

E-Business considerations on the business side

A paper on the adjustment of business operations

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ABSTRACT

The implementation of an e-Business solution has effect on both the IT and the business side of a company. These effects touch the strategic level, as well as the operational level of both pillars. A lot of papers have been written about aligning both pillars on a strategic or operational level with each other. The strategic fit of these pillars was also discussed numerously. In this paper, we will focus on aligning the operational side of the two pillars. We have operationalized a framework that addresses points of focus that occur and should be mentioned when implementing an e-Business solution. We validated this framework by reviewing it with an expert. These findings are presented in the validation section of the paper, followed by the conclusion which contains suggestions for further research.

KEYWORDS

E-Business, business operations, IT operations, operational IT and business alignment

INTRODUCTION

Lately, many businesses have adopted a E-business solution. In the retail sector, for instance, about 60% of the companies enable their customers to order goods online (*The European e-Business Report 2008*, 2008). For instance, companies have integrated webshops into their businesses to increase sales or have started separate businesses which only sell their products over the Internet. Most of them are medium to large businesses (such as Amazon.com).

There are many models that describe how to implement E-business solutions, which can roughly be divided into two categories. There are the business oriented models (such as the models described in the book of Malhotra (Malhotra, 2000a)) and the more technically driven models, like the one that is presented in the article of Weill & Vitale (Weill & Vitale, 2002). For instance, Weill & Vitale focus on the infrastructural needs of the IT needed to implement an e-Business solution.

This division of the models is probably caused by the expertise of the designer of the model. Nevertheless, there is not a single good model that combines both of these aspects. A lot has been written about aligning the alignment of the business with the IT strategy. However, not much is written about aligning both operational sides. Therefore, our research will focus on aligning the operational business and IT when implementing e-Business.

In this paper, we focus on the research question: *‘What operational business elements need to be considered when implementing an e-Business model?’*.

We are creating a framework that describes the points of focus on the operational business side, when implementing an e-Business solution. The framework will be based on the existing literature (among others Scheper (Scheper, 2002) and Timmers (Timmers, 1998)). The model will be founded according to the guidelines of strategic alignment by Henderson & Venkatraman (Henderson & Venkatraman, 1993).

In this paper, we discuss the existing models as a theoretical base on which the framework is constructed. We evaluate the framework by reviewing it together with business and IT experts. At the

end of the paper, an evaluation of the framework is done and some suggestions for further research are given.

FRAMEWORK CONSTRUCTION

As Henderson & Venkatraman describe (Henderson & Venkatraman, 1993), a possible strategy to deal with the 'productivity paradox' is, that for an effective IT implementation there needs to be synchronization between the business and IT strategy and operations. With this, they implicate that the maturity of both the pillars (business and IT) need to be equal for an effective implementation.

There are already numerous papers and books about aligning business & IT strategy (such as the theory of IT governance (Weill & Ross, 2004)), and determining business strategy (such as (Porter, 1996)) using (among others) strategic fit. As is the same for determining IT strategy (as described in Ward & Peppard (Ward & Peppard, 2002)). Therefore, we will focus our paper on the synchronization between the IT and the business operation. Focusing on the operational side also helps to give people understanding of the practical side of alignment problems between business and IT (such as the adoption of new software within organizations).

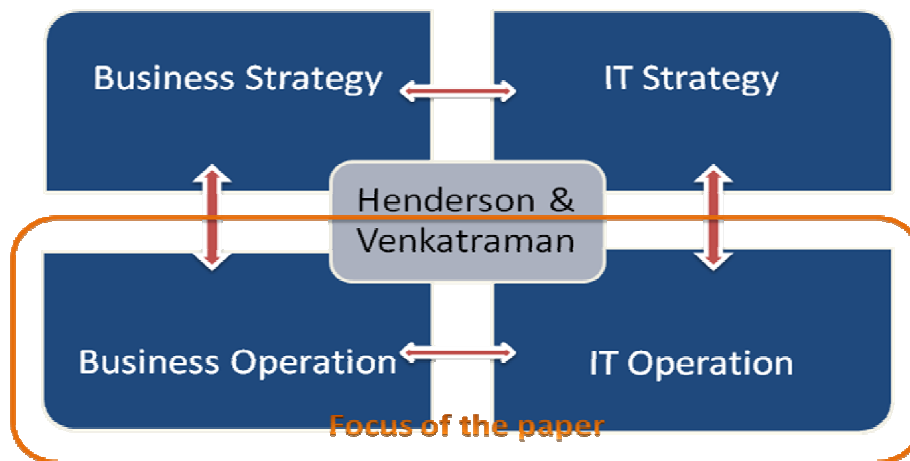


Figure 1: Strategic alignment model of Henderson & Venkatraman

Both operation elements can be described using popular models. For the IT operation element, we use the models described by Timmers in his work (Timmers, 1998). The choice for Timmers is made, because his paper solely and clearly defines and describes e-Business models; which is a good starting point to define our model. In his paper, Timmers describes 11 different e-Business models:

- E-shops
- E-procurement
- E-auction
- E-mall
- Trust services
- Third party marketplace
- Virtual communities
- Value chain service provider
- Value chain integrator
- Collaboration platforms
- Information brokers

Looking at these e-Business models, some similarities between models arise. For instance, an E-mall can be considered as multiple instances for an E-shop. Looking at the E-auction model, this can be

defined as either a form of E-shopping (such as the online execution sale of BVA auctions) or as a form of ‘third party marketplace’ (such as eBay).

Since collaboration platforms can be defined as an example of virtual communities, these two models are joined together in our definition as virtual communities. Also, the ‘value chain service provider’ and ‘value chain integrator’ can both be seen as participants in a value chain.

Because of these overlaps between the models, we have refined the 11 models to 5 more generic models, namely:

1. E-shops (also containing the ‘E-mall’ and ‘E-auction’ model)
2. E-procurement
3. Third party marketplace (also containing the ‘E-auction’ model)
4. Virtual communities (also containing the collaboration platforms)
5. Value chain participation (containing the ‘value chain service provider’ and ‘value chain integrator’ models)

The ‘trust services’ model and the ‘information brokers’ model are left out, because these describe very specific e-Business models that are not generally applicable to most businesses.

As Henderson & Venkatraman described, a good and effective IT strategy is supported by a similar business strategy. As a business strategy is not defined as one element, a more extensive definition of the business strategy is needed. We believe that a business strategy is built on multiple components.

For describing these business operations components, we use the Business and IT alignment framework as described by Scheper (Scheper, 2002). Scheper’s work has been successfully applied in multiple studies of the operational level of IT (such as the paper of Batenburg & Versendaal (Batenburg & Versendaal, 2004)). In his work, Scheper describes that in order to have a correctly functioning IT operation, there are 4 other components that need to have the same maturity level:

- Strategy and policy
- People and culture
- Organization and processes
- Monitoring and control

As mentioned earlier, our paper will focus on the operational elements. Because of that, our model will not include the ‘Strategy and policy’ component of Scheper. This means that there are 3 components, to which we can determine the business operations related to implementing e-Business models.

Our model will describe points of focus for the 3 remaining components regarding the implementation of the e-Business models by literature studies regarding the combination of both aspects. Basically, this will result in a ‘cross-reference’ table (to be used for indicating synchronization):

	People and culture	Organization and processes	Monitoring and control
E-shops			
E-procurement			
Third party marketplace			
Virtual communities			
Value chain participation			

Table 1: Conceptual model of our framework

FRAMEWORK OPERATIONALIZATION

In order to identify points of focus that are applicable on each of the combinations, an extensive literature study has been done. For all of the five generic models, we have researched sources for papers, books and conference proceedings about the models and applications of them that indicate the major points of focus for that generic model.

Of course, for every generic model there are more points of focus applicable than the ones shown in our framework. However, if we would indicate all of the points of focus for each model, our framework would get much too complicated.

E-shops

As Jones et al. (Jones, Wilikens, Morris, & Masera, 2000) claim, trust is a large issue when implementing E-business (especially E-shops). They even dedicated a whole journal article to it. Vatanasakdakul et al. (Vatanasakdakul, Tibben, & Cooper, 2004) agree on this, specifying this issue for the specific situation in developing countries.

As Fingar (Fingar, 2000) describes in his article 'Component-Based frameworks for E-Commerce', running an E-shop comes with a lot of inter-enterprise issues. They proclaim that running an E-shop causes supply chain participation, because of the rapid interaction between the customer, the seller and the supplier.

Swaminathan et al. (Swaminathan & Tayur, 2003) describe that, in order to have a successful E-shop, the logistic processes should have a high level of maturity. Also, they mention the issue of pricing: there is lots of competition between E-shops, so prices are a distinct factor.

E-procurement

In the proceedings of the '8th international conference on Electronic commerce' by Angeles (Angeles, 2006), a strong recommendation is made to involve the (preferred) suppliers of the business in the E-procurement implementation. Also, to maintain consistency, centralized control of product data is recommended. For a strict process, business rules should be implemented.

By implementing E-procurement, a business becomes part of a supply chain. This (of course) involves financial transactions. As Swaminathan et al. (Swaminathan & Tayur, 2003) mention, payment terms between the participants should be clarified and well stated.

Third party market place

As mentioned earlier, trust issues in E-commerce are noted by Jones et al. (Jones, et al., 2000) and Vatanasakadul et al. (Vatanasakdakul, et al., 2004). Because the 'third party marketplace' is a very specific form of E-auctioning, these issues also apply to this model.

Hur et al. (Hur, Mabert, & Hartley, 2007) proclaim that the products and/or services of a business should be suitable to support a third party market place. Also, the statement of work should be updated to support the implementation of a third party marketplace (mostly because of legal issues).

Virtual communities

Koh and Kim (Koh & Kim, 2004) describe the knowledge sharing perspective in virtual communities. As they mention, the biggest challenge is to encourage people to participate in the sharing of knowledge. This is partly achievable with employee moralization as proclaimed by Romm et al. (Romm, Pliskin, & Clarke, 1997). Malhotra (Malhotra, 2000b) admits this by stating that knowledge and intellectual capital should be accounted.

As Romm et al. (Romm, et al., 1997) mention, rules and regulations should be stated to prevent and to fight against corruption. Also, attention should be paid to prevent organizational collapse. Mobility and turnover should be in constant monitoring.

Value chain participation

(Talluri, Baker, & Sarkis, 1999) Talluri et al. claim that, to have a successful value chain, cultural compatibility among the participants should be achieved. This can be achieved by minimizing the distances between them (literally or virtually). (Talluri, et al., 1999) Talluri et al. also describe that the forming of relationships should be done while mentioning the costs of this process.

As (Swaminathan & Tayur, 2003) Swaminathan et al. mention, logistic processes are an important factor of a value chain. This is admitted by Christopherr (Christopher, 2005) in his book 'Logistics and supply chain management: creating value-added networks'. Swaminathan et al. (Swaminathan & Tayur, 2003) also state that information flow is an important part of the value chain.

Resulting framework

When all of these points of focus are added together, our framework arises. In table 2, the result of our research is stated in its final form:

	People and culture	Organization and processes	Monitoring and control
E-shops	<ul style="list-style-type: none">• Trust issues (Vatanasakdakul, et al., 2004), (Jones, et al., 2000)	<ul style="list-style-type: none">• Inter- Enterprise processes (Fingar, 2000)• Logistic processes (Swaminathan & Tayur, 2003)	<ul style="list-style-type: none">• Supply chain management (Fingar, 2000)• Pricing issues (Swaminathan & Tayur, 2003)
E-procurement	<ul style="list-style-type: none">• Business rules implementation (Angeles, 2006)	<ul style="list-style-type: none">• Involve (preferred) suppliers (Angeles, 2006)• Centralize control of product data (Angeles, 2006)	<ul style="list-style-type: none">• Payment terms (Swaminathan & Tayur, 2003)
Third party marketplace	<ul style="list-style-type: none">• Trust issues (Vatanasakdakul, et al., 2004), (Jones, et al., 2000)	<ul style="list-style-type: none">• Product / service suitability (Hur, et al., 2007)• Statements of work (Hur, et al., 2007)	
Virtual communities	<ul style="list-style-type: none">• Encourage knowledge sharing (Koh & Kim, 2004)• Identify intellectual capital (Malhotra, 2000b)• Employee moralization (Romm, et al., 1997)	<ul style="list-style-type: none">• Rules and regulations (Romm, et al., 1997)• Corruption (Romm, et al., 1997)	<ul style="list-style-type: none">• Mobility and turnover (Romm, et al., 1997)• Organizational collapse (Romm, et al., 1997)
Value chain participation	<ul style="list-style-type: none">• Cultural compatibility among participants (Talluri, et al., 1999)• Information flow (Swaminathan & Tayur, 2003)	<ul style="list-style-type: none">• Logistic processes (Christopher, 2005), (Swaminathan & Tayur, 2003)• Minimizing the distances among the participants (Talluri, et al., 1999)	<ul style="list-style-type: none">• Minimizing costs associated with relationship formation (Talluri, et al., 1999)

Table 2: Resulting operationalized conceptual framework

VALIDATION OF THE FRAMEWORK

Our operationalized framework should help business managers to determine points of focus when implementing an e-Business model. To validate our framework, we have asked an expert to review the construction of our framework.

The opinion of the expert was that it is not appropriate to create the framework by leaving out the strategic aspect of Henderson & Venkatraman. He thinks that, by leaving out the strategic aspect, the consistency of the model of Henderson & Venkatraman is affected.

We still think that our framework is valid. However, practice needs to prove this. Therefore, our framework should be evaluated by more experts. Also, a case study at a company that is implementing an e-Business solution should help us to validate the framework. By these means, gaps and imperfections of the framework will also arise.

CONCLUSIONS

In our study, we developed a framework that identified points of focus on the operational business side that occur when businesses are implementing e-Business solutions. We created a conceptual framework at first, by refining the business maturity model of Scheper (Scheper, 2002) and combining this with the strategic alignment guidelines of Henderson & Venkatraman (Henderson & Venkatraman, 1993).

Our framework is evaluated by one expert, who has given his opinion about the conceptual framework. For further validation, more reviews are needed. Also, applying the framework with a case study at a business that is currently implementing an e-Business solution will give more details about the validity of the framework.

As it is impossible to cover all the points of focus, we suggest to do further research into the extension of our framework by identifying more points of focus that fit within the framework.

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