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A THEORETICAL EXPLORATION OF THE RELATIONSHIP BETWEEN OUTSOURCING AND BUSINESS/ICT ALIGNMENT

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Abstract

In this paper we examine the likely impact of two different outsourcing scenarios on business/ICT alignment. We argue that there is a need to put ICT outsourcing in a broader business context and that it has an important impact on how organisations align business and ICT. Based on previous literature we combine several conceptual models on both outsourcing and B/ICT alignment and identify the possible problem areas in each of these scenarios. The goal of this "theoretical exercise", which is mainly based on argument, is to end the paper with a theoretical proposition which needs to be tested and backed by empirical data. Therefore, this paper should be regarded as the first step in a research process.

Keywords: Outsourcing, business-ICT alignment, theoretical framework

1 INTRODUCTION

The drive for greater efficiency and continuous cost reduction has forced many organisations to focus on their core competencies. Activities which traditionally were carried out in-house are now more easily outsourced. This way, organisations can focus on their key business activities which contribute most to a sustainable competitive advantage. Too often the ICT outsourcing decision is reduced to the questions whether a particular ICT activity is strategic or a commodity for the organisation. The strategic-versus-commodity approach often leads to a much too simple rule to keep all strategic ICT functions internal and outsource all commodity functions. Outsourcing literature (Lacity 1995, McFarlan 1995) clearly demonstrates that not all elements of a business-critical ICT activity have to be kept in-house. Thus, the outsourcing decision is much more complicated than a simple strategic-versus-commodity discussion.

ICT outsourcing should always be put in a broader business context with all the resulting complexity. One way to do this is to study how ICT outsourcing impacts the alignment problem between business and ICT. As organisations outsource part of their ICT to a third party, the alignment complexity increases. This is because alignment then shifts from an intra-organizational problem to an inter-organizational problem. However, different types of outsourcing could have a different impact on the alignment problem. We will try to illustrate this by describing two outsourcing scenarios in detail. In strategic outsourcing only a small part of ICT is outsourced (f.e. the technical or operational part of an organisation's ICT). The organisation maintains control over the ICT strategy and structures. On the other hand, an organisation could also decide to outsource their entire ICT and rely on the supplier organisation as an ICT service supplier. We will argue that these different forms of outsourcing will have a different impact on B/ICT alignment in organisations.

2 THE RESOURCE-BASED THEORY OF ORGANISATIONS

Resource-based theory (RBT) argues that an organisation's bundle of resources, which include tangible and intangible assets, knowledge and skills are the primary predictors of superior financial performance. The logic is that a sustainable competitive advantage can be created when there is *resource heterogeneity* (resources are different across organisations) and *resource immobility* (competitors find it hard to imitate or substitute these resources). Therefore, this theory argues that an organisation should create unique, inimitable competencies as a means to create a sustainable marketplace advantage (Wernerfelt 1984, Grant 1991). The core idea of RBT is that organisations cannot expect to "purchase" sustained competitive advantage in the open market. Rather, such advantage must be found in rare, imperfectly mobile, and non-substitutable resources already controlled by the organisation (Barney 1991). With regards to competitive advantage, RBT focuses much more on the internal organisation and less on the interaction with the competitors or the organisation's marketplace position as do other theories of the firm e.g. Porter's competitive forces, game theory and transaction cost economics.

Before we can enter into a discussion on resource-based view of the firm we need to clearly define the terms and concepts surrounding this stream of literature. We use the framework of Peppard and Ward (2004), which consists of three levels: the resource level, the organising level and the enterprise level. The resource level consists of the organisation's business and technical skills, knowledge and experience, complemented with the behaviour and attitudes present in the organisation. The organising level looks at how resources are transformed into competencies using the combination of processes, structures and roles. These competences can than be transformed into a capability, which manifests itself at the enterprise level, and is recognised in the performance of the organisation.

We opted to work with Peppard and Ward's framework because it clearly shows the dynamics of how resources can be transformed into an enterprise level capability. In previous literature there is often a

lack of precision in the usage of terms and concepts surrounding RBT leading to contradictory definitions. Peppard and Ward try to introduce uniformity and make a clear distinction between resources, competencies and capabilities which enhances comprehensibility. They put forward the following definitions: *Resources* are stocks of available factors that are owned or controlled by the organisation i.e. information, systems, technology, skills and knowledge. *Competencies* refer to an organisation's capacity to deploy resources using processes, roles and structures to effect a desired end. Finally, a *capability* refers to the strategic application of competencies to accomplish organisational goals. Put differently, resources are what an organisation has under its control or at its disposal; competencies are the abilities of the organisation to develop, mobilize and use those resources; capability is what the business can achieve through focused investment and deployment of competencies (Peppard and Ward, 2004).
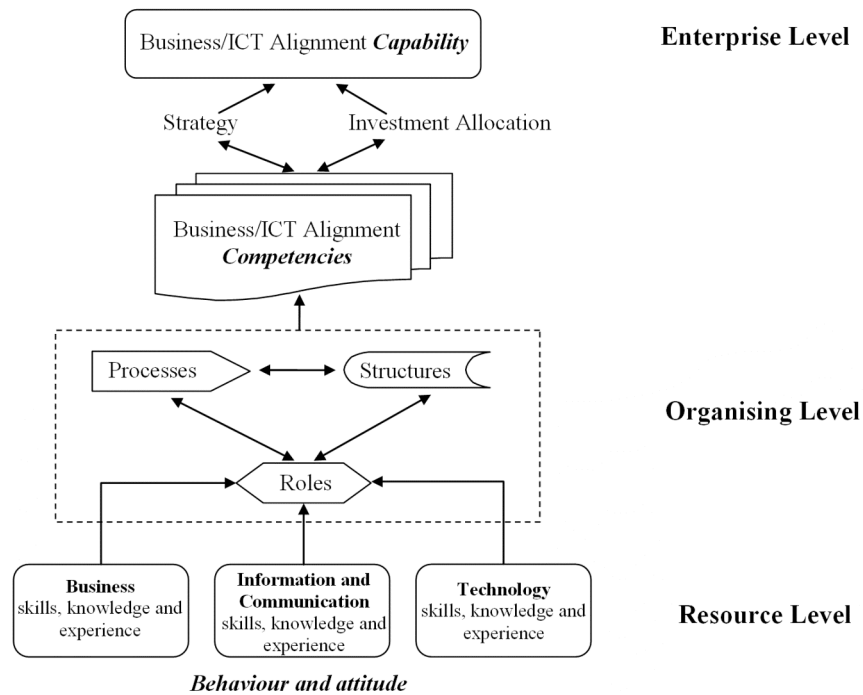

Figure 1.   *Alignment capability, competencies and resources (adapted from Peppard and Ward)*

3 BUSINESS/ICT ALIGNMENT CONCEPTUAL MODELS

The focus of this paper is on how organisations create alignment competencies. Thus, we will focus on the organising level and elaborate on how roles, structures and processes are used to transform an organisation's resources into alignment competencies. Later in the paper (cf. Infra), we will discuss how different outsourcing scenario's have an impact on this transformation.

In Figure 1 we made a few minor adaptations to Peppard and Ward's framework which make it more suitable for this discussion. Whereas Peppard and Ward talk about IS resources, competencies and capability, we talk about B/ICT alignment resources, competencies and capability. We feel confident doing this because B/ICT alignment literature fits quite well with this framework. Without labelling it as such, Luftman (2003) already defined the most important alignment competencies. Table 1 gives an overview of these competencies with an example. However, he does not indicate how organisations can create these alignment competencies. Little is said about the roles, structures and processes used to create alignment competencies. The HOW-question often remains unanswered in previous literature

(Chan 1997, Maes 1999, Cragg 2002, Chen 2005). B/ICT alignment literature up till now focused mainly on defining and justifying alignment. In what follows we will give a short overview of conceptual frameworks on alignment and select a framework for this paper's discussion.

Alignment Competencies	The ability to …
Communications	Use a common language between business and ICT
Partnership	Connect and integrate business and ICT planning and management processes.
Value Measurement	Monitor and benchmark the performance of ICT projects against strategic objectives.
Architecture	Systematically determine impact of new ICT investments on existing business processes.
Skills	Minimise the resistance to change that comes with new ICT projects.
Governance	Have transparency and accountability for outcomes of ICT projects.

Table 1.   Example of possible alignment competencies (Adapted from Luftman)

Business/ICT alignment is not a uniformly defined concept. There is debate in the literature about what alignment actually is, why it is needed, how organizations can achieve it and how it should be researched (Avisson 2004). The two most important views in alignment literature are that business/ICT alignment is:

- The degree to which the ICT mission, objectives and plans support and are supported by the business mission, objectives and plans.
- The fit and integration among business strategy, ICT strategy, business structures and ICT structures.

The first view on alignment focuses on the strategic level in organisations. Most studies that adopt this view study the link between business strategy (planning), ICT strategy (planning) and business performance (Chan et al. 1997, Teo and King 1997, Kearns & Lederer 2000, Sabherwal and Chan 2001). The second view on alignment includes more organisational levels in the alignment discussion. These models give the business/ICT alignment concept a broader scope by specifying more elements and relationships that are involved in this complicated interrelation of concepts (Henderson & Venkatraman 1993, Luftman et al 1993, Maes 1997, Weill & Broadbent 1998, Bergeron et al 2004).

In their seminal work on strategic alignment, Henderson and Venkatraman (1993) introduced the "Strategic Alignment Model" (SAM). We build our discussion on the foundations and extensions of the SAM as it is one of the most validated conceptual models in alignment literature (Luftman et al. 1993, Burn and Szeto 1999, Bergeron et al. 2003, Avison et al. 2004, Rivard et al. 2006). The SAM (figure 2, left) defined two important dimensions of strategic alignment: *strategic fit* and *functional integration*. Strategic fit deals with the alignment of what they call the *external domain* (e.g. strategic choices or how the firm competes in the market) and the *internal domain* (e.g. operations or how the organisation organizes their in-house activities). Thus, business and ICT strategies should be better aligned with the organisation's day-to-day operations. Functional integration considers how choices made in the ICT domain impact those made in the business domain and vice versa.

Maes (2000) used the SAM as a starting point for his generic framework on information management. He split up the internal domain in a structure and operations level. Furthermore, he extended the strategic fit to a third, intermediate level between business and technology: the information and communication level. His enneahedron (figure 2, right) consists of three rows and three columns. The rows represent three levels of an organisation: strategic level, structure level and operations level. The strategic level focuses on decisions regarding scope, core capabilities and governance. The structure level looks at architecture, infrastructure and competence building. The operations level is more about

work processes and specific skills. The three columns respectively represent decisions that are made on business issues, information/communication issues and technological issues. Based on this framework, we included information and communication as an organisational resource in figure 1. Maes makes an often neglected distinction between different forms of business/ICT alignment: *strategic alignment, structural alignment and operational alignment.* Each of these alignment forms have their distinct characteristics and require a different management approach. Maes' work was later used and validated by Avison et al. (2004).
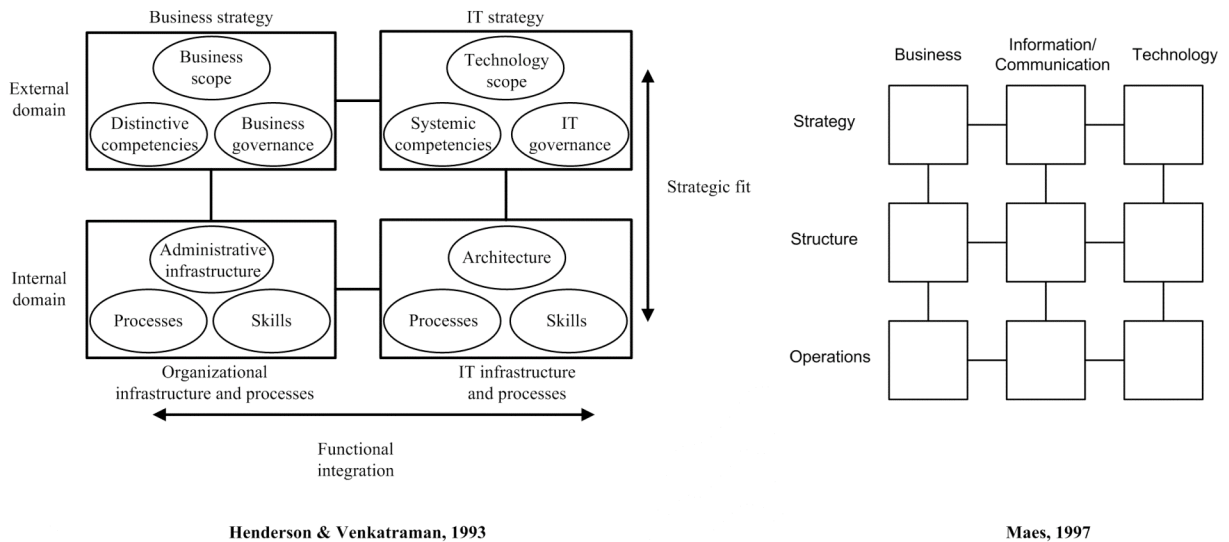

Henderson & Venkatraman, 1993   Maes, 1997

Figure 2.   Strategic alignment model and information management framework

As we already mentioned before (cf. supra) we view outsourcing and the influence on alignment in a broader business context. Therefore, we adopt the view of the second definition on alignment as it places the problem in a richer context and includes more organisational levels. Alignment will not only be influenced on a strategic level by an organisation's outsourcing decision, but also on a structural and operational level.

Finally, alignment literature also points out that future studies should not only focus on formal aspects of alignment. Informal relationships (Pyburn 1983) and informal processes and structures (Reich & Benbasat 2000, Chan 2002) are not only important but may even be the most enduring aspect of alignment (Chan 2002). The framework we adapted from Peppard and Ward acknowledges this as it includes the "roles" people play in an organisation, next to the more formal structures and processes. Furthermore, the framework (figure 1) also includes more informal behaviour and attitudes as part of organisational resources that can be used to build alignment competencies. In the following section we will include the impact of the outsourcing decision on the organisation.

4   RELATING OUTSOURCING AND ALIGNMENT CONCEPTUAL MODELS

In this section we will discuss the impact of the outsourcing decision on an organisation. As said before, outsourcing is more than a simple strategy-versus-commodity discussion. Different sourcing options exist that depend on both the importance of an ICT activity and the relative competence in relation to external providers. So, according to McIvor (2005), organisations have to ask themselves two questions:

1. How critical is this ICT activity for the organisation in order to obtain or maintain its competitive advantage?

2. How capable is the organisation to perform this ICT activity, relative to external providers?

In figure 3 we combined McIvor's different strategic sourcing options with the generic alignment framework into a framework that hypothesises the impact of outsourcing and sourcing options on business/ICT alignment.

Quadrant 1: In this quadrant, the organisation thinks about outsourcing a critical ICT activity because there are external providers that are more capable. The organisation has two main options. If the difference with the external providers is small and easy to overcome, the organisation could choose to invest to *perform the activity internally* and bridge the difference. However, the organisation may have no other option than to *strategically outsource* the activity if it is not possible to bridge the difference in performance with the external provider (for example when the difference is based upon economies of scale). In either case, since the activity is critical to the organisation it is best to keep at least some degree of control over it.

Quadrant 2: In this quadrant, the organisation is more capable than the external providers with regards to a critical ICT activity. If the difference with the external providers is considerable and defendable the best option would be to perform the activity internally. However, the organisation could also strategically outsource part of the activity to an external provider and maintain control over the most important assets. This way it frees up resources for other activities. Competitive advantage can also be achieved by integrating the activities that were outsourced to the external partners. The organisation outsources the operations of the activity but maintains control over strategic and structural elements.

Quadrant 3: In this quadrant there are external suppliers that are more capable to perform a non-critical ICT activity for the organisation. These activities are the best candidates for complete outsourcing. The activity is non-critical so there is no need to keep control over it. The organisation can buy the activity as a service from an external provider who is more capable in delivering that service.

Quadrant 4: In this quadrant, the organisation is more competent than external providers for a non-critical ICT activity. Since the activity is not critical for the organisation, it should consider outsourcing it and free up resources for more business-critical activities. However, it then has to find an external provider that can achieve the same level capability. A collaborative development program could be a good solution here. Otherwise, the organisation can decide to keep the activity internally if no good supplier is found or if there are internal constraints to outsource a good-performing activity.

5 A CLOSER LOOK AT TWO OUTSOURCING SCENARIO'S

In this section we will give a more elaborate discussion of two outsourcing scenario's. This paper does not focus on the outsourcing decision itself. Therefore, we will not discuss whether or not an organisation should outsource certain ICT activities. Rather, we want to determine the possible influence of the outsourcing decision on business/ICT alignment. Figure 3 shows three different possible outcomes of the outsourcing decision making process: *perform internally, strategically outsource or outsource completely*. This is, of course, a very simple representation and more outcomes exist. Yet, for the discussion that follows this representation works as we only want to make a very rough distinction between two outsourcing scenario's and point out the main differences.

If an organisation decides to perform the activity internally, this does not impact the way they align business and ICT. Furthermore, we have to point out that this is a rather theoretical outcome as few organisations rely completely on internal resources and competencies. At the least some form of

support or training of the supplier is utilised by the client organisation. Therefore, the two interesting decisions to contrast are to outsource the entire ICT activity or to strategically outsource part of the activity.
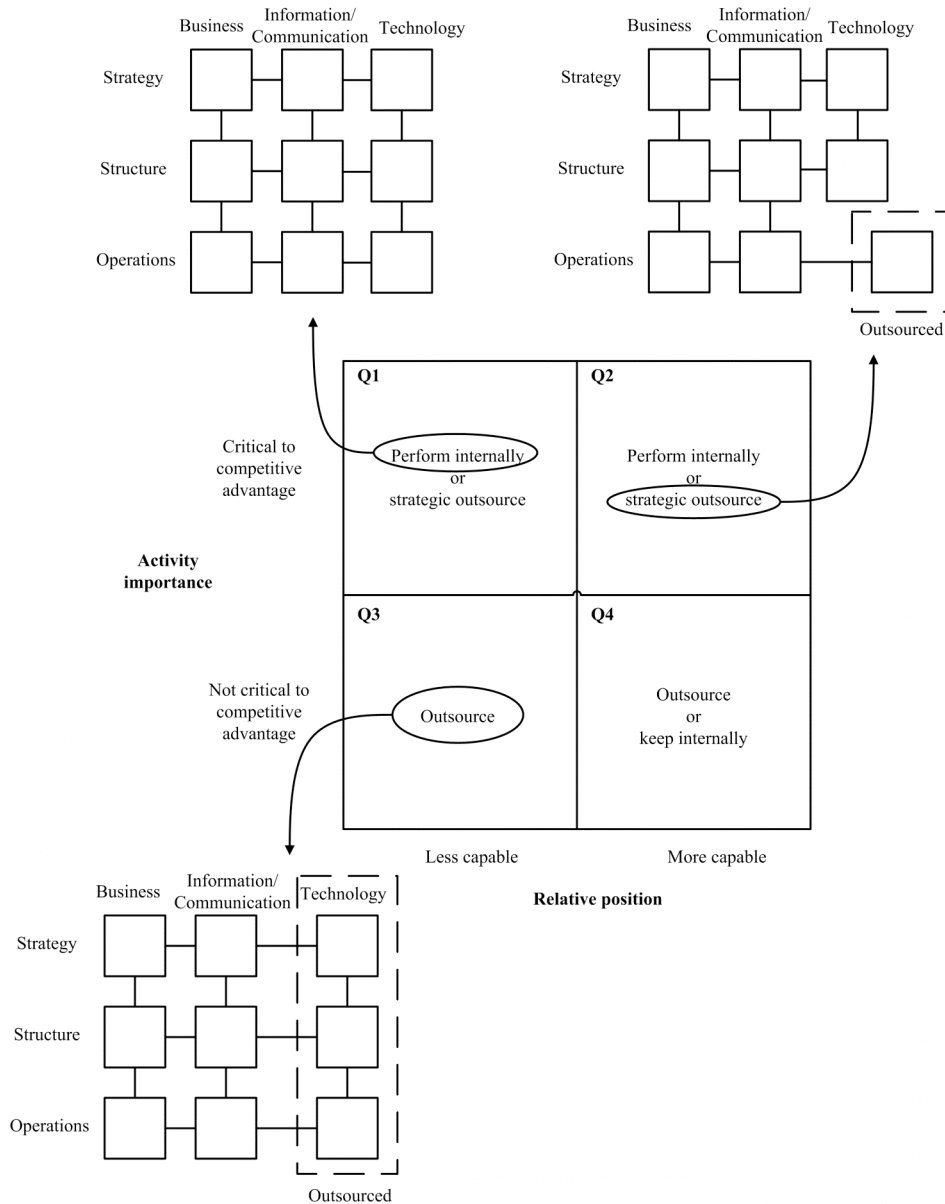

Figure 3.   Impact of different strategic sourcing options on business/ICT alignment

5.1   Outsourcing when ICT is of low strategic importance

In this section we will assume that the organisation wants to outsource their entire ICT activity to an external supplier. The organisation buys ICT capacity and service from the external supplier and keeps little or nothing in-house. This is what some call the *utility view* on ICT or *on-demand computing*. The organisation pays the supplier for the use of network capacity, data storage, applications services (ASP) and much more. The supplier is responsible for the hardware and software investments and the client organisation pays for the computing power it uses from the supplier. This means that *the supplier* is the one that takes decisions about the technology strategy, the type of technology

architecture and the specific hardware and software it will invest in. The client organisation buys computing power just as it buys electricity and pays for the telephone service. Figure 3 shows the impact of this type of outsourcing decision on the generic alignment framework in quadrant 3 (Q3). If we look at the generic alignment framework this means that the entire right column (the technology column) would be outsourced. Again, the client organisation is only interested in paying for an ICT service and will not be involved with the supplier's strategic technology investment decisions. This is the same for electricity where the client organisation is not involved in the strategic technology decisions to invest in nuclear power, renewable energy or fossil fuels. How the supplier generates electricity is his business. The client is only interested in the price and service of the electricity they use. This means that in this type of complete outsourcing, *operational alignment* is the most important aspect of alignment.

Dedene et al. (2004) describes how business profiles and service profiles can be used in an organisation to align technology activities with business activities. He uses the intermediate column of I/C service activities from the generic alignment framework in combination with service level agreements (SLA's) to do so. This approach can also be used in this outsourcing scenario. The client organisation has to align its *business activities* expressed in *business units* (number of purchase orders, number of accounts to manage, number of clients to serve, ...) with its *service activities* expressed in *service units* (number of database transactions, web page requests, messages sent, etc...). The organisation uses a *business profile* which is a production function that expresses for each business unit type the number of service units needed for all the involved service activities. Furthermore, the client organisation than has to align its service activities with its outsourced technological activities using a service profile. In order to make this mechanism work, Dedene et al. (2004) describes the importance of SLA's. We can transpose this theory to this outsourcing scenario.

Alignment for the client firm comes down to three important points:

> Aligning business activities with service activities using business profiles.

> Aligning service activities with the outsourced technological activities using service profiles.

> Negotiating the best possible SLA's with the technology supplier to optimize the service profiles

We discuss a short and simple example to illustrate how this would work in practice. The client organisation has outsourced its entire ICT activity to a supplier organisation. Let's say that the client organisation is a financial organisation that sells loans and insurance to its customers. When the client organisation is serving one of its customers it completes a web form with the customer's specifications, sends the web form to the server for calculating an offer and downloads a tailor-made offer for the customer in pdf. The client organisation employs about 700 employees. Observations revealed that at peak activity 60 concurrent customers are being served. There is 1 *business activity* (serving a customer) which takes up 60 business units. The *service activities* in this case are threefold:

> Consulting and filling in a form.

> Calculating the offer and building a tailor-made offer in pdf.

> Downloading the offer.

While serving its customers, the client organisation typically uses 1 fill-in form, does 3 different offer calculations for the customer and downloads 2 forms in pdf. These are the *information services* the client organisation needs in order to serve its customers.
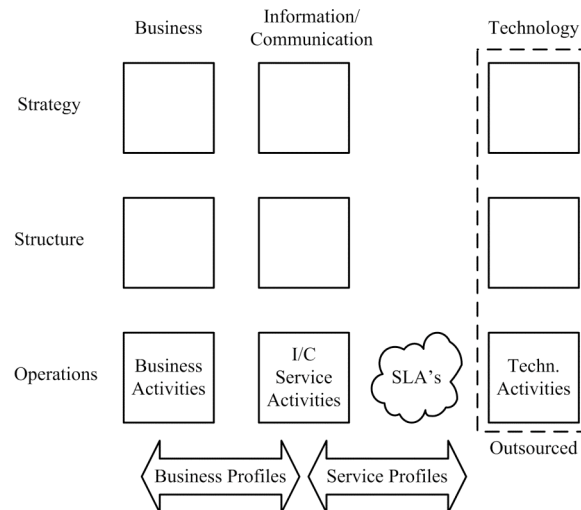
Figure 4.   Operational alignment elements (Dedene et al. 2004)

To be able to provide these services, the client organisation needs the outsourced technical resources from the supplier organisation. The technical resources are primarily CPU power (measured in Milliseconds of CPU time on a Pentium 3, 500Mhz) and disk storage (in MB).

[Business Units Forecast] $B[1x1]=[60]$

[Business Profile] $BP[1x3]=[1\ 3\ 2]$

[Service Unit Forecast] $S[1x3]=[60\ 180\ 120]= BxBP$

[Service Profile] $SP[3x2] = \begin{bmatrix} 3500 & 10 \\ 9000 & 15 \\ 1400 & 4 \end{bmatrix}$

[Technical Unit Forecast] $T[1x2]=[1998000\ 3780]= SxSP$

This can be interpreted as follows: 3,78 GByte of disk storage is needed and 1998 CPU seconds are needed for the client firm to perform this business activity. Based on these calculations the client organisation can negotiate good SLA's with the supplier organisation in order to align its technological needs with its business operations.

Again, in this scenario of outsouring the focus is on aligning the outsourced technology operations with operational business activity requirements. So outsourcing influences alignment in that negotiating good SLA's with the technology supplier becomes a crucial alignment element. Thus, the most noticeable influence of this outsourcing option on alignment is on the *operational level*. When outsourcing also influences alignment on the *structural and strategic level* the exercise will prove to be much more difficult, as we will see in the next section.

5.2   Outsourcing when ICT is of high strategic importance

In this section we assume that the organisation only wants to outsource part of an ICT activity. If this ICT activity is critical to the organisation it probably wants to retain some control over it. The organisation might be willing to outsource the operational/technological aspects of an ICT activity

without losing control over the strategic and structural aspects. It is clear that the client and supplier organisation will need to work together much closer in a collaborative relationship. *Strategic outsourcing* will have a different influence on business/ICT alignment than we have seen in the previous section.
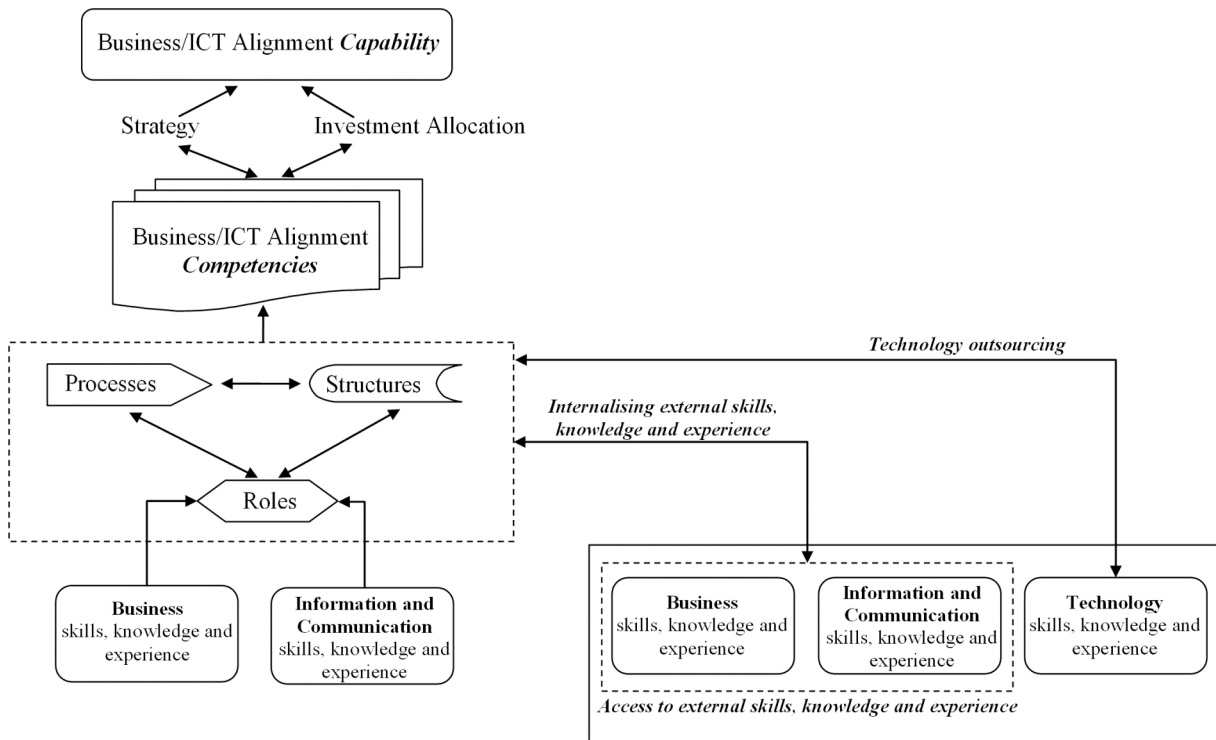

Figure 5.   Impact of outsourcing on building an alignment capability

When ICT is of strategic importance, the supplier organisation will have to align and change with the client organisation's strategy and structures. In figure 5 we determined the impact of strategic outsourcing on the traditional RBT-view on building an alignment capability. A first thing we see is that the client organisation only outsources its technology operations. Since the ICT activity is critical for the client organisation it will want to retain part or most of the control over structural and strategic aspects. Thus, only the technology operations are transferred (outsourced) from the client organisation to the supplier organisation. This can also be seen in quadrant 2 from figure 3. Aligning these technology operations with the operational business activities will be similar to the first outsourcing scenario of operational alignment. However, *strategic outsourcing* is much more than transferring technology operations from one organisation to the other. One of the drivers of strategic outsourcing is the access to the skills, knowledge and expertise of the supplier organisation (McIvor 2005, McFarlan & Nolan 1995, Lacity 1995). More specifically, this means that the client organisation also wants to internalise the external business and I/C knowledge, skills and expertise from the supplier organisation. It is clear that the supplier organisation becomes much more than a simple technology supplier. Rather, the client organisation now has to *integrate* the supplier's strategic and structural skills and expertise into its own structures, roles and processes. The organisation now has to combine its own routines with the supplier's routines to form alignment competencies that can lead to alignment capabilities. Alignment is now more about building collaborative relationships/structures and internalizing external knowledge and expertise than it is about integrating technology operations.

One form of these collaborative relationships is building collaborative routines that can lead to alignment competencies. The client and supplier organisation can review operational performance and current activities together in an operational review team in which each have their own responsibilities. This can lead, on a more strategic level to joint governance structures on all three levels of the generic

alignment framework. Management steering committees in which both client and supplier have an important say in the future strategic possibilities of the organisation. The supplier organisation can be made both responsible and accountable for the success of the organisation. These are only some of the possibilities.

6   RESEARCH PROPOSITION

The goal of this discussion paper is of course to contribute to the research body of literature. In that respect, this scholarly work in which we make assumptions and relate different conceptual models should be seen as an entry point into the development of theory. In a next phase the argumentation found in this paper needs to be tested empirically. To do so we will end this paper with a simple conceptual model that reflects this paper's discussion. If we contrast both outsourcing scenario's we argue that the second scenario, in which ICT contributes to creating a competitive advantage, will have a more profound impact on B/ICT alignment. The internalisation of the outsourced technology will require a certain degree of formal alignment structures and processes e.g. aligning business processes, managing architecture, formal evaluation of outsourcing performance etc. However, it seems crucial that the necessary attention is also paid to informal alignment structures and processes. Relationship building, social networks, knowledge integration, collaboration management, trust building and other informal elements seem necessary in this type of outsourcing relationship. Therefore, the proposed conceptual model shows that the influence of outsourcing on B/ICT alignment is influenced by the strategic importance of ICT for the organisation. We put forward the following research proposition:

Proposition:** **In organisations where ICT is of high strategic importance, outsourcing will lead to both more formal and informal alignment structures and processes between client and supplier organisation.
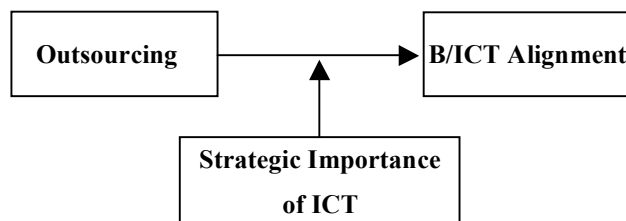

Figure 6   Proposed conceptual model for research

7   LIMITATIONS OF THIS WORK

A theoretical reflection like in this paper has a significant number of limitations that need to be acknowledged. First of all, this discussion builds on previous frameworks and conceptual models and therefore is only as sound as the foundations it is built on. By using Peppard and Ward's work in combination with the SAM and Maes' framework, we opted for conceptual models that have at least been validated by previous research. However, the shortcomings and limitations of these foundations inevitably pass on to our discussion. Secondly, for this discussion we opted for a certain theoretical lens e.g. resource-based theory. This is a deliberate choice as we feel this theory aligns best with alignment literature. However, the discussion could improve if contrasted with other perspectives such as transaction cost economics, game theory or competitive forces. Furthermore, we are fully aware that the discussion in this paper is based on argument rather than empirical data. This work has to be classified as scholarly work that relates models and uses them to propose new ideas that are worthy of

consideration for future research. As long as the arguments and assumptions in this paper have not been empirically validated they remain merely ideas based on previous literature.

8 CONCLUSION

The goal of this paper was not to give an elaborate discussion on each of these outsourcing scenario's. Rather, we wanted to have *a theoretical reflection* on the relationship between outsourcing and business/ICT alignment. Through argument and by relating several conceptual models we end up with a research proposition that now needs to be empirically validated. Without this validation, this paper remains mainly scholarly in nature based on arguments. It seems useful to put outsourcing in a broader business context. Discussing the possible impact on B/ICT alignment is one way to go about it. We did this by relating conceptual models from both fields of research and arguing that the strategic importance of ICT for the organisation could be a mediating element in this relationship. However, actual empirical research is needed to understand how this process precisely works. How are external resources, skills and expertise integrated into the organisation's alignment structures, roles and processes? How can client organisations build collaborative alignment and governance structures with their supplier organisations? Much room for discussion is left.

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