Systematic and Continuous Business Model Development: Design of a Repeatable Process Using the Collaboration Engineering Approach

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Abstract. Due to permanent changes, companies constantly need to contend with new challenges. Developing and improving business models can help to adapt to constantly changing environmental conditions and to achieve competitiveness. Because most innovative developments are not the result of a single inventor, we used Collaboration Engineering to elaborate a systematic process design for business model development. To ensure an effective process design, we turned to existing knowledge by including theoretical and practical requirements of business model development. Additionally, in order to guarantee the high quality of the process, we evaluated the systematic process on the basis of a multilevel and iterative evaluation. Our evaluation clearly indicates results equivalent to expert-based business model development. Accordingly, the process design enables a continuous and recurring business model development without the ongoing support of professional facilitators.

Keywords: Business Model Development, Collaboration Engineering, Requirements of Business Model Development, Systematic Process Design

1 Introduction

Due to permanent changes, companies constantly need to contend with new challenges. Globalization and the corresponding development of the global economy bring increased transparency to the markets through new and innovative technologies. Customers have more options than ever to choose the right offer for themselves [1]. This development, in conjunction with increasingly homogenous products and services, results in an increase in the intensity of competition. Consequently, the differentiation from competitors plays an essential role for companies [2].

In this context, business models can represent an important factor to ensure competitiveness [3] and thus help to commercialize products and services [4]. Well-functioning business models can be regarded as the underlying structure for the desired

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economic success of ideas, products, and services [1] and help in differentiating from competitors. Accordingly, companies can use the positive influence of business models on their performance [5].

Due to the fast changing environment of companies and the intense competition, it is necessary to develop and continually innovate the appropriate business models [3, 6]. Such a continuous refinement of its business model represents a challenging task for companies [7] and increased interest in the phenomenon [8]. In the course of the development of their business, many companies rely on established processes in the development of product innovations [9]. An empirical study from 2009 shows that business model innovation can have a greater potential for success than comparable product and process innovations [10]. With respect to these challenges, it is no longer sufficient to rely only on process and product innovation [11].

Consequently, the question arises how companies can develop business models continuously and in consistently high quality. The literature shows that the number of approaches to the development of business models has increased in recent years. Nonetheless, appropriate approaches for business model development vary greatly in relation to their procedure, their level of detail, and the techniques applied [2]. Good examples in this context are the common approaches of Osterwalder [12], Gassmann, Frankenberger, and Csik [6], Grasl [13], and Wirtz [14]. Moreover, Ebel, Bretschneider and Leimeister [15], Köster [16] and Pelzl [17] describe methods, tools, and techniques in the field of business model development. However, these approaches tend to provide higher-level concepts because of largely neglected detailed instructions and systematic process models, for example in the form of an agenda, enabling a direct implementation to the company. Against this background, the application of these approaches and tools represents a difficult task for companies, especially without the support of consultants, professional facilitators, and business model experts. Approaches that meet these criteria and provide detailed instructions and an explicit selection of methods, tools, and techniques have only been merely addressed in the existing literature. According to this reasoning, the elaboration of a systematic process design to the development of business models including detailed instructions can be seen as the next logical step in the strategic handling of business models in companies [18].

In this paper, we close the above indicated research gap and elaborate a systematic process design for business model development, which can be applied directly in companies. Because most innovations are not the result of a single person, the focus is particularly on cooperation in groups and therefore the combination of knowledge, skills, and experience [19, 20]. Against this background, we use Collaboration Engineering (CE) to elaborate a reusable collaborative group process for business model development. Collaboration Engineering offers a structured process for systematically elaborating collaborative processes [21]. With the help of this structured approach, a detailed process design for business model development will be created.

To achieve these objectives and to address the indicated research gap, we chose a tripartite research procedure. First, we deal with the question of which requirements for business model development can be identified in literature and practice. Second, we deal with the question of how to transfer the identified requirements into a systematic process design, which allows repeatability and a direct implementation. Third, we

address the question of how to evaluate the effects of the application of the process design.

To answer these questions, we structured our paper as follows: We first give an overview of the existing knowledge of business model development including a working definition of the term business model. Afterwards, we explain the use of Collaboration Engineering and its applicability to business model development. To ensure an effective process design, we turned to existing knowledge by including theoretical and practical requirements of business model development derived from a literature review and an interview study. In order to elaborate the collaborative group process, we apply the central design process collaboration process design approach for Collaboration Engineering (CoPDA) [21]. In addition, we conduct a multilevel and iterative evaluation of the process design. Finally, we discuss limitations and future research and complete the paper with a conclusion.

2 Related Work

In the scientific literature, the focus has been on business models since the mid-90s. In the last 20 years, the number of scientific publications on this subject has significantly increased [5]. However, this attention is not limited to people with a scientific background. Equally, entrepreneurs, managers, investors, IT professionals, and journalists dedicated their attention to topics around business models [22]. Shafer, Smith, and Linder [23] consequently mention an anchoring of the term business model in management vocabulary.

Despite the intense debate on this issue, research in business model field is still highly active [24] and there are still different approaches, concepts, and definitions of the term business model. Accordingly, there is no universally accepted definition of the term business model [2, 5, 23, 25]. Against this backdrop, we want to introduce the definition by Wirtz [14] as a working definition.

"A business model is a simplified and aggregated representation of the relevant activities of a company. It describes how marketable information, products and/or services are generated by means of a company's value-added component."

The chosen definition by Wirtz is based on the value-added activities of the companies mentioned in many definitions and additionally shows which areas of value are involved in business models.

According to the rising interest on business model topics, the number of methods and approaches to the development of business models has increased [2]. Schallmo [2] notes that the level of detail in business model development approaches varies from simple descriptions to detailed process procedures. Furthermore, Rudtsch et al. [26] note that certain approaches relate to specific applications of business models (e.g., E-business models). For this reason, universal applicability is hardly feasible. Moreover, it can be stated that many approaches lack a clear connection between tools and techniques used and corresponding organizational process models for business model development [4]. This reasoning describes the need for directly implementable process

designs for business model development with clear links to the tools and techniques used.

To focus on the needs of business model development and the innovativeness of groups, a detailed approach to create collaborative processes is necessary. To ensure the direct applicability of the process design, the chosen approach should provide support for the implementation of collaborative group work with appropriate tools. Collaboration Engineering meets these requirements and deals with the design and implementation of collaborative processes in order to fulfill recurring and high-value tasks. In this connection, group members combine their knowledge and skills in order to achieve a defined goal [27]. Practitioners execute the tasks of professional facilitators. In this way, there is no need for an ongoing support of professional facilitators [28].

To apply Collaboration Engineering, two important conditions, the repeatability of the task and the high quality of the task, have to be fulfilled [28]. As already mentioned, companies have to adapt to continuously changing influences. The continuous and recurring development of new business models represents an important factor for the creation of an economically successful company [3, 6]. Based on this reasoning, it can be concluded that the development of business models is a recurring task. In relation to the high quality of business model development, it is important to consider the creation of economic value through business models. In relation to the influence of business models on the performance of companies [5] and the respective strategic positioning of the business logic in the strategy of companies [29], business model development can be regarded as a high-quality task.

3 Methodology

The elaboration of the systematic process design can be divided into three sections. In order to build up the process design on existing knowledge, we first identify theoretical requirements in a literature review and practical requirements in an interview study. Based on these identified requirements of and insights into business model development, we apply the collaboration process design approach of Collaboration Engineering to elaborate the process design in a systematic manner. Additionally, in order to guarantee the high quality of the process, we evaluate the process design on the basis of a multilevel and iterative evaluation using design simulations, walk-throughs, and pilot tests. The following chapter describes the evaluation steps in detail.

3.1 Identification of Theoretical and Practical Requirements

In order to ensure an effective process design, we turned to existing knowledge by including theoretical and practical requirements of business model development. In this context, we identified theoretical requirements by means of a systematic literature review. To analyze the identified sources in a systematic manner, a category system based on the CoPDA was created. This category system reflects the CoPDA and focuses on the goals, group products, and basic conditions of the collaborative process.

As part of the systematic literature review, we looked for current journal articles that deal with the requirements of business model development in the period between 2000 and 2015. The search was conducted in the databases of EBSCOhost, SpringerLink, IEEE, and Science Direct. We used broad-based keywords (Business Model *Design, *Development, *Engineering, *Framework, *Innovation, *Process, *Tools) and eventually identified 1,256 papers. Based on a structured review process of title, keyword, and abstract search including forward and backward search, 55 relevant sources including referenced books, conference articles, and dissertations were identified. The identified conference articles had to meet the same requirements that were defined for the search of journal articles. Afterwards, the identified sources were analyzed with the help of the established category system in relation to the requirements of business model development. The corresponding results of the systematic literature review are visualized in Table 1.

Table 1: Theoretical and Practical Requirements of Business Model Development

Category	***Requirements (RQs)***	***Source***
Goals	Developing the current business model (G1)	I
	Fast and easy application of the process design (G2)	L; I
	Continuous documentation of the results (G3)	I
	Structural procedure (G4)	L; I
	Creating awareness for the need for change (G5)	L; I
Group Products	Created team spirit in the group (P1)	L; I
	Shared knowledge of basics of business model development (P2)	L; I
	Analysis of existing business model (P3)	I
	Shared knowledge about the existing business model (P4)	L; I
	Executed environmental analysis of the existing business model (P5)	L; I
	Elaborated tool/framework for business model development (P6)	I
Basic conditions	Achieve commitment (Bc1)	I
	Use a wide range of tools (post-its, index cards, mind maps) (Bc2)	L; I
	Visual representation of operating steps and results (Bc3)	L; I
	Use technical options for storing the results (Bc4)	I
	Design simple procedures (Bc5)	I
	Enable cross-divisional communication (Bc6)	I
	Convince doubters (Bc7)	I
	Arrange enough time (Bc8)	I
	Despite technology, use face-to-face approaches (Bc9)	I
	Use interdisciplinary teams (Bc10)	L; I
	Facilitators should have skills and experiences in facilitation (Bc11)	I
	Facilitators should have strong social skills (Bc12)	I
	Practitioners should have the ability for abstraction (Bc13)	L; I
	Practitioners should have strong social skills (Bc14)	I

Source: L = Literature; I = Interview study

Looking at the results in detail, it becomes apparent that the theoretical requirements identified in the literature are not sufficient to build a systematic process. First, not enough theoretical requirements were identified. Second, the theoretical requirements were not formulated with sufficient precision. To complement the theoretical requirements and to provide a more substantive basis, an interview study was carried out to identify practical requirements for business model development. Against this backdrop, eleven interviews in the context of business model development were conducted. The semi-structured interviews with experts of business model development (consultants, enterprise architects, business developers, and entrepreneurs from different industries with a minimum of three years of experience in business model development) had a duration of 30-55 minutes and were transcribed for analysis. The categories for the evaluation were deductively specified by the category system, which was also used in the literature review. By using a standardized category system, both analyses are comparable. In this context, one author defined the respective requirements with the help of an iterative and detailed coding based on a 15-step process, which was inspired by the qualitative content analysis according to Mayring [30]. Then, the results were examined and improved by the other authors with the help of a joint vote. The results of the interview study are presented in Table 1. By including theoretical and practical requirements, a detailed basis to elaborate a systematic process design for business model development is created.

3.2 Elaboration of the Process Design Using the CoPDA

In order to elaborate a systematic process design for business model development, we used the collaboration process design approach as a central design process in Collaboration Engineering. The CoPDA consists of five steps. The task diagnosis represents the first step. In this step, an analysis of required tasks, stakeholders, resources, facilitators, and practitioners is conducted. The results of this step represent defined goals and group products (outcomes) of the collaboration process. The second step addresses the task decomposition and deals with the determination of the individual activities of the process. These activities are derived from the group products of the first step. In the third step, thinkLet choice, thinkLets are assigned to each activity that has previously been identified. ThinkLets are defined as a design pattern of Collaboration Engineering. Subsequently, in the fourth step, agenda building, activities and thinkLets are transferred into an executable sequence using an agenda. The last step of the CoPDA, design validation, represents the evaluation of the developed collaborative process [21].

The elaboration of the process and the application of the CoPDA are based on the identified theoretical and practical requirements (G1-G5). In the first step, task diagnosis, the identified goals, the group products, and the basic conditions are used to define the objective of the collaborative process. The objective can subsequently be defined as follows: *"The purpose of the process design is a structured development of a business model for an observed enterprise with a heterogeneous experience and cross-functional group of up to six people in a one-day-workshop. In addition, the*

compiled results of the workshop are continuously documented. Furthermore, an awareness of the need for change is created within the group (G1-G5).”

Based on the defined goals, group products, and basic requirements, the further steps of the CoPDA can be applied in order to elaborate the systematic process design. Thus, in the second step, the identified group products were decomposed into activities. In the third step of the CoPDA, the corresponding tasks were allocated to thinkLets, which contribute to a structured implementation of the activities. Based on this, in the fourth step, a facilitation process model (FPM) of the process was created (see Figure 2). The FPM provides an overview of the process flow. Therefore, the FPM combines the activities and the collaborative thinkLets. Thus, the elaborated process design consists of 11 activities. It should be noted that the activities of A8 to A10 are created in a loop repeating to the final drafting of the business model. To ensure the mentioned direct applicability of the process in practice, an internal agenda of the collaborative process was created in the fourth step of the CoPDA. The internal agenda shown in Table 3 offers action-guiding instructions to implement the business model development.

3.3 Evaluation of the Process Design

In order to guarantee the high quality of the process, we evaluated the systematic process design in the fifth step of the CoPDA, the so-called design validation. To perform a detailed evaluation and refinement of the process design, we chose a multilevel and iterative procedure that provides a revision of the process design according to each stage of the evaluation. Referring to this procedure, we validated the process design in four iteration loops. After each iteration loop, the process design was revised and adjusted.

To uncover hidden weaknesses, we used design simulations, walk-throughs, and pilot tests as a set of three evaluation methods. In this manner, our aim was to improve the process design continuously. Figure 1 depicts the evaluation process including the evaluation methods and the corresponding iteration loops. In the following, the evaluation is described in detail.

First, we started with a design simulation of the process design initially created. In Collaboration Engineering, design simulations represent a detailed step-by-step review of the process design by the collaboration engineer [31]. In this way, stumbling blocks in the process were identified and the formal correctness and consistency of the process were tested [21]. These improvements were directly implemented in the design simulation.

Walk-throughs are an evaluation method based on a detailed step-by-step review of the process design with experts. Walk-throughs represent the second evaluation method. In the context of walk-throughs, valuable ideas and alternative solutions are collected and discussed [32, 33]. First, we conducted two walk-throughs with experts of Collaboration Engineering. By doing so, the correct application of Collaboration Engineering was ensured and valuable suggestions for the implementation of individual activities were collected. The resulting findings were included in the process design and the second version of the process design (V2) was created. Second, we conducted two walk-throughs with business model development experts. In this way, we achieved

additional insights into the facilitation of workshops on business model development. The third iteration loop was also completed by a design simulation. In this way, we created the version V3 of the process design.

As a final iteration loop and in order to check the successful application of the process design without the ongoing support of a professional facilitator, we conducted three pilot tests. The pilot tests were applied in an experimental setting in an IS master's course. In these pilot tests, the participants redeveloped an existing business model of an energy consultant platform. In this context, two of the pilot tests used the guidelines and instructions of the process design. The first pilot test was conducted by the collaboration engineer. The second pilot test was conducted by a practitioner. To compare the quality of the process design, the third pilot test was conducted by an expert of business model development. This expert did not use the guidelines and instructions of the process design. Initially, by using a questionnaire, the participants were interviewed about their previous experiences and skills in the field of business model development. Based on their experiences, the participants were randomly allocated to three groups. The pilot tests were analyzed using a questionnaire to evaluate the process design from the perspective of the practitioner. In this way "satisfaction with process", "tool difficulty", "process difficulty", "satisfaction with outcome", and the "effectiveness of the satisfaction with outcome" were examined [34–36]. The findings obtained could subsequently also be incorporated in the process. In addition, the facilitators of the pilot tests documented their experiences in a protocol. Following a final design simulation, the final version V4 of the process design was created.

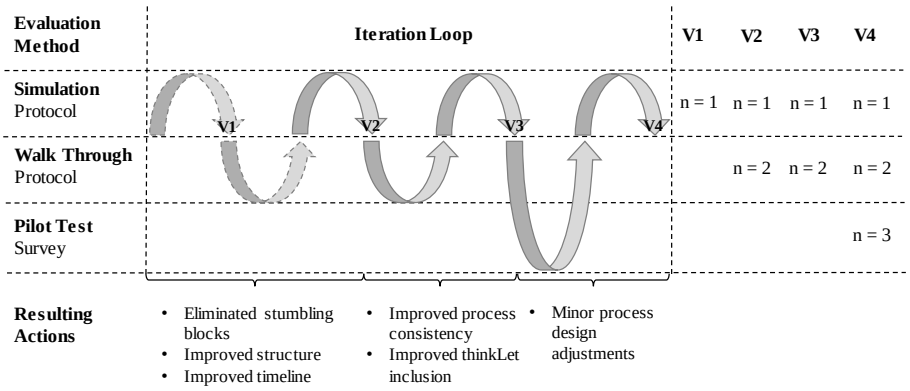

Figure 1: Iterative Evaluation of the Process Design (adapted from [37])

In the first and second iteration loop, according to V1 and V2 of the process design, mainly stumbling stones were eliminated. In the early stage, the structure of the process design was especially very fragmented. In addition, the timelines for each activity were adjusted. In this connection, CE experts highlighted the need for sufficient time for each activity. In the third iteration loop, according to V3, the focus was on the consistency of the process. In this context, thinkLets and their adoption to business model

development were especially considered. Against this background, the involvement of thinkLets was increased.

The fourth iteration loop focused on the pilot test. Table 2 depicts the results and insights of the analysis of the survey. In order to fulfill the aim of CE, enabling collaborative group processes conducted by practitioners who are better or equivalent result in the comparison to professional facilitators and experts. All in all, we asked five blocks of questions. Each block consisted of five questions. In relation to the answer on a 5-point Likert scale, all groups achieved high average scores across all categories. The differences between the results are minimal and can be considered substantially equivalent. In this context, we used a simple t-test to examine if significant differences existed between the two test groups with the collaboration engineer and practitioner and the group with the business model expert. First, it should be mentioned that with exception of "satisfaction with process" of the practitioner's group and "satisfaction with outcome" of the collaboration engineer's group, the various results are not statistically significant. Considering the lack of the significance of the results (with exception of the two results mentioned), we can assume that the elaborated process design delivers results comparable to those of a professional business model expert. Thus, we can assume that the elaborated process design results in sufficiently good results, as embedded in the CE objective. In addition, the category "tool difficulty" shows especially high results. This suggests that the selection and application of the techniques used in the elaborated process design had been purposefully designed.

Table 2: Results of the Survey

Category	**Collaboration Engineer Mean (SD)**	**Practitioner Mean (SD)**	**BM Expert Mean (SD)**
Satisfaction with Process	4.51 (0,50) ^{ns}	4.31 (0,36)**	4,77 (0,21)
Tool Difficulty	4.23 (0,69) ^{ns}	4.40 (0,61) ^{ns}	4,42 (0,45)
Process Difficulty	4.25 (0,45) ^{ns}	4.06 (0,43) ^{ns}	4,11 (0,23)
Satisfaction with Outcome	3.92 (0,52)**	4.37 (0,56) ^{ns}	4,48 (0,40)
Effectiveness	4.06 (0,46) ^{ns}	4.11 (0,62) ^{ns}	4,10 (0,74)

Note: n=7 participants per group; ns = not significant, *** p<0.01, ** p<0,05, * p<0,1

Furthermore, the approximately similar results indicate that the process can also be autonomously performed by practitioners. In conclusion, we can assume that the process can be universally and directly applied in organizations without the ongoing support of a collaboration engineer or a professional facilitator. All in all, the participants of the pilot tests were satisfied with the development of the business models as well as with the results of the process.

4 Results

In this chapter, the elaborated process design is depicted and explained. As already mentioned in the part on the conceptual development, we created a facilitation process model (see Figure 2). The FPM visualizes the structured procedure with the number

and name of the activity, the pattern of the collaboration, the respective thinkLets, and the suggested time of the systematic process design.

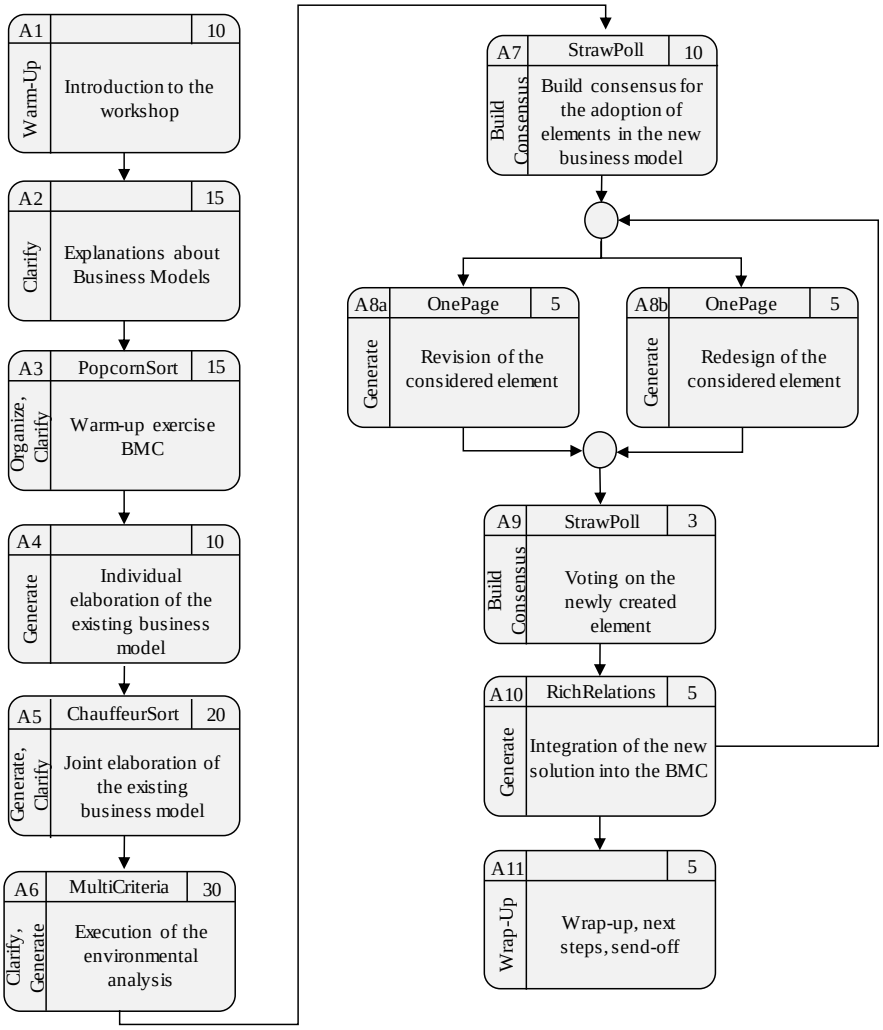

Figure 2: FPM - Systematic Process Design of Business Model Development

The internal agenda, visualized in Table 3, enables the direct implementation of the process design by providing instructions, group formations, and tools. Moreover, the internal agenda indicates how identified group products and basic conditions are incorporated into the systematic process design.

Nonetheless, not all procedures and basic conditions can be displayed in the internal agenda. In this context, the following sequence shows the respective conditions of the systematic process design.

Table 3: Internal Agenda of the Systematic Process Design

Act.	Instructions and Group Formation (PG = plenary group, SB = subgroup, I = individual)		Tools	RQs
A1	PG: Facilitator and practitioners introduce themselves. Facilitator presents the agenda and goals of the workshop. Achieve commitment to the goals from practitioners.		Presentation	P1; Bc1
A2	PG: Emphasize the relevance of BMs and explain the basic knowledge about BMs and the BMC. Ask: Do you understand the basics of business model development?		Presentation	P2; Bc1
A3	SG: Practitioners create the business model in subgroups based on content predefined in the BMC. GP: Discuss the solutions in the plenary group.		Presentation, BMC (DIN A3), prepared post-its	P2; Bc2; Bc3
A4	I: Practitioners individually elaborate the existing BM in the BMC.		Presentation, BMC (DIN A3), small post-its, pens	P3; Bc2
A5	PG: Prepare the post-its of the existing BM for the BMC. Present the post-its and discuss which field is addressed. Stick the post-its to the right place as soon as consensus has been reached. Achieve commitment and perform these steps for all predefined post-its. Summarize the existing BM and take a picture of the elaborated BMC.		Predefined post-its of existing BMC, BMC (DIN A0)	P3; P4; Bc1; Bc2; Bc3;Bc4
A6	PG: Prepare the environmental analysis questionnaire for each practitioner and introduce the practitioners to the environmental analysis (EA). I: Each participant answers the EA questionnaire (20 min.). PG: Consolidate and present the results of the EA questionnaire with the help of the EA tool. Take a picture of the results of the EA tool.		Presentation, EA questionnaire, EA tool	P5; Bc2; Bc3; Bc4
A7	PG: Facilitate the (optional) transfer of the existing elements in the new BMC. Stick the transferred elements (post-its) to a new BMC. Take a picture of the new BMC.		EA tool, BMC (DIN A0)	P5; Bc2; Bc3; Bc4
A8	PG: **Yes**: Revision of the considered element Ask: How can the considered element be revised for our business model? Orient yourself to the key questions of the respective element. The practitioners can add the existing solution and stick post-its with suggestions to the BMC.	PG: **No**: Redesign of the considered element Ask: How can the considered element be redesigned for our business model? Orient yourself to the key questions of the respective element. The practitioners are intended to stick post-its with suggestions to the BMC.	Presentation with guiding questions, BMC (DIN A0)	P6; Bc2; Bc3
A9	PG: Read each post-it of the element concerned in the BMC and ask for commitment. In case of objections, facilitate a discussion and ensure a solution (majority decision).			P6; Bc1; Bc2
A10	PG: In order to adapt the interrelations between the elements in the BMC, the facilitator gives an overview of each relationship of each element and asks for necessary additions or objections. Facilitate the discussion and ensure a solution (majority decision). Activity is performed for each element according to the order of the BMC.		Presentation with interrelation-ships, post-its, pens	P6; Bc2; Bc3
A11	PG: Summarize the workshop and the newly elaborated BM. Check if you have achieved the goals of the workshop and take a picture of the final BMC.			Bc3; Bc4

The process was consequently designed for facilitators with skills and experiences in the field of workshop facilitation (Bc11). In addition, strong social skills should be considered in practitioner and facilitator selection (Bc12; Bc14). Furthermore, the process was designed for interdisciplinary teams (Bc10). In this way, cross-divisional

communication also plays an important role (Bc6). Regarding the 232 minutes of workshop time, sufficient time should be given to business model development (Bc8). Despite the ongoing technological transformation, a face-to-face approach should also be considered (Bc9). Due to the continuous obtaining of commitment, doubters could be convinced (Bc7). Altogether, the process was designed as simple as possible (Bc5).

In addition to the illustrated internal agenda, the elaborated process design contains tools and content requiring an additional explanation. Thus, the process makes use of basic knowledge of business development in general and the Business Model Canvas (BMC). In this context, it is important to prepare the basic knowledge as well as the guiding questions and the interrelationships of the BMC. Prior to the workshop, it is furthermore necessary to draw up the existing business model of the considered company. The environmental analysis plays a central role in the process design because of the consolidation of the answers to the environmental analysis questionnaire.

5 Contributions, Limitations, and Future Research

Using Collaboration Engineering and a multilevel evaluation including iteration loops, we created a recurring and directly implementable process design that contributes to business model research. As part of the elaboration of the systematic process design, we bundled theoretical and practical requirements into a systematic process design. In this way, the process design is based on the current knowledge about business model development and cooperation in collaborative processes. Consequently, we consolidated the level of knowledge in science and practice.

The innovative combination of Collaboration Engineering and business model development enables new and interesting application opportunities in the research fields of Collaboration Engineering and business model development. Moreover, this new link enables organizations to systematically develop their own existing business model by means of clearly structured instructions.

Furthermore, the individual activities in the process design represent sophisticated procedural patterns for the use and development of the Business Model Canvas. Consequently, the design process of elaborating the Business Model Canvas was transferred into a clear and structured approach.

As a result, it is possible to work up the existing business model in a structured manner and beyond represent the entire revision process using Collaboration Engineering. In summary, it is possible to adapt the business model to constantly changing environmental conditions at any time with correspondingly less preparation time. With regard to the aim of the paper, a process design that offers direct applicability and explicitly describes the use of technology has been created. Moreover, the process design enables a continuous and recurring business model development without the ongoing support of professional facilitators.

Despite these contributions, this study is not without limitations. In this context, the elaborated hypotheses of the business model are not tested in the process design. Against the background of the sample of the evaluation, additional evaluations in various contexts could confirm the effectiveness of the process design and further

improve the process design itself. Accordingly, with regard to future research, the process design could be extended by a validation phase or a complementary workshop for transferring the assumptions into testable hypotheses. Another important aspect in the context of future research is the ability to create a toolbox for an individual and tailored adaptation to the needs of individual organizations. Thus, the process design can be converted into structured patterns, allowing the targeted use of individual parts of the process according to organizations' needs.

While the process is based on collaborative cooperation, the use of IT is so far underrepresented. The developed systematic process design thus serves as a basis for the further inclusion of IT in order to allow for the additional flexibility of the process design and the fast adoption of small changes. The next logical step should consider the inclusion of IT and online collaboration in the process design. The aim is to observe the underlying process design principles and to leverage the strengths of IT and online collaboration. The environmental analysis offers potential for the use of IT. In this connection, the analysis can be conducted by mobile apps or online collaboration tools to improve the process design. Moreover, additional mechanisms to combine several business models should be implemented with the help of IT.

6 Conclusion

The aim of the present paper was to create a continuous and recurring process design for business model development. In this regard, Collaboration Engineering was used to elaborate the process design. CE deals with the design and implementation of collaborative processes for the implementation of recurring and high-value tasks. The direct applicability without the ongoing support of professional facilitators characterizes the elaborated process design. In this context, theoretical and practical requirements of business model development have been identified. Based on these requirements, the systematic process design was elaborated with the help of the CoPDA. The evaluation represents another important aspect of the elaboration of the process design. Against this background, the process design was tested and improved using a multilevel and iterative evaluation. The evaluation clearly indicates results equivalent to expert-based business model development. Accordingly, the process design enables continuous and recurring business model development without the ongoing support of professional facilitators. In this context, the process design provides a detailed elaboration of the procedure steps, materials, and documents that are necessary for the facilitation and implementation. All in all, the elaborated process design created with CE can be regarded as novel way to continuously develop business models.

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