Designing a Method for Defining and Monitoring Business Model Performance Indicators

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Abstract

A business model provides a description or architecture of how a company creates, delivers, and captures value. Business model performance management refers to the continuous monitoring of performance indicators and changes in the environment to control business model performance and timely trigger business model (re-)design. The business processes of a company produce a wealth of data and information about a company's operational performance, which may be aggregated to a higher level, i.e., the tactical level of the business model. However, process data may not always be directly mappable to business models because a complex relationship exists between the two concepts. Existing studies provide little insight or guidance on how business model performance indicators can be defined and monitored. To address this knowledge gap, we will employ a design science research approach to develop a method for the definition and monitoring of business model performance indicators. This research aims to contribute to BPM research by exploring the relationship between business models and business processes.

Keywords

Business Models, Performance Indicators, Performance Management, Business Processes, Process Performance, Design Science Research

1. Research Problem

The business model has become a prominent concept to describe the way a company does business. It is defined as the design or architecture of how a company creates, delivers, and captures value [1]. A business model functions as an interface between a company's business strategy and its business processes, including its IT systems [2, 3]. While a business model describes a company's business logic in a rather abstract way, business processes provide a more detailed representation of how a company conducts its operations [4, 5]. To support the design and definition of business models, scholars have developed a wide range of business model tools, including the Business Model Canvas [6], e-3 value ontology [7], and Service Dominant Business Model Radar [8, 9].

Business model performance management refers to the continuous monitoring of performance indicators and changes in the environment to control business model performance and timely trigger business model (re-)design [10, 11, 12, 13]. From a top-down perspective, monitoring business model performance allows managers to track whether a business model is implemented effectively [11, 12]. Suppose the performance of an operational business model deviates from its expected performance. In that case, this may trigger managers to create detailed descriptions and action plans for business model elements, that can serve as input for business process (re-)design [5, 14]. From a bottom-up perspective, the business processes of a company produce a wealth of data and information about the operational performance of a company [15, 16, 17]. The aggregation of process data to a higher level of the company, i.e., the tactical level of the business model [2, 3], may provide relevant insights about the

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configuration of a companies' business model, as well as the interaction between business model elements [18].

However, process performance data may not always be directly mappable to business models because a complex relationship exists between business models and business processes [14, 19, 20]. Since both concepts are interconnected, changes in a company's business model may affect one or more of a company's business processes, and vice versa. The challenge of monitoring the performance of a business model has become even more pronounced in today's multi-stakeholder business settings, since it may require business actors to share potentially sensitive data [21].

Defining and monitoring business model performance indicators is a relevant way to manage business model performance [12, 22, 23]. Yet, existing studies provide little insight or guidance on how business model performance indicators can be defined [24, 25] or how business model performance can be monitored [22]. Despite the importance of managing business model performance, most business model monitoring efforts in practice are limited to monitoring financial performance [10]. Although there are a few studies on business model performance [12, 22, 26, 27, 28, 29], current studies mainly focus on performance evaluation in the early phases of a business model, i.e., assessing business model design.

To address this knowledge gap, this research aims to develop a method to support the definition and monitoring of business model performance indicators.

2. Research Design

To develop the method, a design science research methodology will be employed. Design science research is a methodology developed in the field of information systems (IS), with the goal to solve practical problems by designing and developing artifacts [30, 31]. A standard design science research methodology (DSRM) by Peffers et al. [32] will be followed to design and develop the artifact. Accordingly, the research process will involve identifying the problem and objectives of the solution (method), designing and developing the method, applying it in a suitable context, and evaluating it in a real-life business setting to examine its validity and utility. The primary research activities are visualized in the research design diagram in Figure 1.

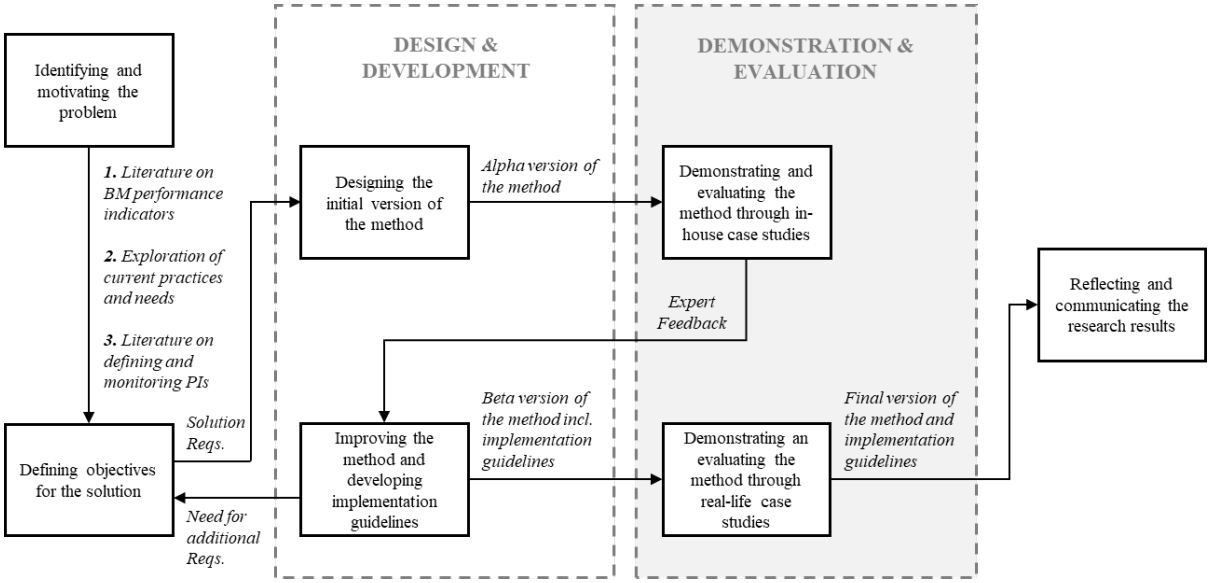

Figure 1: Research design diagram

First, the problem will be identified and motivated through three research activities. The first activity is a structured literature review (SLR) on business model performance indicators. The goal of this SLR is to investigate and synthesize the existing knowledge about business model performance. We will apply the SLR procedure by Kitchenham and Charters [33] to structure our review. The scientific

databases Scopus and Web of Science will be searched to find studies that identify, analyze, and monitor any kind of performance indicator of business models. We consider the combination of these two databases to cover the appropriate academic publication venues. Potential keywords for searching the databases are a combination of the terms 'business model', 'performance indicator', 'performance metric', and 'performance measure'.

As the second activity in the problem identification and motivation phase, we will conduct exploratory semi-structured interviews with business model experts from academia and practice to gain a better understanding of the current practices and needs in business model performance management. To guide the interviews, we will develop an interview protocol based on the results of the literature review on business model performance indicators. For the selection of the interviewees, we will contact the key authors of the relevant articles identified in the literature review. Moreover, we will consider reports on business models performance management from industry to identify practitioners with relevant practical knowledge.

The third activity in the first DSR step is to conduct an SLR on existing approaches for defining and monitoring performance indicators. The definition of performance indicators has been a major field of study in other research fields, such as Business Process Management (BPM), Enterprise Modeling, Project Management, and Managerial Accounting. These fields have been more mature than the business model domain, hence we see a potential to transfer and utilize the existing knowledge from these fields to business models. Therefore, the goal of this SLR is to find the outstanding work in relevant fields and analyze the existing approaches for defining and monitoring performance indicators from a business model perspective. For this literature review, we will apply the forward and backward snowballing approach by Wohlin [34] to structure our literature search. This snowballing procedure allows us to identify relevant articles based on a starting set of seminal papers. We aim to examine both academic and grey literature (e.g., Gartner, BPTrends) that discuss relevant methods and techniques for defining and monitoring performance indicators.

The objectives for a solution will be logically derived from the three research activities in the problem definition and motivation phase [32]. Based on the requirements and knowledge from the existing literature and business model experts, the initial version of the artifact will be developed. We will employ a method engineering approach [35] to iteratively design and develop the artifact, i.e., a method for defining and monitoring business model performance indicators.

After having designed the initial version of the artifact (i.e., the alpha version), we will demonstrate and evaluate the artifact in a number of in-house case studies. We plan to organize workshops with academic experts in our network, and gather feedback to refine and/or restructure the artifact. Based on the feedback from the in-house case studies, we will develop an initial version of implementation guidelines for the artifact (i.e., the method of use). After that, the refined artifact and implementation guidelines (beta version) will be demonstrated and evaluated in a number of real-life case studies with practitioners to develop the final version of the artifact. For these case studies, business models from varying domains will be selected to showcase the applicability of the method in different business settings. The research team has access to such real-life business cases and companies via the ongoing industry projects in the mobility domain (e.g., UMOS).

To evaluate the validity and utility of the artifact, we will conduct interviews and set out surveys among the case study participants. We consider case studies, interviews and surveys to be a relevant means of evaluation for our research, as the to-be designed artifact is user-oriented and developed for long-term use by practitioners [36].

Lastly, the research results will be communicated to researchers and practitioners in the communication phase. We intend to publish the research in the form of a doctoral dissertation, as well as in journal articles and conference papers.

We aim to improve the external validity our research by conducting multiple case studies in which the use of the method will be demonstrated and evaluated. Construct validity will be improved through the use of multiple resources and maintaining a chain of evidence in the data collection phase. The protocols we will define for the exploratory interviews, case studies and expert reviews that are to be planned for evaluation of the research outcomes will help to increase the reliability of the results.

3. Intended Solution

The intended solution is an artifact in the form of a method for defining and monitoring business model performance indicators. The method includes guidelines for defining performance indicators for business models and monitoring the defined indicators. The to-be designed method is aimed at practitioners who are responsible for managing the performance of a company's business model (e.g., tactical managers, product owners) and that operate on the tactical level of a company, i.e., between the strategic and operational level [2, 3]. The design and implementation of the artifact will be demonstrated in real-world case studies, and we will thereby contribute to advancing the knowledge about business model performance indicators [24, 25] and business model performance management [10, 37, 38].

4. Contributions to BPM Research

This research contributes to BPM research by exploring the complex relationship between business models and business processes [3, 19]. We will consider business model performance management from a top-down as well as a bottom-up perspective. Hence, we propose using process data and process performance indicators, which are now mainly used at an operational level, by aggregating these to a higher tactical level, i.e., the level of a business model [2, 3]. The method developed in this research can provide relevant insights about the performance of a company's business model for researchers and practitioners, which may serve as high-level input for business process (re-)design [5, 14].

5. Project Status and Challenges

At the time of submitting this application, the literature review on business model performance indicators has started and is still in progress. The next phases of the research are pending. Currently, there are two main challenges within the research. Firstly, a main challenge pertains with relation to transferring process performance insights onto business models. While process performance data may offer relevant information about the performance of a company's business model, this data may not be directly mappable to business models [19]. Hence, techniques must be identified that support the aggregation of performance data into business model performance indicators. Secondly, scholars have not yet reached a consensus about what dimensions constitute a business model [39]. This may pose as a challenge for selecting an appropriate set of meta-dimensions for structuring the method for defining business model performance indicators.

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