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Collaborative Business Model Innovation Process for Networked Services

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Abstract. This paper presents a process framework for innovating joint business models (co-BM) for multiple companies. Our framework describes the change management that should be carried out in parallel to the rigorous analysis and development of the business model details. With two illustrative cases we show that fruitful co-BM creation process in networks requires both development of the model itself, but also organizational innovation processes including mutual learning and harmonisation of operations. We claim that by understanding this dual process and its key facets might help (1) to coordinate the practical BM creation projects better and (2) to analyse which BM related decisions contribute or hinder the joint development project.

Keywords: Business model, innovation, collaboration, process, business network, action research

1 Introduction

Business model (BM) is already commonly adopted method within companies when they are innovating and sketching new business ideas. Since 2006, the Global CEO study has reported that senior executives across industries regard developing innovative BMs as a major priority [1]. Partnering for innovation, in turn, is one of the top three key issues in 2012 [2]. There is also a rich scientific literature on BMs [3–5], BM innovation [6], [7] and business networks [8–11]. However, there is little research combining these themes and studying BM innovation in business networks [12]. In this paper we look into the creation process of collaborative business model (co-BM) within multiple companies. Especially within the setting of business networks, mutual learning and alignment of activities within the network is essential [12], [13].

Understanding the creation process and its key facets might help (1) to coordinate the practical BM creation projects better and (2) to analyse which BM related decisions contribute or hinder the joint development of business innovation. Fruitful co-BM creation process in networks requires not only rigorous analysis and development of the model itself, but also indispensable organizational level and network level changes are necessary for mutual learning and harmonisation of intra- and interorganizational operations.

Our objective is to develop a framework that can be applied to depict the main activities required to create a co-BM. To achieve this objective, the paper is structured as follows. First we will look into business network literature and then discuss the concepts of BM and also BM innovation. In the following chapter we present our suggestion for a framework for co-BM innovation process building on our findings from action research studies. Finally, we will draw some conclusions and will outline opportunities for future research.

2 Networks

In literature the terms business network, strategic network and value network generally refer to intentionally formed networks where an actor can, at least to a reasonable extent, exert influence and control on the behaviour of other parties of a business network [14]. The value activities carried out by differing economic players are linked to each other through different flows such as material, information, financial resources and relationships [15].

Håkansson and Ford [11] state that the contents of the links between actors are the result of investments by both of the counterparts for instance to specific process or knowledge (asset specificity in transaction costs economics [16]). The greater the investments the more substantial will be the content. The stronger the links the more important they will be in giving life to the node, but also in restricting the freedom of the node. This means that the actors have to make decisions over which relations they are willing to invest in and commit to. Rosenfeld [17] identifies the intentionality and restricted nature of the network. The aim is to provide mutual (financial) gain by engaging in cooperation and establishing relationships that make partners' businesses dependent on each other.

3 Business Models

Business model (BM) depicts the general logic that creates the business value in relation with the organisations' infrastructure, or assets. Osterwalder [5] characterises it as *"the translation of a company's strategy into a blueprint of the company's logic of earning money"*. Venkatraman and Henderson [18], in turn, define BM as *"a coordinated plan to design strategy along the customer interaction, asset configuration and knowledge leverage vectors."* The literature is rather consistent in the list of main components of a BM [19]: Service (the value proposition offered on the market); Customers (segments); Infrastructure (management) and Financials (revenue and expenses with necessary financial mechanisms). Some researchers add Technology as one of the major components as well [20], [21].

There is a notable difference in how American and European scholars approach the concept of BM [22]. The American school mainly concentrated on classifying [23] and use of BMs in a context of open innovation [7], [24], [25]. In a special issue on BMs in Long Range Planning 2010 scholars promoted conceptual BM descriptions as tools to help in designing experiments of new business ideas or testing modifications to old ones [7], [26], [27]. Meanwhile, the European school, originating largely in Information Systems Science, has focused more on ontologies and design methodologies of BMs [20], [28]. An emerging area is to introduce BM tools; they have been studied especially in the context of mobile business and networked services [22].

However, lately the schools have grown to closer to each others: The main interest is now on the practices that help to apply the business modelling approach in real life cases and to consider also dynamics of business modelling [29]. This requires processes and techniques that help to describe the BM in real terms and also help to carry out BM innovation processes.

3 Business Modeling and Service Innovations

Innovation is considered as a multi-stage process whereby organizations transform ideas into new/improved products or processes [30] in order to advance, compete and differentiate themselves

successfully in their marketplace [31]. In addition to product and process innovations, the literature identifies *Business Model innovations* (BMIs), which essentially concern novel ways of organizing the business activities, infrastructural assets, and related management systems [28], [32]. Instead of traditional inward-looking approach the tendency is more towards open innovation [33] and co-creation [34], [35], characterized by sharing of knowledge, resources and capabilities within and across organizational boundaries [20].

There are a few studies on the creation of the joint business model [36], [37]. The studies have emphasized the dynamic, iterative nature of this process [8], [38]. Decisions made in differing phases are adjusted during the evolving cooperative relationship. Researchers also stress the importance of customer need or solving customer's problem [39]. Several studies [21], [26] propose that BMI starts from segmenting the market, then creating a value proposition for each segment. The literature [7] also suggest that experimenting with new BM proposals would provide information to decide upon the most successful ones against the current state of the business network, and also against its evolution prospects [26].

There are also studies [37] pointing out the challenges coming from boundary-spanning nature of joint business model innovation, because seldom has one party the authority over the other parties in the network. It is the whole ecosystem with its stakeholders, authorities and customers that affect the feasibility of the business model [40]. The associated high uncertainty is likely to reduce firms' willingness to enter such complicated BMI endeavors [41], [42].

Finally, synthetizing from general innovation process literature Frankenberger et al. [43] propose a framework which structures the whole BM innovation process into initiation, ideation, integration, and implementation phases. It lists the challenges managers face during the process, such as overcoming the current logic and ways of thinking innovation, managing idea creation, handling internal resistance and managing partners. However, though this framework takes into account the partners, their role is more to agree and adapt to the BM rather than co-create the BM. Therefore it does not include the crucial issues related to co-BM innovation, where several independent parties are jointly creating a BM.

4 Methodology

The theoretical reasoning in this paper is based on two empirical action research cases of BMI in business networks (Table 1). The Alpha network is about innovating a joint business-to-business BM by three independent firms to international industrial customers. Beeta network, in turn, is about co-BMI by four independent firms in Health & Wellbeing sector for business and private customers. The duration of both research studies is 3 years (research study with Beeta is still on-going) and we had tens of meetings, interviews and workshops every year with the network partners.

Table 1. Two BMI cases in business networks

	Alpha	***Beeta***
Industry sector	Industrial	Health & Wellbeing
Customers	Global B-to-B, customer potential 5000	National B-to-C, customer potential 800 000 per year, B-to-B, customer potential 100 000
Value proposition	Novel after-market maintenance, repair and operations services supported by ICT	Novel wellbeing services for patients and occupational healthcare customers
Network's core companies	1. Manufacturer of machines for process industry 2. Producer of enterprise software and services 3. Provider of telecommunication services	1. Provider of healthcare services 2. Chain of 64 privately owned pharmacies 3. Producer of pharmaceutical products 4. Provider of consultancy services for pharmacies and wellbeing sector

Our research method is action research, more specifically Soft Systems Methodology ([44], [45], It builds on a pragmatist philosophy [46], where the investigator and the research object are assumed to be

interactively linked so that the findings are literally created as the investigation proceeds [47].

As action researchers we aim to make purposeful use of previous research to question whether they are useful in practice in the sense of helping people to better cope with the world or to create better organizations. Our theoretical reasoning is moving back and forth between empirical discovery and theory in the sense of abductive reasoning [48]. The original theoretical framework is successively modified, partly as a result of unanticipated empirical findings, but also because of theoretical insights gained during the process [49]. Even though it has been criticized, abduction is seen as a method to test new ideas or to make sense of new situations [50] for practical solutions.

Whereas other research methods seek to study organizational phenomena, but not to deliberately change them, the action researcher is simultaneously studying the phenomenon and introducing avenues for organizational change. The following framework is a result of our research projects depicting the advancement of business model innovation process in the two business networks.

4 Collaborative Business Model Creation Process

The process of developing a co-BM can be an esoteric exercise of intellect and imagination. Building on our literature analysis, the driver to the co-operation should ultimately be the customer need. This means that the procedure should start from an articulated opportunity to fulfill some customer need. However, the dirty details of the real world have to be taken into account, if the BM is ever to be implemented in real, especially in a competitive manner (i.e. meeting the views of the stakeholders). This means that a BM should have the general characteristics of a good model: it should describe the ontology and means for sensitivity analysis. Moreover, the development activities should put at least equal attention to the real-life complexities and constraints and management of change. In other words, no matter how clever BM we design, it is not viable, if the parties involved are not committed, are not able to share information, or the business processes are not suited to business environment and regulation or co-operation.

In line with the arguments of scholars that BMs are boundary-spanning concepts [12], [25], [26] we found that collaborative business

networks would benefit from using BMs as dynamic boundary objects [51], [52], which are modified during the mutual learning and negotiation process between parties. Reflecting this to our action research findings, we came up with a description of the co-BMI process (Fig 1). It starts from identifying the customer need and thereafter divides into to two parallel sub processes: 1) the actual systematic analysis and innovation of the new BM and its components, and 2) respective innovative, managed changes in the organizations' activities.

Next we will consider each of the activities in turn.

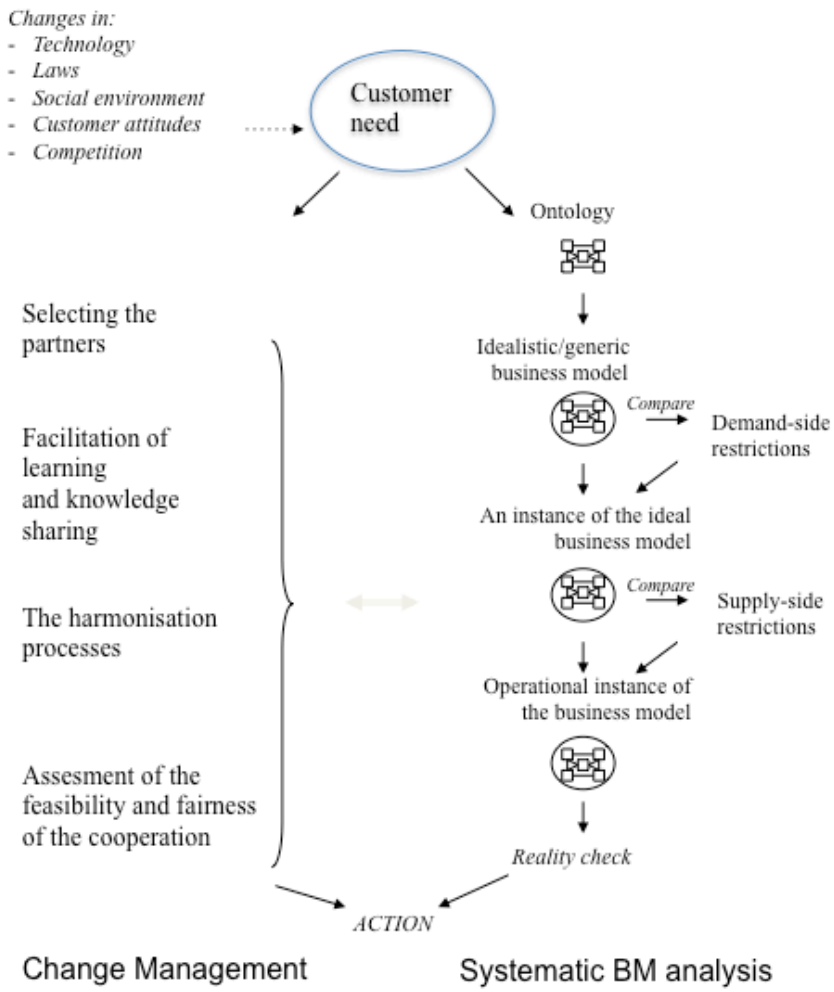

Fig. 1. Co-BMI Process

The Business Opportunity: The starting point is characterised by the challenge to discover customer need that provides opportunities for new business. The importance of understanding the customer is stressed frequently in literature [6]; [53]; [26]. For example, the customer could be offered a cheaper alternative (such as low cost model by IKEA; [54]), customization (Nespresso; [55]) or easy access (MySpace Music; [26]) etc, ultimately adding to their core benefit. The customers might also need help to get an important problem or situation solved [39].

The opportunity to provide new solutions comes usually from changes in technology, social environment or customer attitudes, policies & laws, or competition in the ecosystem [5], [56], [57]. Hawn [58] provides an example of novel BM in primary care practice which takes advantage of social media, such as Twitter and Facebook [58]. [20], [56], in turn, have analysed regulatory changes in telco BMs. Majority of research has named the advancement of technology as the major enabler for new BMs [3], [5], [6]. Brynjolfsson et al. [59] for instance discusses the BMs in cloud computing. A related issue is use of big data to provide new services, which seems to lead to more profound changes in the whole business ecosystem [60]. Easy transfer and analysis of big data were also the major enablers in Alpha and Beeta cases.

The above-mentioned issues work as triggers to the new possibilities, but also bring in some new problems (such as privacy and security) requiring specific attention in later phases more as well.

Systematic Analysis of the Business Model -Subprocess

The systematic analysis of the business model (right side of Fig. 1) starts from an ontology. Ontology is an explicit simplified conceptualisation of the objects, concepts, and other entities related to the co-BM. Examples of ontologies are Canvas [28], STOF [20], CSOFT [21] and VISOR [29]. They are intended for somewhat different settings, so some effort should be put to select suitable one(s). They can be applied first to sketch an idealistic or generic business model for the business network.

However, in reality there are always some **demand-side limitations** that must be taken into consideration in BM. Thus, in the next phase in the creation of co-BM, the companies should find out case and customer specific limitations and restrictions, and analyze their effects on the feasible realized BM instances. In practice this means that, if the markets are not homogenous, either the customer segment is reduced in size, or there will most probably be several different realized instances of the BM. For instance, in many cases more detailed investigation shows that there are different customer groups that each requires its own BM, or at least some modifications to the generic one. It is also often noted that the actual user and the buyer are not the same person, for example in Beeta case the customer companies acquire occupational health care services for their employees. Also, in some cases the medical service is used by the patient and his/her nurse together. Den Ouden [61] proposes use of experience flow charts and hypothetical archetypes of users/customers to gain insights. Bouwman suggests [62] BM stress testing to recognize strong and weak parts of the BM.

Often demand-side limitations also rise from the laws and regulations. An example is the regulations concerning privacy, which introduces many restrictions on storing and transfer of data on private persons. This is especially a great concern in health and wellbeing services (also in Beeta case). The laws, such as work licenses and employment contract acts, differ from country to country and they should always be checked (as in Alpha case). The same applies to taxation.

The next step is to consider **supply-side restrictions** that may affect the possibilities to offer specific products or services as planned. 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 above, in terms of offering and organization of the network, this implies that various market segments or areas should be served partially by different networks. This is especially important in global service business (such as Alpha case). De Reuver et. al. [63] have developed business model roadmapping approach that can be of help when defining the transition path to the desired model.

Finally, **reality checks** for the business model can be carried out with tentative proof-of-concepts, prototypes, SWOT analysis and

benchmarking. A reality check can focus on desirability, technological feasibility, functional testing, or economic viability of the BM. The results should be critically analysed and feed back to the previous stages should occur accordingly [64]. It is all about learning faster and cheaper. If the failure is realised early and becomes a source of learning, the effort is not totally wasted. Only after passing this reality check can the collaborative network start sales negotiations with potential customers.

The Organisational Change Management -Subprocess

All the above work toward realisation of co-BMI must be supported with a process of change management (left side of Fig. 1), which escorts the partners to harmonise the network strategy, and to synchronise its operations. There is no clear sequence of change management activities. Rather, they all run constantly affecting each other; perhaps only the emphasis between the activities is changed during the process. In our empirical study we recognised four activity categories:

Composing the Network: The literature constantly states that innovations and novel business models most often requires collaboration and learning outside the borders of the company [33], [65]. Exploration is about finding new opportunities for wealth creation through building new capabilities and innovation [66]. As organisations' histories, strategies, practices, hierarchies, cultures and infrastructure have an influence on the willingness to co-operation [64], the potential partners should have some previous experiences of each other or they are being recommended by some trusted third party.

One company in Beeta case called this activity as "hearing phase" and mentioned that a joint research project can be of help to launch the process. For instance a multi party research project, which studies new technologies or scans changes in social behavior of customers can help to create potential new joint business ideas. Finland, ranked as one of the most innovative countries in the world, has widely adopted this view: for instance the national Funding Agency for Technology and Innovation (Tekes) actively finances development of innovations that aim at new business operations through research projects where several

companies and universities do research together. The parties acknowledge the uncertainty of practical results from the joint research, sarcastically put in words by one of Alpha network partners when we discussed the strategic aims of the business network initiative: "*Here we have the safe possibility to jointly learn from experiences of failures*".

Interestingly, the companies do not necessarily want to include customers to the creation work. They see that the needs of a particular customer involved might get too much attention and the resulting BMI would not serve the other potential customers of the network. Instead, they see that more proper timing of co-creation with customers is during pilot testing.

There is no ready-made recipe for successful combination of network partners, but we would expect the organisations with the core capabilities to be also at the core of the network. A recent study [67], shows that the most value-add in networks is created either by the brand owners or the distributors. This points out the major players that at least should take part in the network: a company with good brand image, the owner or licensee of the business idea and the companies with access to the potential customers.

Naturally, the network partners may change as the innovation process continues. During the process the partners can realise that there is some capabilities missing from the network, which means that new partners may enter the network. Similarly some partners can leave the network.

Facilitation of Learning and Knowledge Sharing between the Partners is essential especially if innovative new ideas are wished for. Research [68] highlights the need for partners to reduce cognitive distance in order to better understand each other, and [69] argues the importance of communities-of-practice in tacit knowledge sharing.

Examples of useful methods in our case networks were: Workshops and brainstorming sessions with different set of participants; Critical issues raised by the participants were in some cases assigned as 'homework', i.e., sent to the individual parties for resolution; mini-scenarios were applied to estimate on the business potential via alternative future developments; Role plays made an abstract ideas more concrete by exchanging roles between parties/customers and acting accordingly in a fictive performance; Benchmarks or analogies

(e.g. from related industries) helped to make the business model more understandable and concrete.

Adjustments between Strategy, Processes and Business Model. To date, literature has identified some main issues in BMI: conflicts between the resource configurations underpinning the existing business model and those needed to develop the new business model [32], cognitive inertia within the focal firm due to the influence of an existing dominant business model logic [6], conflicts between or lack of firm internal organizational structures and processes to manage several business models [7], [57], [70]. All above reflect the need for harmonisation actions between strategies, processes and within each partner organization [71]:

1) **Harmonising the Strategies:** No company will adopt the co-BM if its aims conflict with the company's own strategies. In our cases, the core team in several workshops and other cross-boundary discussions assessed and interpreted the company strategies and sought a suitable common strategically adjusted goal for the network. The function of the business modeling procedure was to help to clarify the differences of interpretations and clarify dependencies. The BM sketches developed gradually towards the final boundary object, and hence served as conscription devices [52].
2) **Harmonising the Processes:** In order for the network business model to be adapted to the activities of the member companies in practice, it is to be adjusted at the detailed level which requires boundary objects such as *rules, taxonomies and databases* [72]. An important aspect is to ensure data compatibility between the information systems of the partners. In our cases the members looked at the kinds of processes they already had and how the network could, by combining these processes, produce the desired outcome. Later on some process designs were suggested to be jointly drafted towards common process definitions.
3) **Intra-Organisational Changes:** Our empirical cases evidenced that internal change management within a participating company is essential, if a partner hopes to gain approval for the cooperation by its staff members. As the co-BM might form only part of partners' operations, it has to be harmonised with the BMs and processes

applied for producing other products and services. Thus, the company representatives of our cases were engaged for considerable periods in negotiations and lobbying at different levels within their own organisations. The internal adaptation was regarded necessary in order for the network's operations to be able to be accepted by each company and to be adapted to the company's own processes.

Assessment of the Viability of the Joint Model: Here we want to stress the importance of equity in addition to traditional efficiency as criteria for assessing cooperative networks. With equity we mean 'fair deal', which does not require that inputs or outcomes are always divided equally between the parties, but all parties receive benefits proportional to their investment [73] (some call it experience of reasonableness, e.g. [74]). We find this strive for fairness to be a distinctive character of collaborative networks. The partners are pondering the fairness of the deal from their point of view and either continue in the network or if not satisfied, step out or renegotiate the terms of the co-operation.

In our empirical cases the co-BM sketches and results of pilots and prototypes were used by the partners to assess the feasibility and fairness of the joint endeavor. The discussion over the BM brought up financing and ownership of information as the most problematic issues within the planned cooperation.

Action: The dual process of co-BM innovation finally comes to a point where the new BM is ready for real action, i.e. architecting for joint solution and detailed process design, and pilots towards implementation in an iterative manner. Even though in the previous phases the BM or parts of it has been prototyped or otherwise tested with pilot customers, there will most probably come up some aspects that requires going back to previous steps in the co-BMI process, hence underlining the importance of fast turnarounds in the innovation process to ensure preparedness for the change

6 Discussion and Conclusions

In this paper we discuss BMI in the context of business networks, which are promoted in literature to be the leading way of organising profitable, agile business in future [9], [75]. Building on our experiences in two action research studies, we present a conceptual framework for the co-BMI process where the parties are negotiating on BM for their joint network.

We noticed that co-BMI is a two-stream process: on one hand it includes the sketching of components of a business model and creation of the business model. But it also includes many activities of organisational change. Therefore our framework outlines 1) the organisational change subprocess in parallel to 2) analytical BM creation subprocess. In brief, the analytic and rigorous co-BM creation subprocess starts with business model ontology definition, continues with the creation of generic co-BM, and then modifying it according to the demand-side requirements and supply-side restrictions of the network, The resulting co-BM is pilot tested and changes are made accordingly. The organisational change management and related process innovations, in turn, include selection of partners; facilitation of learning; adjustments of strategies and processes between the parties and internally within each partner company; and assessment of feasibility of the collaborative BMI. By understanding this dual process we can coordinate BMI better among parties and analyse, which BMI related decisions contribute or hinder the joint development because of internal or external causes.

In essence, the business model serves as a dynamic translucent boundary object, for the negotiations between the (potential) partners over the central aspects of the networked collaboration and internal change requirements. This bargaining and sense making process gives opportunities for mutual learning between the parties and provides means to assess uncertainty associated with the deal, the roles, sharing of costs and benefits and the other's trustworthiness. Thus, as a result, the parties can assess the fairness of the deal and get prepared for the necessary investments and changes in their organizations.

Our contribution to BM, BMI and Network literature is that we present conceptual framework for understanding the process of creating joint business models for business networks. It gives a view on the

tasks and challenges for network of companies innovating new business models.

Further research is needed to provide more insight into the various steps of the process, and especially on the iteration along the design and between the dual processes. It would be fascinating to study the validity of our process model in differing settings: from early attempts to renewal of co-BMs. Finally, there is still much to be done to improve the tools for the analysis of the BMs and for supporting the organisational change.

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