

Assessing the potential performance of network business model: Performance indicators for “physical activity prescription”

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Abstract

The commercialization of new inventions requires a feasible and viable business model. But, how do we evaluate its potential performance, especially as more often the innovation requires collaboration between several firms? The objective of this paper is to demonstrate a framework for estimating performance in a networked business models. Our research method is action research. The empirical data comes from a case of business model creation for “physical activity prescription” by network of four companies in Health and Wellbeing sector. By combining existing approaches for business modeling and business networks with our empirical data, we describe the focal points of performance estimation in the context of business network. The results highlights the importance of measuring all main components of the business model and also the business network partners’ view on trust, contracts and fairness.

Keywords. Business Model, Business Model Tooling, Metrics, Performance indicators, Action Research

Introduction

Business modeling is already widely adopted method in companies to generate new innovative business ideas. The purpose of business model (BM) is to show the general logic that creates the business value; the customers segment, service, organisation, technology and financing (Bouwman et al., 2008). Therefore BM, as a representation of the corporate or network strategy, is the starting point for planning operative business processes (eFactors, 2002). The virtue of a BM is that it considers the business from a conceptual level making it somewhat independent of current processes and restrictions of the companies (Heikkilä, 2010). Unfortunately the high conceptuality and disconnection of BM from current processes makes their practical implementation somewhat problematic. The literature is lacking studies on how to implement BM concepts, and how to measure their performance. Performance indicators are even more important in the current networked way of organising business, where they can help to evaluate the impact of specific decisions on performance of the whole collaborating network and also to the achievement of fruitful collaboration between the partners.

In this article we study how performance metrics were created to support the business model. Through an empirical study of a business network, we illustrate the performance metrics in the context of business network. This paper is structured as follows. First we will discuss the concepts of BM and components of network performance. Next, we will demonstrate the practical usability of

performance indicator framework in one case. Finally, we will draw some conclusions and will outline opportunities for future research.

Business Models & Components of Network Performance

In essence, the topics discussed in the BM literature are not new: the components of BM 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 innovations (Chesbrough & Rosenbloom, 2002). The interest in BM has boomed since the 1990s (Osterwalder, 2004). In Feb 2013, the Fortune announced that “Business-model innovation is the new essential competency” (Colvin, 2013). Also, in academic literature, the concept of BM has received enormous attention. There is a vast research stream proposing definitions, taxonomies, change methodologies and evaluation models for business models (e.g. Timmers, 1998; Amit & Zott, 2001; eFactors, 2002; Magretta, 2002; Hedman & Kalling, 2003; Faber et al., 2003; Bouwman, 2003a, 2003b; Haaker et al., 2006; Lambert, 2008; Heikkilä, 2010; Heikkilä & Heikkilä, 2013; El Sawy & Pereira, 2013).

The definitions are many: Osterwalder (2004, p. 14) characterises business model as “*the translation of a company's strategy into a blueprint of the company's logic of earning money.*” Venkatraman and Henderson (1998), in turn, define BM as “*a coordinated plan to design strategy along the customer interaction, asset configuration and knowledge leverage vectors.*” However, the literature is rather consistent on the main components of a BM. Based on the on-going research (Bouwman et al, 2013) it would be beneficial to consider these 5 components when designing the performance metrics:

Customers: the customer segment or segments that are targeted. The aim is to understand the need of the customer and what kind of customer relationship is established (Osterwalder & Pigneur 2010).

Service: describes the value of the service and how it is provided to the customer (Amit & Zott, 2001; Bouwman et al. 2008; Osterwalder & Pigneur 2002).

Organisation: describes the knowledge, intellectual resources and other core resources needed, as well as the roles and responsibilities. The resources can be found within one organisation but often there is need to combine resources and capabilities of several organisations.

Finance: focuses on payment schemes, and cost and revenue sharing between the partners. Financial performance is traditionally been the main focus of performance estimation.

Technology: depicts the information and communication technology that is embedded in the service, or supports the operations and collaboration. Many of the BM ontologies consider technology as one of the core pillars of business models (Bouwman et al 2008; Heikkilä et al, 2010), some merge it within organizational issues component (Osterwalder & Pigneur, 2010).

Furthermore, we would like to append the BM view with specific attention to the collaboration in business networks (Bouwman et al, 2013). Solaimani and Bouwman (2013) proposed a framework that identifies information (or knowledge) exchange, process alignment, and value exchange as core areas when analysing the inter-organizational interaction in context of business model innovation. Much in line with the above, Heikkilä (2010) proposed that business modelling process acts as a dynamic boundary object (Star & Griesemer, 1989) for the negotiations between the partners over the central aspects of the collaboration. Figure 1 adapted from Heikkilä (2010) summarises our

understanding over the triple role of network's business modelling process in collaborative networks. First role is to related to advancing learning, knowledge sharing and trust between the parties; Second role is to help to agree over processes and rules, which can be operationalised into formal coordination mechanisms, such as written contracts. And third, it helps in the evaluation of fairness of the deal. After all, in the long run sustainable cooperation requires fair play, trust and some formal contracts. All of them can be advanced during the business model negotiation.

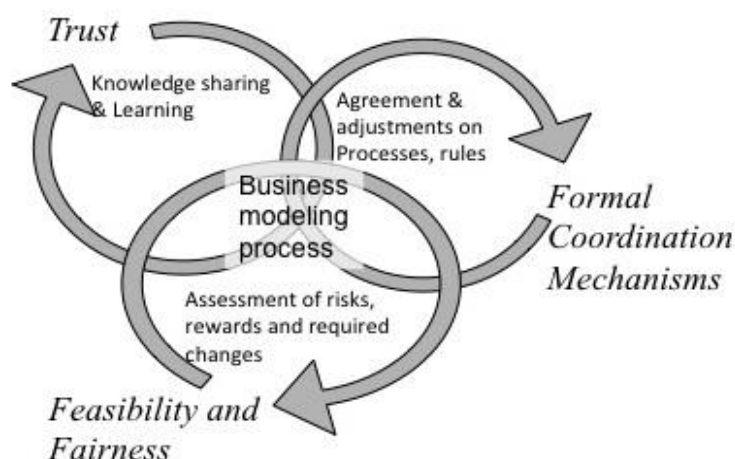


Figure 1. Triple role of business modelling process in fostering the collaboration in business networks.

Therefore, we add the three following perspectives to networked business modelling:

Learning & Trust: Trust is claimed to be the generic coordination mechanisms in networks (Adler, 2001; Powell, 1990; Lorenzoni and Baden-Fuller, 1995). The business model creation, negotiation and sense making gives opportunities for mutual learning and knowledge sharing between the parties. During this interaction the trust between the parties builds up (Ring & van de Ven, 1994).

Processes & Formal Mechanisms: Successful co-operation requires that the parties are willing to align their internal strategies and processes to better fit with the network business model. This includes alignment of processes both within each company and between the partners. The rules and practices have to be agreed between the parties either thru social norms or written contracts.

Fairness & Value: Ring and van de Ven (1994) point out the importance of equity in addition to traditional efficiency as criteria for assessing cooperative networks. Equity means ‘fair deal’, where inputs or outcomes are not always divided equally between the parties. We find this principle of fairness to be a distinctive character of collaborative networks. The partners are allowed to question 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 other words, the needs of the participants must be nurtured through regular and open interaction.

Performance indicators are items of information collected at regular interval to track the performance of a system (Fitz-Gibbon, 1990). They compare actual results with a pre-set target, and to measure the extent of any deviation (Fortuin, 1988). To be able to improve the business model and to help

turning the business globally scalable we need information and measures of the business from different perspectives. Multiple perspectives are represented as the network's key performances. To be able to evaluate the chosen business model and find the best performance indicators we need to decide the first set of metrics. Here financial metrics alone are not sufficient, but the metrics should help to cover all components of the networked BM. The performance indicators should be selected due to very practical reasons: their simplicity, easiness in accessing the data and reliability of the data. The indicators are measured also because the future needs of the business: when the business will be acquiring added resources from eg. venture capitalists these verified metrics will be valuable. At the same time these indicators are found to be universal indicators of successful services and business.

Case Study: Physical Activity Prescriptions

The case example examined in this article is “physical activity prescription”, a new service innovation in preventive health care (Table 1). The case is about four independent firms in Health & Wellbeing sector aiming to jointly provide a new service for business and private customers, i.e. building a preventive health care system. The duration of research study is 3 years (still on-going) and we had tens of meetings, interviews and discussions with the network partners, including international business seminar and business modelling workshops.

Table 1. Description of the empirical case

<i>CASE</i>	A network business model innovation: “Physical activity prescription”
<i>Industry sector</i>	Health & Wellbeing
<i>Customers</i>	National level B-to-C, customer potential 800 000 per year, B-to-B, customer potential 100 000
<i>Value proposition</i>	Novel wellbeing services for current patients and occupational healthcare customers; and a preventive up-to-date health care system.
<i>Network's core companies</i>	1. Provider of health care services 2. Chain of 64 privately owned pharmacies 3. Producer of pharmaceutical products 4. Provider of consultancy services for pharmacies and wellbeing sector

The value add in the new business model comes from totally new process consisting of tasks carried out in multiple organisations. This requires also information systems that facilitate and support the new processes across the organisations. Currently, the partner companies do not have a joint business collaboration, excluding retailing other companies products. But they do have partly the same customer base. Before committing to the co-operation and investing in it, a proof of concept will be carried out to demonstrate whether the business model is sound. For proof of concept a minimalist pilot service, so called minimum viable product (Ries, 2011), is carried out to demonstrate how the business idea will play out in the real world and why, really, all the core companies are needed to provide the services.

Research method

Our research method is action research, where we researchers actively participate in the business decisions by producing knowledge for the network players (Heikkilä & Kuivaniemi, 2012; Heikkilä & Heikkilä, 2013). Action research is an established research method in social sciences, and has lately also increased in importance in management and IS research (Baskerville and Myers, 2004; Lau 1997). Susman and Evered (1978) contend that action research is future oriented, collaborative, involves change, generates theory grounded in action, and is situational (Reason & Torbert, 2001). The researcher is simultaneously studying the phenomenon and creating organisational change (Baskerville and Myers, 2004). and the researchers and the research object are assumed to be interactively linked so that the findings are literally created as the investigation proceeds (Guba and Lincoln, 1994).

Often action research has the four major characteristics (Baskerville, 1999, p. 6):

1. Action research aims at increased understanding of certain phenomenon or social situation, with emphasis on its complex and multivariate nature.
2. Action research simultaneously assists in practical problem solving and expands scientific knowledge.
3. Action research is performed collaboratively and enhances the competences of the respective actors.
4. Action research is primarily applicable for the understanding of change processes in social contexts.

Baskerville and Wood-Harper (1996) note that action research is one of the few valid research approaches that researchers can legitimately employ to study new or changed methodologies and coordination of activities. In our case research we have a new situation, introduction of the networked co-operation. We cannot study the case without intervening in some way in the 'real world' of the practitioners. Since, action research builds on the idea of intervention, we consider it as a valid research approach for our topic.

From research philosophical point of view we count ourselves as pragmatists. We aim to make purposeful use of propositions, models, or theories and aim at helping people to better cope with the world or to create better organizations (Wicks and Freeman, 1998). Our theoretical reasoning is moving back and forth between empirical discovery and theory in abductive manner (Paavola, 2006). Even though it has been heavily criticized, abduction is seen as a method to test new ideas or to make sense of new situations (Richardson and Kramer, 2006), which is the case in the creation of novel networked business. 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 (Dubois and Gadde, 2002).

The BM & Performance Metrics

In this chapter we will show how metrics were found in designing the BM in our empirical case of network BM innovation. The design process consists of five steps adapted from Hartogh & Verschuren (2005) presented at Table 2. At the point of writing this article, we are about to start the piloting phase. Therefore only the four first stages are covered so far.

Table 2. Description of the design process and the data collection.

Phasing	Task	Data Collection
Idea	Discussing initial idea and earlier solution proposal: discussing the ethical and financial value of the service from societal, network, company and customer levels. Contacting and agreeing with the partners to take part in the BM innovation process. Launching a multidisciplinary research project. a special session on business models for health and wellbeing sector at a scientific conference (EBRF 2011).	Videos, photos of the session and documentation of the concluding CANVAS.
Requirements and assumptions	Selecting several Business Model tools. Connecting the business idea with changes required in current processes. Discussion of alternative IT solutions.	Workshops with the BM tool experts. Testing alternative BM tools (CANVAS, STOF, CSOFT). Interviews, workshops. Negotiations, interviews.
Identify solution	Creating business model descriptions for the network and for each individual partner. Defining Performance indicators for network business model.	Series of workshops with the key representatives of the partner companies. Discussions with key representatives. Interviews of key partners on trust issues in networks.
Service process prototype	Minimum viable product pilot of the service without IS support.	Observation. Collecting performance indicator information. Interviews of customers & partners during and after the pilot.
Implementation	Not yet defined	
Evaluation	Not yet defined	

Initially, the business opportunity was recognized by an entrepreneur back in 2007. The possibility of a single entrepreneur to pursue the opportunity this vast and establish a network able to turn the opportunity into a substantial and sustainable business was not likely to happen. As growth venturing researchers the authors were interested to this situation, which lead to negotiations with the entrepreneur on whether he would be interested to let the researchers investigate on the creation of the business if at the same time the research would participate in building the needed network and ecosystem (see Heikkilä & Kuivaniemi, 2011).

The authors want to find out how successful Health & Wellbeing companies have managed to create and grow their businesses to global markets and by whom this would be possible in the case of

“physical activity prescription”: As the author team investigated globally scalable business models they created a mutual, team level understanding on how the business network should be established and how this information could be further developed. This could be accomplished through diverse business modelling from multiple perspectives with the network partners and defining the key performance metrics.

After initial discussions with all potential partners, the researchers analysed the business model with BM tools such as CSOFT (Heikkilä et al., 2010), STOF (Bouwman et. al, 2008) and made some risk analysis. Then in a series of workshops the group of companies created and analysed the new BM with Canvas (Osterwalder & Pigneur, 2010). Canvas was selected as the presentation tool since many of the partners were already familiar with it. The resulting BM is presented in Figure 2.

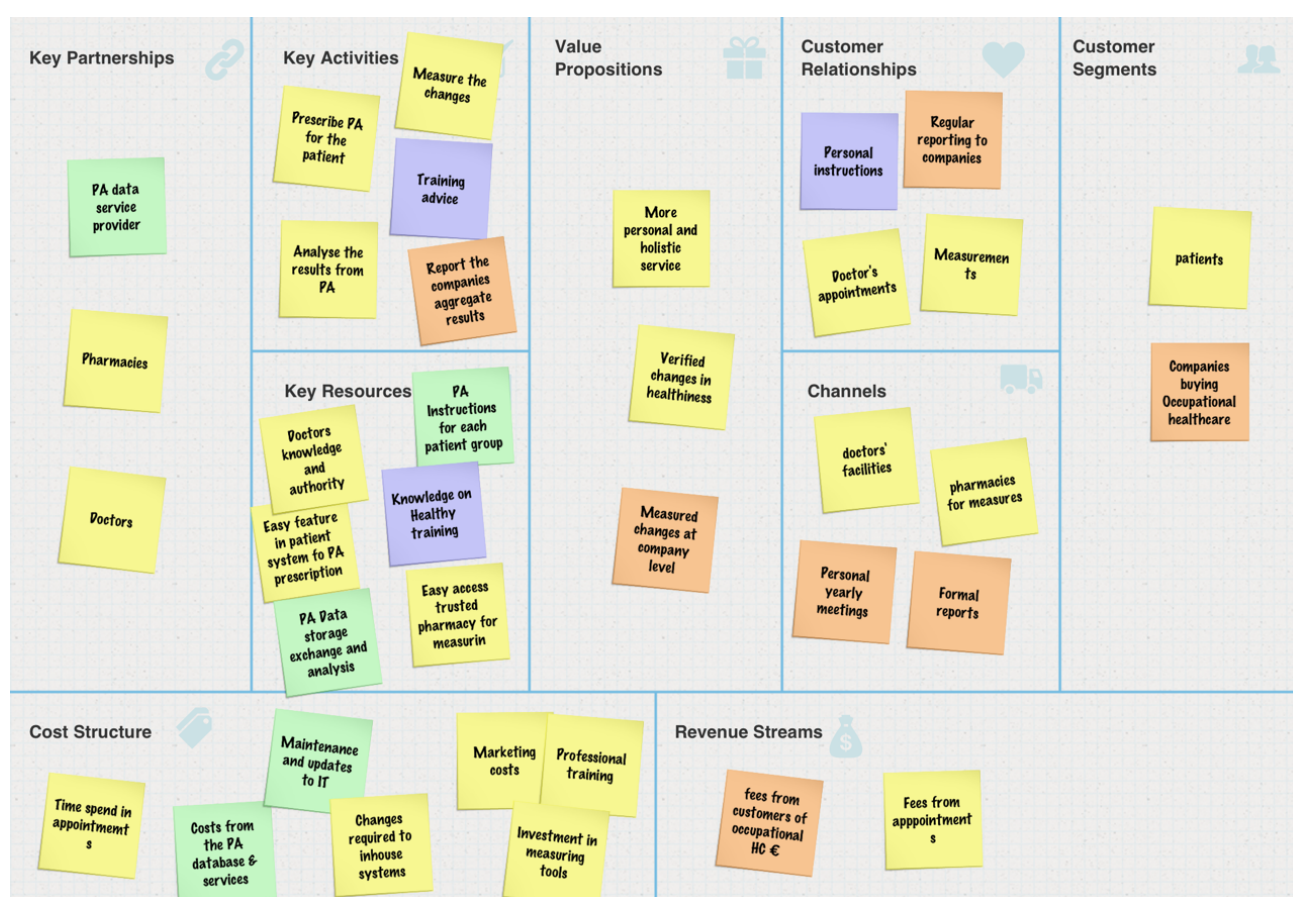


Figure 2. The “physical activity prescription” BM

Before committing to the co-operation and investing in it, a proof of concept is needed to demonstrate whether the business model is sound. For proof of concept a minimalist pilot service, a minimum viable product (Ries, 2011), is carried out to study how the business idea will play out in the real world and why, really, all the core companies are needed to provide the services. Following the BM development process suggested in CSOFT (Heikkilä et al., 2010), we also put effort in defining the first performance metrics, that would provide information on the successfulness of the joint BM. The first initial measurement could already be obtained from the pilot. The performance indicators could then be revised based on the pilot results. The core requirement was to have a limited, but well focused set of metrics. The performance indicators should have a clear focus, be essential and not conflicting. The indicators are presented below in Table 3.

Table 3. Performance metrics for the empirical case.

Perspectives	objective	Performance metrics
Customer	Potential customer base Market visibility	Number of potential customers in different segments Number of national mainstream media articles
Service	User experience Value	The dropout rate from each service steps The second purchase rate Willingness of customers to recommend the service to their friends The average customer satisfaction
Technology	Applications Architecture, Hardware Data	Service providers' data base visits -% Availability (24-7) & response time Extensibility of new functions Quality, integrity
Organization (internal and external)	Organization network, complexity, density and structure	The amount of service providers The reach of service providers related to the geographical dispersion of the customers ("we reach 82% of Finns")
Finance	Profitability Cost/Risk	Net profit % ROI Revenue growth %
Fairness & Value	Fairness, sharing of risks and costs	Fairness of value distribution: How does value creation occur to every network partner? Intention of partners to continue in the network in the future
Learning & Trust	Knowledge availability, Exchange and flow in organization network; Level of trust	The frequency of interaction Losada line (Losada & Heaphy, 2004) Interparty Trust: The partner firms in the alliance can be trusted to make sensible alliance decisions, The counterparts in each company provide required information (Luo, 2008)
Processes & Formal Mechanisms	Process intensity Process quality (efficiency, effectiveness, Diversity of processes Process flow Contracts	Number of active participants in each network organization Evaluation of processes: Number of errors/reclamations & Handling of reclamations (time, number of contacts)

The indicators were created with the business network partners and within the research team. Some of the performance indicators are general business indicators (eg. willingness of customers to recommend the service to their friends, net profit percentage), while others are strictly related to network performance from the human side (eg. Losada line). These indicators are tested and evaluated after the piloting of the network based business.

Discussion and Conclusions

The objective of this paper was to study performance estimation of networked business models. Building on findings from an on-going research (Bouwman et al, 2013) we combine research on business modeling and business networks, and propose that a balanced set of performance indicators can be defined by paying attention to all main components of the business model enriched with more social measures of network collaboration. Our framework includes total eight perspectives: the components of a business model (customer, service, technology, organization, finance) and social network collaboration (fairness & value, learning & trust and processes & formal mechanisms). The indicators of the business model components provide information on the (potential) success of the business idea itself. The social, network level indicators, in turn, provide information on the atmosphere towards co-operation between partners.

We applied the framework in an action research study on business model creation by network of four companies in Health and Wellbeing sector. Next, the performance indicator data will be collected in a pilot test of the service. Thereafter we can also evaluate the suitability of the selected measures and adjust the set of performance indicators accordingly.

This article studied performance measures in collaborative business networks. There are still many ways in which we can further our understanding on this topic. Here we defined the performance indicators for a potential business network. It would be fascinating to study the performance metrics as the network evolves from early phases to maturity, and to closing stages. This would provide a dynamic view on how the set of metrics and their relative importance changes in time. Also, more conceptual studies could be carried out to analyse the performance measurement in the context of networked business models.

References

- Adler, P. (2001). Market, Hierarchy, and Trust: The Knowledge: Economy and the Future of Capitalism. *Organization Science*, 12(2), 215–234.
- Amit, R., & Zott, C. (2001). Value creation in E-business. *Strategic Management Journal*, 22(6-7), 493–520.
- Baskerville, R. (1999). Investigating Information Systems with Action Research. *Communications of the Association for Information Systems*, 2, Article 19, 1-32.
- Baskerville, R., & Myers, M. (2004). Special issue on action research in information systems: making is research relevant to practice--foreword. *Mis Quarterly*, 28(3), 329–335. Retrieved from <http://dl.acm.org/citation.cfm?id=2017229>
- Baskerville, R., & Wood-Harper, A-T. (1996). A critical perspective on action research as a method for information systems research. *Journal of Information Technology*, 11, 235–246.

- Bouwman, H., (2003a). State of the art on Business models. Research paper, TU Delft, Telematica Instituut, B4U/D3.2.
- Bouwman, H., (2003b). Designing metrics for business models describing Mobile services delivered by networked organisations. Proceedings of the 16th Bled Electronic Commerce Conference eTransformation, Bled, Slovenia.
- Bouwman, H., Heikkilä, J., Heikkilä, M., & Solaimani, S. (2013). Business Models and performance indicators. working paper, University of Turku.
- Bouwman, H., De Reuver, M., Solaimani, S., Daas, D., Haaker, T., Janssen, W., Iske, P., et al. (2012). Business models, tooling and research agenda. In R. Clark, A. Pucihar, & J. Gricar (Eds.), *The first 25 years of the bled conference*. Kraj: Moderna organizacija.
- Bouwman, H., De Vos, H., & Haaker, T. (2008). *Mobile service innovation and business models*. Springer.
- Calvin, G. (2013). Your business model is obsolete. *Fortune*, Feb 25, 2013.
- Chesbrough, H., & Rosenbloom, R. (2002). The role of the business model in capturing value from innovation: evidence from Xerox Corporation's technology spinoff companies. *Industrial and Corporate Change*, 11(3), 529–555. Retrieved from <http://icc.oxfordjournals.org/content/11/3/529.short>
- Guba, E., & Lincoln, Y. (1994). *Competing Paradigms in Qualitative Research*. In N. Denzin and Y. Lincoln (Eds.), *Handbook of qualitative research*. Sage Publications.
- Dubois, A., & Gadde, L-E. (2002). Systematic combining: an abductive approach to case research. *Journal of Business Research*, 55, 553–560.
- Dubosson-Torbay, M., Osterwalder, A., & Pigneur, Y. (2001). eBusiness Model Design , Classification and Measurements. *Thunderbird International Business Review*, 1–22.
- EFactors. (2003). E-business Model Roadmap, Deliverable 3.1. IST-2001-34868, EUROPEAN COMMISSION IST PROGRAMME. Retrieved from http://www.wi.uni-muenster.de/wi/studies/archive/izi/ss05/E-FACTORS_D3_1.pdf
- El Sawy, O. A., & Pereira, F. (2013). *Business Modelling in the Dynamic Digital Space: An Ecosystem Approach*. Springer.
- Faber, E., Ballon, P., Bouwman, H., Haaker, T., Rietkerk, O., & Steen, M., (2003). Designing business models for mobile ICT services. Proceedings of the 16th Bled Electronic Commerce Conference eTransformation, Bled, Slovenia.
- Fizz-Gibbon, C.T. (1990). performance indicators. *Bera Dialogues*, no 2.
- Fortuin, L. (1988). Performance indicators-Why, where and how? *European Journal of Operational Research*, 34(1), 1-9.
- Haaker, T., Faber, E., & Bouwman, H., (2006). Balancing customer and network value in business models for mobile services. *International Journal of Mobile Communications*, 4(6), 645-661.

Hedman, J. and Kalling, T. (2003) The business model concept: theoretical underpinnings and empirical illustrations, *European Journal of Information Systems*, 12 (1), 49–59.

Heikkilä, M. (2010). Coordination of complex operations over organisational boundaries. University of Jyväskylä. Retrieved from http://scholar.google.fi/scholar?as_ylo=2009&q=heikkilä+marikka&hl=en&as_sdt=0,5#6

Heikkilä, M. & Heikkilä, J. (2013). Collaborative business model innovation process for networked services, *Proceedings of the ICEC 2013, the 15th International Conference on Electronic Commerce*, Turku, Finland.

Heikkilä Marikka & Kuivaniemi Leni (2012). Ecosystem Under Construction: An Action Research Study on Entrepreneurship in a Business Ecosystem. *Technology Innovation Management Review* (June 2012: Global Business Creation):18-24. Available at <http://timreview.ca/article/564>

Heikkilä, J., Tyrväinen, P., & Heikkilä, M. (2010). Designing for performance - a technique for business model estimation. In M. Seppä, N. Helander, & I. Ilvonen (Eds.), *Proceedings of EBRF*.

Kaplan, R. S., & Norton, D. P. (1992). The balanced scorecard-measures that drive performance. *Harvard Business Review*, 70(1), 71–9.

Lambert, S., (2008). A Conceptual Framework for Business Model Research. *Proceedings of the 21st Bled eConference eCollaboration: Overcoming Boundaries through Multi-Channel Interaction*, Bled, Slovenia.

Lau, F. (1997). A review on the use of action research in information systems studies. In Lee, A., Liebenau, J. & DeGross, J. (eds.) *Information systems and qualitative research*, 31-68.

Lorenzoni, G., & Baden-Fuller, C. (1995). Creating a Strategic Center to Manage a Web of Partners. *California Management Review*, 37(3), 146-163.

Losada, M. & Heaphy, E. (2004). The Role of Positivity and Connectivity in the Performance of Business Teams: A Nonlinear Dynamics Model. *The American Behavioral Scientist*, 47(6), 740-765.

Luo, Yadong (2008), Structuring Interorganizational Cooperation: The Role of Economic Integration in Strategic Alliances. *Strategic Management Journal*, 29, 617-637.

Magretta, J. (2002). Why business models matter. *Harvard business review*. Retrieved from <http://info.psu.edu.sa/psu/fnm/asalleh/MargarettaWhyBusModelMatter.pdf>

Neely, A., Gregory, M., & Platts, K. (1995). Performance measurement system design: a literature review and research agenda. *International Journal of Operations & Production Management*, 15(4), 80–116. Retrieved from <http://www.emeraldinsight.com/journals.htm?articleid=848862&show=abstract>

Osterwalder, A. (2004). The business model ontology: a proposition in a design science approach. de l'Ecole des HEC de l'Université de Lausanne.

Osterwalder, A., & Pigneur, Y. (2010). *Business model generation: a handbook for visionaries, game changers, and challengers*. John Wiley & Sons.

Osterwalder A., & Pigneur, Y. (2002). An e-Business model ontology for modelling e-Business. In Loebbecke et al. (Eds.), *The proceedings of the 15th Bled Conference on E-Commerce*, Bled, Slovenia.

Paavola, S. (2006). *On the Origin of Ideas : An Abductivist Approach to Discovery*, (Diss. thesis, University of Helsinki, Department of Philosophy). Retrieved from <http://urn.fi/URN:ISBN:952-10-3487-4>

Powell, W.W. (1990). Neither Markets nor Hierarchy: Network Forms of Organization. *Research in Organizational Behavior*, 12, 295-336.

Reason, P., & Torbert, W. (2001). Toward a Transformational Science: a further look at the scientific merits of action research. *Concepts and Transformations*, 6(1), 1-37.

Richardson, R., & Kramer, E. (2006). Abduction as the type of inference that characterizes the development of a grounded theory. *Qualitative Research*, 6, 497-513.

Ries, E. (2011). *The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses*. Crown Publishing: New York.

Ring, P., & van de Ven, A. (1994). Developmental Processes of Cooperative Interorganizational Relationships. *Academy of Management Review*, 19(1), 90-118.

Solaimani, S., & Bouwman, H. (2012). A framework for the alignment of business model and business processes: A generic model for trans-sector innovation. *Business Process Management Journal*, 18(4), 655-679.

Star, S. L., & Griesemer, J. R. (1989). Institutional ecology, 'Translations' and Boundary Objects: Amateurs and Professionals in Berkeley's Museum of Vertebrate Zoology, 1907-39. *Social Studies of Science*, 19, 387-420.

Susman, G., & Evered, R. (1978). An Assessment of the Scientific Merits of Action Research. *Administrative Science Quarterly*, 23(4), 582-603.

Timmers, P. (1998). Business models for electronic markets. *Electronic markets*, 8, 3-8.

Venkatraman, N., & Henderson, J. C. (1998). Real Strategies for Virtual Organizing. *Sloan management Review*, 40(1), 33-48.

Verschuren, P., & Hartog, R. (2005). Evaluation in Design-Oriented Research. *Quality & Quantity*, 39(6), 733-762.

Wicks, A., & Freeman, E. (1998). Organization Studies and the New Pragmatism: Positivism, Anti-Positivism, and the Search for Ethics. *Organization Science*, 9(2), 123-140.