# Developing Creative Business Models – The OctoProz Tool

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**Abstract.** Business models are of great importance for business innovation. They can be understood as conceptual models that describe how organizations create and deliver value. Their creation is increasingly supported by information technology artifacts, as information technology facilitates information sharing, allows for continuous modification, and supports complex calculations. In this paper, we introduce a new prototype to create process-oriented business models: the OctoProz tool. We build up on creativity support system literature, present the design of the artifact, and discuss its significance for both research and practice. We close with an outlook on the evaluation of OctoProz.

**Keywords:** business modeling, prototype, OctoProz.

## 1 Introduction

Business models have gained significant attention in business strategy. "There has never been as much interest in business models as there is today" [1, p. 5]. We understand a business model as a scheme that describes how an organization creates and delivers economic, social, and other forms of value [2]. In our three-year research project KollaPro, funded by the German Ministry of Education and Research, we studied how business models are developed and deployed in practice and developed the collaborative, process-oriented business modeling method OctoProz [3].

In this article, we demonstrate how the method was technically implemented in form of the OctoProz tool. A tool implementation has several advantages over a pencil-and-paper application. First, the development of business models in virtual, dislocated teams is facilitated. Second, sharing of business models amongst different stakeholders is possible. Third, continuous modifications of business models can readily be made. Fourth, complex profitability assessments are supported. Last, the reuse of business models is facilitated by model export formats. We interpret business modeling as a creative process. Thus, business modeling tools shall support users in developing creative business models. We position OctoProz as a Creativity Support System (CSS), which "enable[s] more people to be more creative more often" [4].

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## 2 Design of the Artifact

The current prototype was created between March 2012 and February 2013 by a team of students and research assistants (21 developers) using the Ruby on Rails framework and other state-of-the-art technology. OctoProz supports the creation of process-oriented business models in a web browser using interactive controls and drag-and-drop functionality. The development of the OctoProz prototype was conducted with constant feedback from practitioners from multiple organizations (Section 5). The prototype (beta version) is accessible at http://OctoProz.de.

We see two general application scenarios of the OctoProz tool: First, a green-field approach, where a new business model is developed that creates a new customer solution as an independent business venture. This scenario may be relevant to entrepreneurs planning a new start-up. Second, OctoProz may also be used to analyze existent business models and redefine those models. This scenario calls for integrating multiple stakeholders, e.g. strategic decision makers or IT experts.

The functionality of OctoProz is clustered in *four components* that appear as separate screens. Each of the components has several associated *features and views*.

OctoProz allows for the management of multiple business models. In the *model management component*, the user can see all business models listed with their name, description, tag, the corresponding permission of the user, information on the date of the last update, and the rating. The user can *sort business models* with regards to all these categories and *search* for specific models. Business models are organized using tags. The model management component also allows for the *creation* of new business models and the *import* of business models from Microsoft Excel.

The *modeling component* of OctoProz is reachable from the model management component and depicted in Figure 1. In the center of the screen the modeler can create the business model using the methodology described in [3]. The top buttons allow the user to open a *wizard* (help) which guides the creation of a new business model. The *undo/redo*-buttons are used to correct mistakes in the modeling process. With the finance button the user can color all rows of the business model according to their costs or revenues. Activities with high costs are shown in dark red, those with high revenues in bright green. Thus, the modeler can easily *assess financially critical activities* in the business model. The copy button allows users to create personal copies of the model, in order to *create variants* of one business model. The export button enables users to *export the model* to PDF (e.g. for printing), Microsoft Excel (e.g. for further calculation and re-import), and to the ARIS Business Architect (e.g. for detailing of the process). The syntax check button opens the *syntax check view* on the right which indicates potential errors (e.g. resources without costs). The comments button opens the *comments view* on the right. Here, each model user with at least read rights can comment on the model in plain text. Last, the *currently online* button informs all users about other users currently watching the model. The model is locked by the first user with write or owner rights when opening the model. Only this user can edit the model. Her changes are pushed to the watching users in real time. The locking user

can also transfer the lock to other users with the appropriate rights when clicking on the transfer lock button. In the upper left corner of the window, each user can also *rate the model* on a one to five star scale. The average rating is shown to all users.

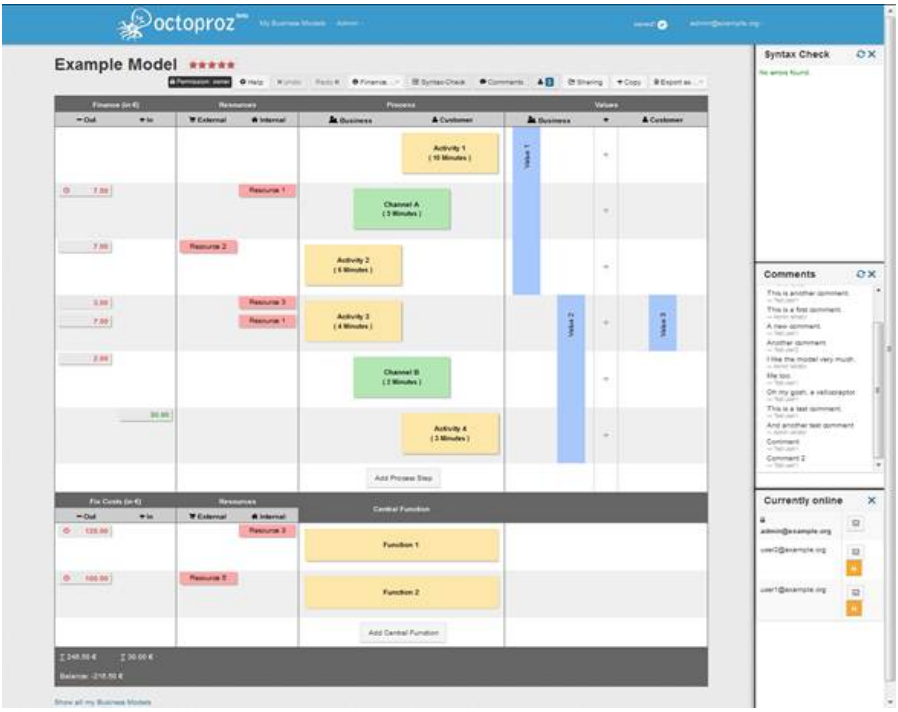


**Fig. 1.** OctoProz: Modeling Environment

As a second option to the finance button in the modeling component, the user can open a *financial analysis component* which allows an evaluation of the financials of the business model. The user is guided in a five-step calculation process for completing and analyzing the process-dependent financials, the central function financials, the process duration and iteration, the one-time investments, and the final calculations.

The sharing button leads to the *model rights management component*, allowing users to share the model with other users. Therefore, the owner of the business model has to enter a valid e-mail address and has to select between read, write, and owner rights. An invitation is sent to the collaborator.

## 3 Significance to Research

Creativity is commonly associated with the development of creative products which are both novel and useful. Both characteristics apply as quality criterion for business models: Created business models should be new to the market and provide customer value. Thus, business models created using OctoProz are creative products. CSS is an

information system type which aims at supporting the development of creative products [4]. Group CSS (GCSS) are specifically tailored to the support collaborative creative processes [5]. We position OctoProz as a GCSS.

We contribute to design-oriented IS research on CSS design. We extend the notion of CSS as systems providing inspiration for generating ideas to systems for the design of complex creative products. OctoProz represents an instantiation of this extended notion of CSS. It provides for evaluations of the impact of design choices in CSS on, for example, the process of design, creative performance, and user satisfaction. From a business modeling research perspective, OctoProz is an artifact which incorporates collaborative, process-oriented business modeling. Thus, the artifact allows for the evaluation of this new business modeling approach, and its effect on, for example, the business modeling process or business model quality.

The notion of CSS as systems for the design of complex creative products is reflected in the architectural guidelines for GCSS [6]. OctoProz follows these architectural guidelines for GCSS, recommending six interrelated system components, referred to as components for collaborative idea development: Gathering and sharing of first, rough ideas is supported by the component *shared idea space,* representing an idea database which integrates all other components. The production and documentation of ideas is supported by the *shared idea editor*, which supports the creation of new ideas (e.g. text editor). Sharing and collaboratively editing ideas facilitates mutual inspiration of group members. The *communication component* facilitates communication during the generation of new ideas. Communication could be text based, audible, or audible-visual. The *individual inspiration component* provides stimuli to individuals and thereby enhances idea generation. This component is disregarded in our tool design, since it is not relevant to group applications. A *shared idea space visualizer* helps to organize and reduce the complexity of the ideas that have been generated and collected. Commonly, ideas can be organized in folder structures or mind maps. The assessment of ideas is supported by an *evaluation component* (e.g. voting or commenting). In Table 1, we relate the components and features of OctoProz to the GCSS components. OctoProz as a tool for the refinement of initial business ideas to complex business models has an emphasis on collaborative model design.

**Table 1.** Components of the GCSS architecture and their implementation in OctoProz

| **GCSS Architecture Component** | **OctoProz Component and Features** |
|---|---|
| Shared idea editor (creation of ideas) | • Modeling component: collaborative model editing, view of users currently online, wizard for creating business models, assessment of financially critical process activities, syntax check, creation of variants, undo/redo of changes to the model<br>• Financial analysis component: guided five-step calculation process for cost and revenue estimations |
| Shared idea space visualizer (organization of ideas) | • Model management component: sorting, searching, and grouping of related business models (including variants)<br>• Print format export of business models, single business models may be exported to PDF |

**Table 1.** *(Continued)*

| | |
|---|---|
| Evaluation component (assessment of ideas) | • Comments: discussion of business model details (qualitative)<br>• Model rating: assessing business models with five-star voting (quantitative)<br>• Financial analysis component: Financial assessment of business models based on KPIs |
| Shared idea space (sharing of ideas) | • Model rights management component: management of user rights (model owner, read, write) for business models<br>• Model export and import, multi-format (ARIS & Office) export and import of business models |
| Communication component (mutual inspiration and idea assessment) | • Comments: discussion of business model details |

## 4 Significance to Practice

Collaboration can be considered an important aspect in business model creation, not only during idea creation but also within the structuring and refinement phases. Through several aspects such as sharing of models or real-time push of changes to watching users, the OctoProz prototype facilitates collaboration and is thus significant to practice. The comment functionality and star-based rating mechanism allows all users with the appropriate rights to assess business models. This allows managers to collect feedback from their employees for instance if different competing service ideas have been developed or if there are different models on a particular service idea.

In addition to these collaborative features, modelers and model users are supported individually. For instance, first time users benefit from both a step-by-step guide and a comprehensive syntax check that ensures validity of the model in terms of e.g. process structure and resource assignments. The tool provides a finance check which color-codes all process steps according to their financial requirements and outputs. This allows practitioners to quickly gain an overview of the most influential steps within a business model and therefore easily identify possible areas of improvement or refinement. Furthermore, financial experts are provided with a more advanced financial calculation and analysis module that seamlessly integrates with the basic modeling environment. Key figures (e.g. contribution margin, profit/loss, or return on invest) can be calculated using the financial information provided in the model.

After a particular business model is developed and structured by means of the OctoProz tool, further refinements, especially with respect to more advanced financial calculations are necessary. OctoProz opens up the possibility to export the process perspective of the created model in BPMN notation for the ARIS environment. Here, the process can be refined and expanded using the known ARIS toolset. In addition, OctoProz offers an Excel export which can be used for business casing.

## 5 Evaluation of the Artifact

The prototype was developed with constant feedback from industry partners (an office supply company, an SAP consulting company, and an IT consultancy). We allocated our tool development resources in accordance with their feature preferences. Seven project members participated in the feature voting: Business casing was the most important feature (seven votes), followed by Excel export (five votes), ARIS export (four votes), user management (three votes), and real-time collaboration (three votes). All features were implemented in the current release.

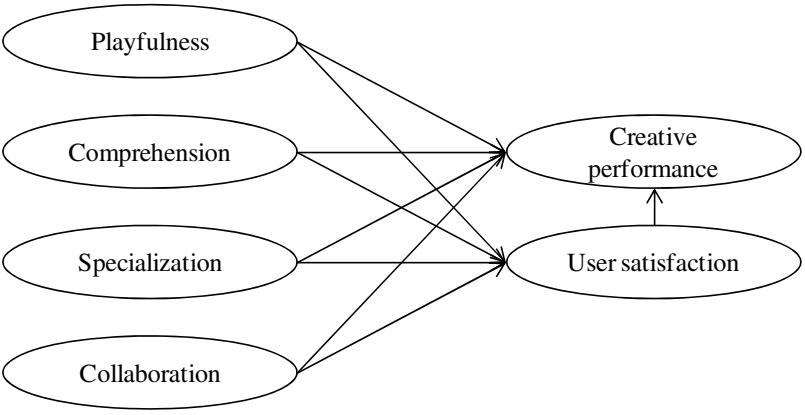


**Fig. 2.** Evaluation research model for OctoProz

From a research perspective, OctoProz should primarily be evaluated for its impact on the creative performance. In line with [7] we propose an evaluation research model (Figure 2): In a first step, OctoProz should be assessed with respect to the playfulness it allows for in business modeling, the degree of comprehension of the business model it facilitates, and the specific functionality of the tool for the context of business modeling. As a group specific evaluation criterion, collaboration support should be assessed. These four variables are hypothesized to influence user satisfaction and creative performance (while creative performance is also impacted by satisfaction). To test these hypotheses, corresponding components and features of OctoProz have to be identified activated or deactivated to separately control for the independent variables.

Moreover, OctoProz could also be evaluated against other business modeling tools such as Strategyzer by Business Model Foundry GmbH or Business Model Fiddle by Orbital Limited.

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