [52]. We argue that firms that invest in developing specific knowledge and skills are more able to manage operational performance of business services and EIS.

5.7 Summary

Based on the literature background three SOE determinants can be identified: business services, business processes, and enabling technology. The interviews at executive level show three additional determinants, namely: governance, organizational readiness, and knowledge and skills. Our study suggests that executives and SOE managers have to collaborate to create a coherent SOE strategy as business services span multiple departments and changes in one determinant may affect another. For instance, a lack of in-depth knowledge and skills on business services and supporting governance mechanisms may influence the implementation of an SOE strategy negatively. Hence, firms need to

establish collaborative processes to cater for changes dynamically. Taking various sourcing modes of business services into account, changes may result in renewed make-or-buy decisions. Moreover, our findings show that firms establish a dedicated SOE entity to manage business services from an integrated perspective. This mechanism may overcome business-IT alignment issues as addressed by [13] as interdependencies between business services, and their impact on the organization, can be managed adequately. Based on the literature review and interviews at executive level we summarize our findings with regard to SOE determinants (see Table 4).

Table 4. Overview influencing SOE determinants

Influencing SOE determinant	Findings based on	Related authors
SOE strategy	Literature	Fremantle (2002), Demirkan and Goul (2006), Vitharana et al. (2007), Chang et al. (2011)
Business services	Literature	Arsanjani (2002), Janssen and Joha (2008)
Business processes	Literature	Fremantle (2002), Cherbakov et al. (2005), Demirkan and Goul (2006), Chang et al. (2011)
Enabling technology	Literature	Fremantle (2002), Demirkan and Goul (2006), Demirkan et al. (2008), Vitharana et al. (2007), Esteves and Pastor (2001), Cherbakov et al. (2005), Chang et al. (2011)
Governance	Empirical	Malone and Crowston (1994), Weill and Ross (2004), Plugge et al. (2013), Huber et al. (2014)
Organizational readiness	Empirical	Ein-Dor and Segev (1978), Janssen and Joha (2008), Chang et al. (2011)
Knowledge and skills	Empirical	Castanias and Helfat (2001), Orlikowski (2002), Rai et al. (2012)

6 Conclusions and Directions for Further Research

In today's rapid changing environment firms are seeking new ways to become more agile to respond to changes adequately. Given the scarce attention to identify SOE determinants this discussion has sought to assist both researchers and practitioners. Based on a literature background we identified three key determinants that implies that an SOE strategy is dependent on the type of business services used, corresponding business processes, and enabling technology. Empirical research shows additional SOE determinants that relate to governance, organizational readiness, and available knowledge and skills. Our findings reveal that a deep understanding of SOE determinants is needed, and they might be dependent on the context in which they are established.

[3] identified that a lack of a clear business and IT strategy and sufficient focus cause strategic issues. Our findings that a more coherent approach is required to manage the identified SOE determinants may explain these strategic SOE issues and by implementing them develop a strategy to overcome these issues. This is our first contribution. When addressing the context of various sourcing modes (e.g. in-house, outsourced), we may conclude that the SOE determinants governance and knowledge and skills becomes

even more important as some business services are provided hierarchally (make), while others operate on arms-lengths (buy). As the boundaries between internal and external sourcing modes may shift regularly, a more network type of organization is used. We argue that clients have to consider both contractual and relational governance to access in-depth knowledge and skills, which may be hindered as the goals of internal and external parties may differ. Therefore, our second contribution relates to practitioners as they become aware of the impact of SOE determinants in their firm.

A limitation is imposed by the limited number of executive management interviews. In future research, a more extensive survey among multiple firms and participants will help us to generalize the results. Another limitation is that SOE determinants are only studied on a generic level. More detailed distinctions between the degree in which business services are provided in-house or outsourced are not made. Research into determinants influencing the sourcing strategy of a firm is needed. In particular, under which conditions are business services provided in-house or outsourced? Additional aspects that can be considered include a firm's ability to manage vendors and their maturity in managing the relationship (e.g. IT governance). Future research may examine these effects.

Appendix A: Short Description of the Questionnaire

General Information			
Participant Name:	<Insert Name Here>	**Company Name:**	<Insert Name Here>
Participant eMail:	<Insert eMail Here>	**Total number of employees in your company**	<Insert number Here>
Participant Title:	<Insert Title Here>	**Industry:**	<Insert type Here>
Participant Area of Responsibility:	<Insert Responsibility Here>	***If Other Please Specify***	<Specify Here>
Year Started Service-Oriented Enterprise	<Insert Year Here>	**Third Party / Service provider Organization Headcount**	<Insert number Here>
Strategic Value Drivers	Drive Process Excellence	<Insert Yes/No Here>	
	Unlock the Power of Data & Analytics	<Insert Yes/No Here>	
	Mitigate Overall Business Risk & Ensure Compliance	<Insert Yes/No Here>	
	Enhance Sophistication & Collaboration	<Insert Yes/No Here>	
	Achieve Excellence & Consistency in Customer Experience	<Insert Yes/No Here>	
	Increase Effectiveness & Ability to Scale	<Insert Yes/No Here>	
	Build Internal Repository of High Quality Talent	<Insert Yes/No Here>	
	Drive Innovation within the Organization	<Insert Yes/No Here>	
Geographical coverage	North America	<Insert Yes/No Here>	
	South America	<Insert Yes/No Here>	
	Europe	<Insert Yes/No Here>	
	Asia - Pacific	<Insert Yes/No Here>	
	Middle East and Africa	<Insert Yes/No Here>	
Business processes	Decentralized processes	<Insert Yes/No Here>	
	Centralized processes	<Insert Yes/No Here>	
	Business services processes (regional)	<Insert Yes/No Here>	
	Business services processes (global)	<Insert Yes/No Here>	
	End-to-end management processes	<Insert Yes/No Here>	
Functional coverage	Finance & Accounting	<Insert Yes/No Here>	<Insert degree of outsourcing in % Here>
	Human Resoruces	<Insert Yes/No Here>	<Insert degree of outsourcing in % Here>
	Procurement	<Insert Yes/No Here>	<Insert degree of outsourcing in % Here>
	Supply Chain management	<Insert Yes/No Here>	<Insert degree of outsourcing in % Here>
	Information Technology	<Insert Yes/No Here>	<Insert degree of outsourcing in % Here>
	Data analytics	<Insert Yes/No Here>	<Insert degree of outsourcing in % Here>
	Master Data management	<Insert Yes/No Here>	<Insert degree of outsourcing in % Here>
	Manufacturing and Operations	<Insert Yes/No Here>	<Insert degree of outsourcing in % Here>
	Customer Care	<Insert Yes/No Here>	<Insert degree of outsourcing in % Here>
Enabling Technology	Number of ERP software systems	<Insert number Here>	
	Number of ERP system instance(s)	<Insert number Here>	
	Type of ERP system	<Insert type Here>	

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