

# Towards Business Model Implementation: from business model patterns to business processes

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## 1 Introduction and research problem

A business model describes the design or architecture of the value creation, delivery, and capture mechanisms that a business employs [1]. Triggered by digital innovation, organizations face business landscapes with rapidly changing market dynamics and complex value networks [2–4]. These conditions urge organizations to rethink their business and adapt and manage their business models to remain competitive. Business model research has focused mainly on the ideation and design of business models. However, the implementation of a business model through its underlying business processes has been rather understudied. Nevertheless, successful implementation of a business model is a challenging task, as the overarching scope of the business model can require changes in multiple processes, in different areas of an organization [5]. Thus, there is a need for guidelines to transform business models into concrete processes [6, 7].

A business model can be designed as a combination of several business model components, such as value proposition, revenue stream, value network, customer segments, and distribution channels [8]. Business model patterns describe proven generic solutions to recurring business model design problems [9]. Using them has proven beneficial in innovating and developing successful business ideas to respond to changes in the business landscape [10]. They can either describe a complete business model (i.e., *multi-sided platform pattern*, for instance, Amazon) or distinct aspects of business model components (i.e., *subscription pattern*, for instance, in Spotify’s revenue stream). According to Gassmann et al., 90% of existing business models are a recombination of existing business model patterns [11]. In other words, a business model can be designed as a combination of a value proposition pattern, a revenue stream pattern, and so on for each business model component.

Implementing a business model implies deciding which operational activities the business will perform [12]. It involves translating higher-order choices made at the business level into specific operational processes [13]. Defining the processes includes determining which actors are involved and the resources, information, and capabilities are necessary for implementing a specific business model [14]. We can use Spotify as a simple example to describe an implementation of the *subscription pattern*: A client can request a subscription via Spotify’s platform. Spotify requests the client’s personal and payment information through the platform and stores this information in its database.

Despite the relevance of the relationship between business models and business processes, extant knowledge regarding the intersection between business models and business processes is scarce. This has led to a call for research on the design of business processes based on business models that include both detailed descriptions of the business model design and the related business process elements [15]. Furthermore, as business model patterns have been mostly investigated for the (re-)design of business models, they lack guidelines to implement the business model in an organization. Likewise, as the definition of business model patterns can be abstract, vague, and incomplete [16], this can lead to ambiguity and uncertainty about which business process elements have to be implemented for the operationalization of a business model pattern.

To address the previously mentioned research problems and research gap, the objective of this study is to *provide a method to design business models through the use of business*

model patterns and implement the business model through the identification of relevant business process elements.

## 2 Research methodology

This research project will use the design science research methodology [17, 18]. The goal of design science research is to systematically guide the research process of building and evaluating a useful artifact to solve an identified problem by building on prior literature. The research process to meet this objective will follow the design steps proposed in Peffers et al. [19]. The overall research methodology is shown in Fig. 1.

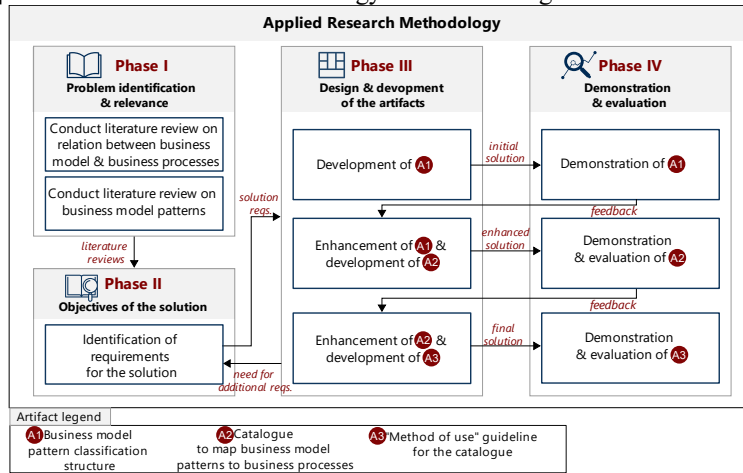


Fig. 1. Proposed research methodology based on design science research

The initial phase of the methodology consists of reviewing the existing body of literature and understanding the state of the problem at hand and the relevant research gap. The expected outcomes are a literature review on the relationship between business models and business processes and a literature review on business model patterns, using guidelines provided in [20–22]. The goal of the literature review on business models and business processes is to identify relevant existing frameworks, theories, constructs, models, tools, and methods that relate the business model to business process elements. Meanwhile, the goal of the literature review on business model patterns is to identify and classify existing patterns based on their operationalization as business processes.

The second phase of the methodology consists of determining and inferring the requirements for the method that will be consecutively developed in the third phase. The initial set of requirements for the method will be derived from the problem identification phase. Additional requirements for the method can be identified throughout the third and fourth phases. The third phase consists of developing and designing the method to implement business model patterns through business processes. The method is divided into the design and development of three artifacts that build upon each other: (A1) a business model pattern classification structure; (A2) a catalogue that maps business model patterns to business processes; (A3) a “methods of use” guideline for the proposed catalogue. The objective of A1 is to develop a classification structure of business model patterns that are defined in such a way that they provide the necessary information for implementing business models. To develop this artifact, commonly used classification methods in the business model domain will be considered (e.g., [23, 24]). In combination with these approaches, a

quantitative approach can also be used to derive relationships among the patterns (i.e., agglomerative clustering, inter-, intra- cluster distance). Using the previously established classification, the goal of A2 is to determine the business process elements needed to implement a specific pattern (i.e., capabilities, actors, information, resources). Finally, A3 will provide practical guidance to use the catalogue in the implementation of a business model. A possible method of use can be, for instance, analyzing an organization's current business model and identifying current business process elements, then identifying a new business model pattern to be implemented and using the catalogue to decide and compare which additional business process elements the organization would need to implement.

Each artifact will be demonstrated and evaluated to provide essential feedback to the construction of the method. The artifacts will be evaluated and applied in an ongoing case study in the mobility domain to which the research team, at the Eindhoven University of Technology, has access. The evaluation methods will include interviews, workshops, and focus groups with practitioners to evaluate for usability, validity, utility, and quality.

### 3 Contributions

Digital initiatives are at the top of strategic business priorities for top-level managers. Rapidly changing business landscapes require managers to innovate their businesses to remain competitive. Therefore, organizations are compelled to make efficient and effective decisions to enable timely changes of their business models. Businesses must decide not only *what* changes to make but also *how* to implement those changes through business processes.

This research intends to make contributions to the field of business models as well as the field of business process management (BPM). In the field of business models, multiple authors have worked on the discovery of business model patterns to guide the (re-)design of the business (e.g., [8, 11]). Over the last decade, research on patterns has shifted towards not only the discovery of patterns but also on classifying, structuring, and relating patterns through the creation of taxonomies [4, 9, 10, 16, 25]. This research aims to further add to the existing body of knowledge on business model patterns by providing a classification structure of existing patterns that will guide the implementation of possible business model designs. This classification will contribute towards reducing the issues related to business model pattern use (i.e., incompleteness, vagueness, inconsistent structures). Furthermore, this research aims to contribute to the literature on business model implementation by analyzing the relationship between business model patterns and their corresponding operational business processes. Current studies on the intersection of the business model and business processes highlight the potential reciprocal impact (i.e., [12, 26]) but do not provide clear guidance on how to concretely identify such impact.

In the business process management field, there is a growing interest in research related to explorative business processes[27]. Explorative business processes aim to create new value from existing business processes within the organization and focuses on possible changes and opportunities to innovate[28]. This research project intends to contribute to this field by using business model patterns as an innovation tool to help solve challenges, ideate possible changes, and add value to an organization. Using business model patterns allows practitioners to generate new business designs in an easier, more effective manner while reducing the complexity of characterizing the business model [4, 9]. Creating a catalogue of the mapping between business processes and business model patterns can guide organizations to achieve business innovation through the implementation of different business process elements.

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