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# Electronic Commerce: Concepts, Methodologies, Tools, and Applications

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## Chapter 2.4

# The Role of Business Models in Developing Business Networks

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### ABSTRACT

Business models have received a substantial amount of interest recently. Also, various research studies have discussed business models, especially in the context of a single company operating in mass markets. Unfortunately, these models often are not applicable for complex products or services that build on long-term knowledge about customer tastes, facilities, and skills. Especially on global markets, the asset specificity and vast geographical distances make it difficult for any single company to provide this kind of service cost-efficiently on a large scale. Instead, it calls for cooperation among multiple firms. Creation of a joint business model for a collaborative network is a necessary means by which companies can coordinate cooperation in practice. The CSOFT metamodel proposed in

this chapter provides guidance for joint business model development by emphasizing customer relationship and adjustment processes needed within the network.

### INTRODUCTION

Business models have recently been a hot topic. Since the end of 1990s, there has been a vivid research stream proposing differing definitions, lists of components, taxonomies, change methodologies and evaluation models for business models (Bouwman, 2003; eFactors, 2002; Faber et al., 2003; Osterwalder & Pigneur, 2002). In essence, the topics discussed in the business model literature are not new; the components of business models have been recognized, at least to

some extent, in business strategies and business planning for decades. But the need for explicit analysis and description of the business model has become more inevitable as the introduction of information and communication technology has enabled completely new ways of making business.

To synthesize, a business model to tell us how strategy is implemented by describing, for example, its product, infrastructure, financials, technology, and customers and their relationships: “A business model depicts the content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities” (Amit & Zott, 2001, p. 493). In addition, this implementation is related to its upstream and downstream business environments.

Most often, business networks are formed in order to make the existing supply chains more efficient (Van de Ven, 1976). However, the networks between partners and even competitors also can be seen as not only a means of cutting costs, but also as a source for new innovative business ideas, where the network provides the customer with more added value than if the companies were operating independently (Nalebuff & Brandenburger, 1996).

In these business networks, independent companies form consortiums or alliances in order to jointly serve customers with new offering and even to jointly develop the underlying business models. This calls for reconsideration of each component of the business model, especially the revenue sharing and roles of each participant. The new business models, therefore, must describe in sufficient detail the value created to the customer and the income generated to each participant. In addition, each partner’s role in producing the output has to be explicit.

The most prominent examples are found in mobile and Internet businesses, where telecom operators aim at producing by themselves a very wide range of services and content. However, the operators soon find out that they cannot compete

with specialized and established media houses in content production. The media houses have similar plans to find a direct access for their content in the Internet by circumventing the middlemen. In both cases, there have been a number of failed business models. The success stories, however, have been networks of operators and content/service providers, where some of the parties moved to the middle of their value chain (Clemons et al., 1993). For example, the Japanese operator, NTT DoCoMo’s i-mode product successfully mediates the output of a network of content providers to customers and serves as a good example of the possibilities of win-win business models in networks (Saarinen et al., 2002).

Building upon Faber et al. (2003) and Osterwalder and Pigneur (2002), we propose a metamodel for joint business model development that differs from the previously mentioned models in that it considers joint produced services that require long-term relationships. This puts an emphasis on the customer relationship and adjustment processes needed within the network to enable the joint service concept in the first place. The metamodel starts with the definition of ontology, defining the most important factors in the joint business model (i.e., customer relationship, service, organization of the network, finance, and technology). It then guides the analysis, negotiations, and change processes needed and points out customer- and case-specific limitations affecting the business model. Finally, by taking into account the limitations of the network, we end up with a feasible, networked business model.

## **THE TRADITIONAL VIEW OF BUSINESS MODELS**

Traditionally, a company’s business is built on strategy, which is typically reflected at operations-level business plans for specific products or product groups. However, there often is quite a substantial gap between these two levels. In

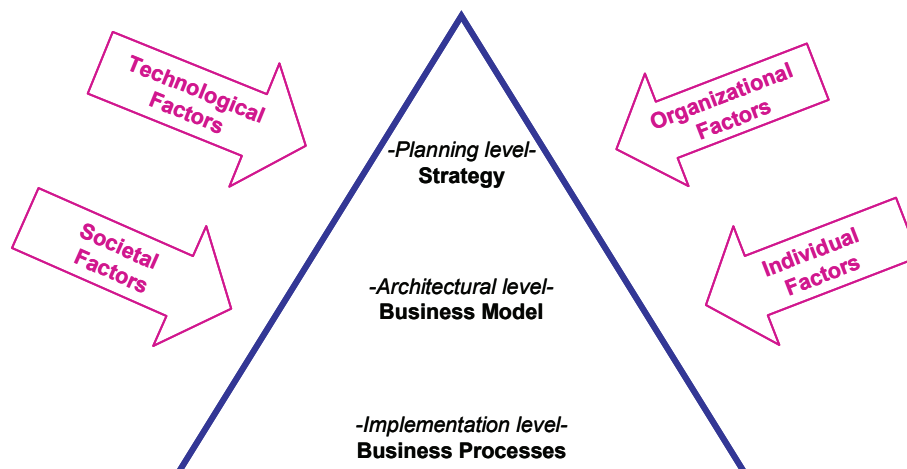
particular, today's rapid technological change, along with the societal, organizational, and individual factors in the global market, makes the management and planning of new business ideas complex and challenging (eFactors, 2002) (see Figure 1). Therefore, there is a need for a systematic description of a business model, methods, and processes for turning the strategic visions into organizational arrangements, responsibilities and roles, information, material and money flows, and so forth. Even though these aspects probably have been included in well-prepared business plans, the virtue of business models is that they consider the business context from a conceptual level, which makes it somewhat independent of current processes and restrictions of the company. Instead, a business model may be used as a tool (i.e., a conscription device while developing the model) and later on as a boundary object (Boland & Tenkasi, 1995; Brown & Duguid, 1991) to point out the need for additional capabilities and resources, and to figure out alternative ways to organize transactions and use new technologies (Heikkilä et al., 2004a).

The business model can be seen "as the strategy's implementation into a conceptual

blueprint of the company's money earning logic" (Osterwalder, 2004, p. 14). In other words, the vision of the company and its strategy are translated into value propositions, customer relations, value networks, technology, and financial arrangements. The business processes level, in turn, is the materialized form of the conceptual business model, appearing as workflows and so on.

Similarly, adoption of new strategies may require reengineering of business processes and IT. Several studies have noted the relationship between successful implementation of strategic change and the need to change business processes (Kallio et al., 1999). Our discussion builds upon recent literature on business models (eFactors, 2002; Faber et al, 2003; Osterwalder, 2004; Osterwalder & Pigneur, 2002), on research on organizations' capabilities of managing alliances (Andersen & Christensen, 2000; Powell, 2000), and on the capabilities to change in their network relationships and infrastructure (Kumar & van Dissel, 1996; Möller et al., 2004; Ring & Van de Ven, 1994; Van de Ven, 1976). We present a new framework that takes into account the effects of networks.

*Figure 1. Business model and context (synthesis from Osterwalder & Pigneur, 2002 and e-factors, 2002)*



## **JOINT BUSINESS MODELS: THE IMPORTANCE OF NETWORKS**

Most business model literature has focused on analyzing models for a single firm or organization (Bouwman, 2003). However, in recent years, various kinds of networks have become common in business. For example, studies by Tsupari et al. (2004) show that over 80% of companies in the manufacturing industry in Finland are involved in networks to some extent. Furthermore, the importance of networks most probably will be even higher in near future, as the tendency seems to be toward deeper relationships requiring higher levels of commitment and coverage. Outsourcing of non-core functions of companies amplifies this trend and increases the need for managing networks. At first, the relationships most often are traditional buyer-seller ones but evolve over time to closer partnerships and network relations. Thus, in reality, the business model analysis of a single company reveals usually only a small part of a complicated service network.

The relationship of the development of a joint business model with the strategy implementation process can be described as follows (Heikkilä et al., 2004a). Typically, a company has an initial idea or a business problem regarding further processing that requires the knowledge and core competence of several firms. The very first task in the formation of a network is the initial negotiation phase, which concerns communication and understanding the ambitions of the potential parties and the selection of a right or suitable combination of capabilities and resources. All potential partners have to make their own decisions as to whether or not to engage in the network and then decide which business units should be involved.

Only after the core companies of the network have joined can the actual negotiations over specific goals (i.e., inter-organizational strategy adjustment) be started. Each potential participant of a business network has its own strategies, models, and processes for the present and the

future. Therefore, the network should create a joint business logic that matches or complements each company's strategic objectives. This means that each partner in the network should reveal its true strategic goals concerning its cooperation, after which the network may jointly make decisions over the target for the network. Without a doubt, this task is a demanding one, and it often takes a considerable amount of time to build a sufficient level of trust between the parties before strategic intentions are articulated and communicated and actions are taken accordingly.

Before this trust is achieved, there may be several obstacles. For example, different units of network members may not share a common view of the benefits of joining the network. Furthermore, the strategic advisability for partnering may be marred by short-term needs to generate income. Indeed, the widespread adoption of short-term management through increasing shareholder value may be a major stumbling block in the road of many networks.

Based on a case study (Heikkilä et al., 2004c), we noted that if the interorganizational strategic adjustment is carried out as a Scandinavian style discussing process, it might become a never-ending story. Whenever a new member, either individual or company, enters the consortium, new negotiation and sense-making rounds are restarted. At some point, it becomes necessary to choose a leader or to agree on the focal company that should take the responsibility for coordinating the cooperation. The focal company is most naturally the one providing the most critical core competence in the new service concept, as it has the greatest motivation to create a new business model.

If strategic intentions are aligned to a sufficient degree, then the network can start developing the joint business model. Perhaps the most beneficial way is to formulate the model simultaneously with top-down and bottom-up approaches. When looking at a business model from a top-down view, the network aims at pointing out necessary



conditions for joint business. In the bottom-up approach, the requirements arising from practical business processes are reflected in the very same business model, calling for changes both in intraorganizational processes and in the espoused strategies of each participating company.

Gradually, when the business model is shaping up, the focus moves more toward practical business processes needed to implement the business model. Evidently, interorganizational process adjustment should take place. This means that the members should look at the kinds of processes they already have and how the network could, by combining these processes, produce the desired outcome. Simultaneously with the above-mentioned adjustment, each member should reflect on its findings from the benefits of cooperation to its own internal processes and strategies and make adjustments.

To summarize, the participating companies should engage initially in three adjustment processes: horizontally at the strategy-business model interface between the companies (Powell, 1990); horizontally at the processes-business model interface between the companies; and vertically within each company to align the strategies and processes to meet the challenges of cooperation (e.g., Takeishi's internal coordination of interfirm cooperation) (Takeishi, 2001). There is also an evident need for a fourth adjustment; namely, to find out the uncovered parts of the business model, when needed.

### **A Metamodel for Joint Business Models Development in Practice**

The process of developing of a joint business model can be an esoteric exercise of intellect and imagination. However, the dirty details of the real world have to be taken into account, if the business model is ever to be implemented, especially in a cost-efficient manner. For example, a single organization may need more than one business model, because it may have multiple business

sectors and products or services. These several business models then require different organizational arrangements and ICT support, especially with different product/market combinations, as argued previously. This means that a business model should have the general characteristics of a good model; it should describe the ontology, process, and means for sensitivity analysis for the designer. The procedure with which to identify a good model is depicted in Figure 2.

The procedure for developing a joint business model starts with the ontology. Ontology is an explicit simplified conceptualization of the objects, concepts, and other entities that are assumed to exist in some area of interest—in this case, joint business models—and the relationships that hold among them. In addition to the ontology, creating joint business models includes definitions of the change processes needed. Then, the procedure continues with recognition of demand-side restrictions. These determine the realized instances of a business model. The last step is to consider supply-side restrictions, which may affect the possibilities for the network to offer specific products or services as planned. This requires a reality check or proofing of the concept (i.e., business model should be critically analyzed and fed back to the previous stages) (Heikkilä et al., 2004b). Only after passing this reality check can the collaborative network start sales negotiations with potential customers.

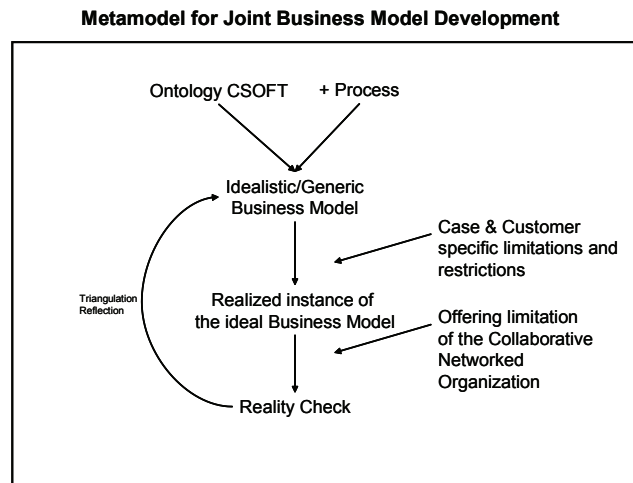
Next, we describe the CSOFT Ontology, consisting of customer relations, service, organization of network, finance and technology. Then, we define case- and customer-specific limitations, offering restrictions, and their impacts on business models.

### **ONTOLOGY: FIVE FACTORS OF CSOFT**

Whereas the models by Osterwalder and Pigneur (2002) and Faber et al. (2003) that inspired us



Figure 2. The metamodel



primarily focused on short-term transactions in the mass market, our emphasis is on long-term service models for B-to-B markets. It can best be characterized by the long-lasting business relationships among customers and suppliers, mutual interests of the consortium companies in serving the complex technical infrastructure, and their interdependency in providing global service. In this context it is the customer relationship that deserves special attention. It is the customer relationship and its connections to other parts of the metamodel that make devising the business model in this context so complex.

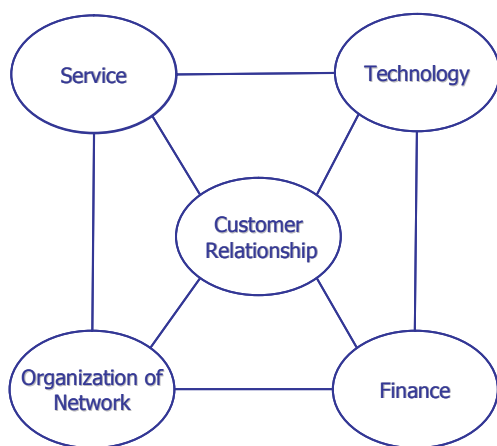
We developed a CSOFT ontology that defines the business model as a combination of several interrelated elements. The central distinguishing element is the nature of the customer relationship, which, in our context, plays a major role but is neglected in many other business models. It is connected to other factors such as service, organization of network, finance and technology, as depicted in Figure 3.

## Customer Relationship

The customer relationship is the focal point in CSOFT ontology. In B-to-B business, the relationships are often very long. In our case (Heikkilä et al., 2004a, 2004b, 2004c), it is typical to have well over half-a-century-long relationships with customers. This brings up the question of relationship ownership—who owns the customer in a networked business model? No straightforward answer can be given, but clearly it depends on the service offered to customers. In jointly developed products/services or bundled existing products, the companies in the network should jointly own the relationship.

There are different approaches to customer relationships. In CRM, the approach is rather mechanical (i.e., use of IT in the management of relationships is emphasized). The origins of CRM are in the B-to-C business, where the use of frequent customer programs, for example, are common. Most airlines (e.g., Finnair) and retail chains (e.g., SOK, Kesko) run similar types of customer programs. However, the number of customers is lower in the B-to-B business, which is

*Figure 3. CSOFT ontology*



reflected in the customer relationship management in industrial relations. Usually, the relationships are managed by key accounts or product managers, who frequently making personal contacts with customers. Large IT providers, such as HP or IBM, are prime examples of this. However, the methods used in CRM are useful in industrial relations, too.

### **Service Component**

The service component depicts the intended value of the service and how it is created and provided. This includes defining the type, or different types, of services provided, as well as the service and production processes behind the service.

The service provided to customers is the key value-creating element in the business model. The type of service provided may be organized in several ways. Increasingly, industrial enterprises have separate service processes for different products and services. Kone Elevators, Kone Cranes, and several other companies have made a difference in providing standardized, modularized, and customized products by using differentiated processes. This also applies to renewal and service processes, where similar structures can be found.

To create new business models, there is usually a need to redesign processes in a true reengineering sense. Often, the redesign of processes is dependent on new applications of ICT technology; for example, many industrial services (SKF) or extended services (Würth) providing value to customers.

### **Organization of Network Component**

The organization of network component defines the roles of networks participants (i.e., the tasks and operations that are performed by each partner). This division of tasks is not stable over time and is subject to changes due to the development of processes and services, as well as changes in customer relationships and the entry of new network partners.

Some networks are very dynamic by nature, resembling a project organization, where the organization is formed individually for each customer and task. This is typical in large-scale construction projects, airline production, and paper machine deliveries. In some networks, there is a clear subcontracting relationship with one focal company, as in the so-called Nokia cluster. The network also may be based on operational partnerships, where network members produce services and content dedicated to end-users via one partner. This is the case of the Japanese i-mode service, where NTT DoCoMo is the key player. Other operator-driven networks, such as Vodafone live!, are similar. Strategic alliances are relationships with equal partners, where the long-term relationship is emphasized. The car industry has several examples of this (e.g., Ford-Mazda relationship).

Then, how dynamic or stable should a network be? If we bear in mind the half-a-century life cycle, then this would call for a network where at least its core would be stable, even though the outer rim of the network would be more dynamic, correlating, for instance, with changes in customer or market segments.

## **Finance**

The finance component focuses on cost issues and revenue sharing. These are major stumbling blocks in many networks. There are multiple examples of this in e-business, where at one time it seemed that everyone was willing to accept partners in their network on the condition that the major share of revenue generated would end up into their pockets. Needless to say, most of these unequal networks failed even before launch. Examples include multimedia services such as WAP (Wireless Application Protocol platform) and Internet portals. The network did not have a joint idea of a fair sharing of revenues, and, as a consequence, the members (i.e., operators, contents producers, media houses, IT developers, etc.) all felt they received an inadequate share of the revenues generated by the networked service.

New financing and pricing models often form a vital part of new services. The trends have originated from office equipment services, where copy machines by Xerox have been leased with full service support for decades. Similarly, car leasing services offer extension to old services with a financing element, relieving the companies from investing. This new trend of new service (business) models based on financing now includes such examples as Dell in leasing and maintenance of computers, Securitas in offering security services bundled with rented equipment by a monthly payment, and construction companies in offering partial ownerships. There are several different models available, but few of them are used presently in complex industrial facilities.

## **Technology**

Technology for providing services includes especially ICT support for the business models. As most businesses nowadays rely heavily on ICT for operations, a proper ICT infrastructure is essential for success. One of the main obstacles in technology is the incompatibility of the systems of

network partners for exchanging data/information and education materials and training services. If a new business model needs a complete revision of ICT, the cost may prove to be a barrier of starting operations, as in the case of many banks being slow to offer Internet banking services.

## **CHANGE PROCESSES**

As discussed earlier, there are multiple adaptation processes needed for creating and implementing a joint business model. There is (1) adaptation at the strategy level of the companies; (2) adaptation at the business practices, infrastructure, and tools; and (3) their alignment to meet the challenges of cooperation (Heikkilä et al., 2004a). This means that the actual business model should include explicitly the processes to pay attention to in these adaptation processes. We suggest four types of change processes during the design stage:

- A process guiding the analysis of customer characteristics and case-specific needs (i.e., facilities) and negotiations of the roles and offering of the consortium, because it can be very time consuming.
- A process guiding the implementation of the business model. Within the consortium, this means the three previously mentioned adaptation processes for matching strategic intentions, internal change processes, and interorganizational changes in processes and infrastructure. For a customer, these changes should provide simplicity and benefits.
- A process guiding the identification and follow-up of real costs of producing the service and transaction costs (Williamson, 1985). This may mean, for example, creating proofs of concepts, service level agreements, quality of service, intellectual property rights ownership, and the ownership of assets in advance on a contractual basis.
- Finally, a process of devising a road map for the firms to change and of getting the neces-

sary people involved on a regular basis in evaluating the viability of business models from different perspectives (Hoffner et al., 2004).

### **Demand-Side Limitations and Realized Instances of the Ideal Business Model**

By describing the ontology and the change processes proposed, we can generate an idealistic business model. However, in reality there are always some demand-side limitations that must be taken into consideration in the business model. Thus, in the next phase in the creation of a joint business model, the companies should find out case- and customer-specific limitations and restrictions and analyze their effects on the feasible realized business model instances. In practice, this means that if the markets are not homogenous, either the customer segment is reduced in size, or there most likely will be several different realized instances of the business model.

### **Supply-Side Limitations and Reality Check**

Similarly, the supply side also has some limitations (limitations in the offering of a cooperative network) that affect the capability to perform. For instance, if the network is lacking expertise needed for a specific product or service, it either has to rule this service out from its offering, or it must change the composition of the network. As suggested earlier in this chapter, in terms of offering and organization of the network, this implies that various market segments or areas should be served partially by different networks. Finally, a reality check for the business model can be carried out with tentative proof of concepts, prototypes, and benchmarking.

## **CONCLUSION**

In this study, we analyze the development of a networked business model in a context where a number of companies are to develop novel businesses jointly. Previous studies on business models primarily cover business models of one organization for the mass market. But imagine a situation where you are asked to service, repair, or upgrade a physical production system that was built years ago in an overseas market. You are asked to do that because you originally delivered some parts to the system, and, at present, you are one of the leading suppliers of equivalent facilities. The problem is that the facility has been changed and even become outdated, but it is still to be kept running for several years. The potential business relationship urges you to work in a more clever way than before, utilize a number of partners and local service providers, and do all this in a cost-efficient manner on a global niche market. This calls for a novel joint business model.

Organizations that participate in such a network naturally have each their own business strategies for the present and the future. If the cooperation is to succeed, the companies should adjust their operations and even strategies to some extent. As a consequence, the joint network emerges incrementally through several adjustment processes. The CSOFT metamodel presented in this chapter can be regarded as a means of coordinating these several cyclical adjustment processes needed in an effort to state the joint offering of the network. Thus, in the sense of Argyris and Schön (1978), it is a device enabling higher-level organizational learning. It is especially designed for networks offering complex services. Because of the context, it emphasizes the importance of a customer. This metamodel provides not only the elements, but also guides the process of creating, analyzing, and evaluating potential business models for a startup network. Moreover, it is planned to be applicable each time the network designs new offerings for its customers.

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