Modeling the Business Model and Business Strategy – Conception and Implementation of OMG's Business Motivation Model in a Software Prototype

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Abstract: The Business Motivation Model (BMM), supervised by the Object Management Group, provides a model for the design, specification and communication of business models and strategies of companies. It uniquely defines and describes elements for the procedures of developing and adapting a corporate strategy. However, the visualization and management of the models within a free, easy-to-use, highly available, and collaboration supporting tool which focuses solely on the BMM is missing. This article presents the concept and prototype for a mobile BMM application with versioning features and the possibility to link the model to other parts of the business plan, e.g. to the business process model. Usability and a low learning curve are ensured by a tour mode, color-coding, and real-time checks. The prototype was already evaluated in practical use. Future possible enhancements include customizing, dynamic interfaces to other business plan related tools and adaptations for large enterprises.

Keywords: Business Model, Business Strategy, Business Motivation Model (BMM), Prototype, Modeling Software, Tool, Tablet, Surface, Usability, Visualization

1   Introduction

The digitalization of large parts of communication, value generation and customer interaction of companies as well as the society as a whole, has far-reaching implications for almost all companies. These changes are known as digital transformation and often have a disruptive character for many businesses. They lead to extensive impacts on the corporate world. Years ago most of the IT innovations initiated first process automatization accompanied by reductions in process execution time and later a shortening of process lifecycles. Meanwhile enterprises have to respond continuously to changes in technology, customer expectations and competitors. The new challenge is the generation, development and renewing of business models, strategy formulation and the set-up and adaption of business processes via change management measures.

The terms and procedures for the development and adaptation of corporate strategies and business models are very individual in practice and may be based on common frameworks [EZ08]. In the scientific literature these issues are also far from consensus. There are tools

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and methods, such as the balanced scorecard or SWOT analyzes. But they are only part of the whole puzzle. Obviously, there is a need to model and manage the overall image of business models, strategies and their implementation.

On the one hand a unique definition and a common understanding of the terms used in corporate management are missing. Vision, mission, objectives, strategy and tactics are not delimited clearly in scientific literature. On the other hand, an appropriate tool is required with which the models for strategic corporate management can be created. In addition, extensive functionality to manage the models is indispensable. Functions for consistency and completeness checks, versioning, authorization management etc. are required. The usage of a tool would also allow the coupling with the models and measures, which are used to operationalize the strategy. Thus it makes sense to develop the relevant business processes on the basis of corporate strategies and represent the coordination of strategic and operational management transparently.

The Business Motivation Model (BMM), supervised by the Object Management Group (OMG) [Om15] [Ha08] provides a model for the design, specification and communication of business models and strategies of companies and organizations. It defines and describes the necessary model elements and therefore closes the first gap explained above. All stakeholders in the environment of the applying company benefit from the common conceptual understanding of the terms. This new common way of thinking opens up the way for new possibilities of designing and developing business strategies.

However, the specification of the BMM is missing a visualization of the elements. This article focuses also on this shortcoming. After a brief introduction in the BMM, the design and implementation of a prototype is described. Therefore, the requirements specified before are taken into account, which advances a simple application of BMM in the foreground and combines the advantages of a software-based modeling tool. The paper concludes with an evaluation and an outlook on further research needs.

2   The Business Motivation Model (BMM)

2.1   Overview

The Business Motivation Model (BMM) is a scheme to develop business process motivations. It is a model for the design, specification and communication of business models and strategies of companies and organizations. The BMM provides a metamodel and helps in identifying the most important elements of a business model and corporate strategy [We15]. By defining the concepts, the model elements, and their relationships, the BMM supports the structured and preferably complete description of the relevant aspects of the business.

An important characteristic is the separation of the corporate purpose (end) and the objectives of means used to implement (means). The term "end" includes the vision and

the desired results in terms of goals and objectives. The means situate the mission, business policy and rule as well as strategic and tactic courses of action. This separation of responsibilities ("separation of concerns") allows the adjustment and change of the means while the fundamental corporate objectives could stay unchanged.

Since the purposes and the measures to achieve them are subject to multiple impacts (influencer), these will also be modeled and their effects on corporate purpose and means are valuated (assessment).

The value of the BMM is in particular in the specification of terms and concepts. Applying companies often gain clarity about a complex situation of differently used and poorly defined concepts around strategic business management, e.g. vision, mission, corporate culture, strategy, and goals. The important communication to stakeholders of the company can be significantly simplified by the adaptation of BMM. By using the BMM, an organization can minimize the amount of undesired expenses as well as maximize its chance to realize its ends.

Figure 1 displays the BMM model elements and the relations between them in an overview. Hereinafter, it is assumed that the concepts of BMM are known.
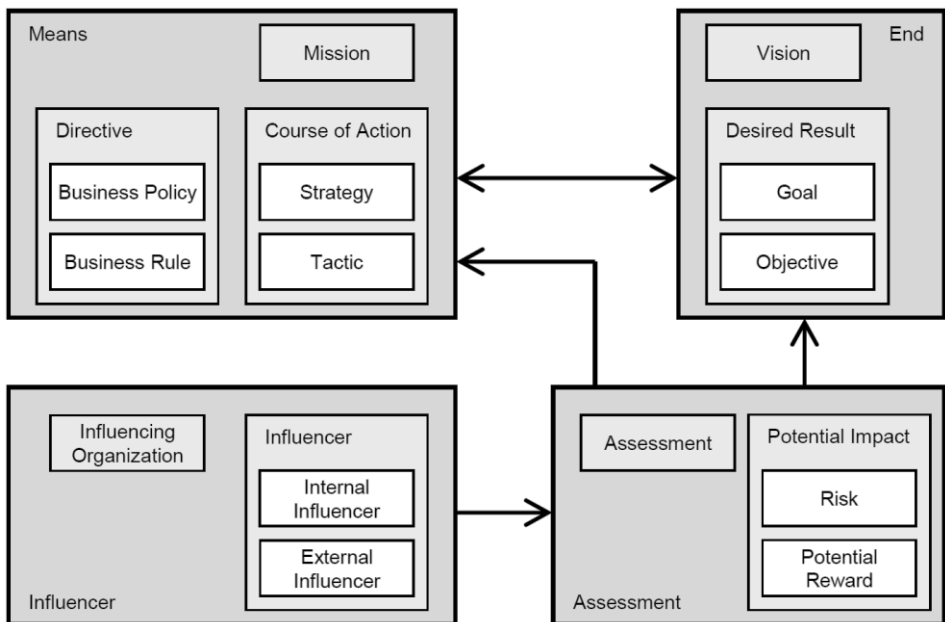

Fig. 1: Overview of the core concepts of the Business Motivation Model [Ha08]

2.2   Research Question and Method

The BMM wants to set a standard [BZ08], but dissemination is still low. Unfortunately, the BMM has not been yet adopted by most organizations. One of the reasons is its great complexity for beginners. The concepts used by the BMM are very similar to each other and can therefore not be understood without thorough study of the specification [Om15]. This is very time-consuming and costly.

This leads to the task to design and develop a tool that addresses the problem of complexity and tries to make the use for beginners and experts as easy as possible. At the same time, it aims to ensure a good diagram quality and ways of collaboration.

2.3   Tools offering Modeling for the Business Motivation Model

As of now, several modeling tools have introduced the BMM. Most of the vendors have their seeds in the field of enterprise architectures [BZ08]. Archi [Ar15] is a free modeling tool with a BMM plugin. It is actively developed, its last version dated January 12th 2015. IBM Rationale Software Modeler and RequisitePro [Ib15], Visual Paradigm [Vi15] and Select Architect [Se15] are commercial desktop applications including a BMM plugin. The Business Motivation Model Editor [Bu13] seems to be the only freely available desktop tool solely designed for BMM. But unfortunately its last update, until now, was on April 18th 2013. Mobile applications have not emerged so far.

Apart from the reasons mentioned before, this might also explain why the BMM has not been adopted broadly in the past. It can be stated that as far as can be seen is no tool that meets the requirements described. Therefore, the design of a tool will be described below, which makes it easy to learn the BMM in combination with easy operation.

3   Design and Realization of the Prototype[3]

3.1   Goals

This paper focuses on making BMM as easy adoptable as possible. Three aspects support this goal:

1. Ensuring high availability of the tool

2. Offering collaboration abilities

3. Keeping the learning curve low

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[3] The BMM app's source code is open source. It can be found at https://github.com/my-tien/bmm_app.

(1.) is of great importance, because the main target group are business managers. In their everyday working life they travel a lot. The time spent in trains or planes could be used to work on their organization's BMM. Additionally, reviews and discussions are best done during conferences. For this, it should be possible to quickly and easily provide the motivation model.

(2.) follows from the fact that an organization's motivation should never be a single person's responsibility. On the contrary, it should be developed in group discussions as well as with input from different expert groups. Of course, not all parties involved can be available at the same time, so a BMM implementation should provide a history that keeps all contributions transparent. That way everybody knows at all times whom to address about a certain part of the motivation.

(3.) might be the decisive factor for success. If an organization discusses the introduction of BMM to their business planning, the team would face the problem that its correct application must be studied first. That in itself is very time-consuming and it might turn out that it is not needed for the organization's purposes after all. So they dismiss it before it is even explored. However, a tool that teaches its usage while working with it, removes any extra effort to acquire skills or knowledge. It can be tested immediately, thus increasing its chance to be adopted. Of course, to gain full advantage of the scheme, research on BMM should follow. But in this case the time spent on research is less likely to be wasted. The organization had the possibility to gain some insight into the idea and to assess its usefulness.

3.2   Methods

(1.) The high availability is addressed by implementing the tool as a mobile application installable on the Microsoft Surface or a PC (see figure 2). Users can review their work wherever they are and without internet connectivity, this is especially useful for managers who travel frequently. Apparently, alternatives to this approach are different platforms, namely Android tablets or the Apple iPad. A browser application would have also been possible. We dismissed the latter because, as already mentioned, availability even without internet connection is desired. Also, local storage of sensitive organization information solves the issue of data security. The other two platforms are ruled out by the Microsoft Surface and its advantage of being a full-fledged notebook with powerful hardware. That way the user can access work in ordinary desktop applications as well as the BMM app without the need to carry around multiple devices.
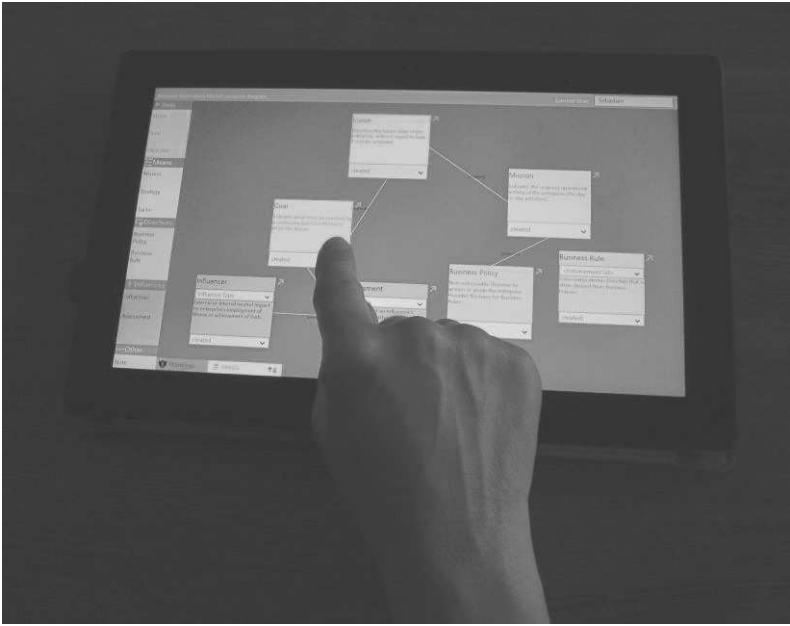
Fig. 2: A user working with the Windows App

(2.) To support collaboration, the tool tracks the author and last editing date. Moreover, every object has a "status", indicating whether it was just created, approved, denied or is a duplicate. These options also serve as versioning feature; they are inspired by issue trackers for software repositories such as GitHub or Google Code. A reference field allows users to add their sources of information for each model. It could also be used to provide a link to other parts of the business plan, for example to a business process model. Finally, to communicate within the tool, a "Note" Model can be attached to any object.
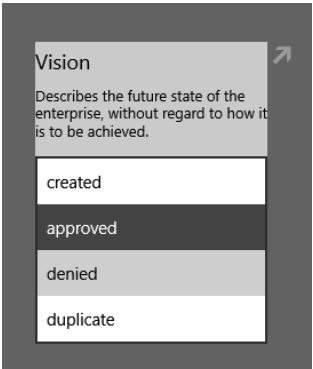

Fig. 3: Editing status information within the Business Motivation Model App

(3.) Keeping the learning curve low is accomplished by a combination of several usability methods and high communication. A tour mode, for example, demonstrates all basic aspects of BMM step-by-step. The tour does not describe the specification in different words; instead the user is aided in creating a complete example motivation for a fictional cancer research institute (see figure 4). A "task box" in the upper right corner always contains the next instruction (e.g. "Create a Vision") while the corresponding user interface element for solving this task is highlighted. These instructions teach the basic concepts of BMM and also demonstrate the tool's correct usage. After the tour, the created example remains on the workspace and can be altered to fit the organization's own problem.
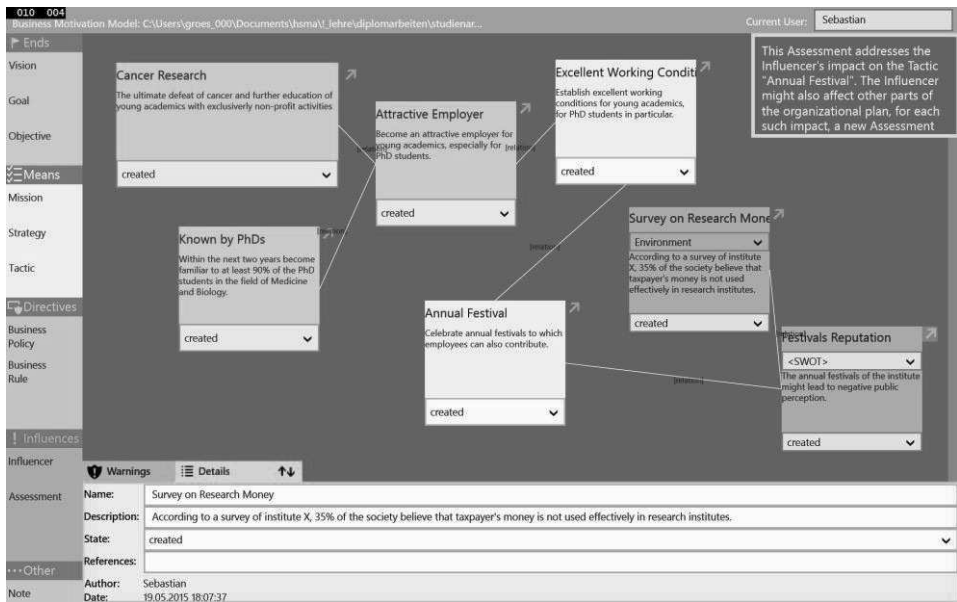

Fig. 4: The tour mode enables rapid learning of the BMM concepts

But even without the tour, a beginner can learn BMM by using this app. Each model describes itself in a space-saving manner by exploiting the textbox placeholders for this. A short text describes what distinguishes it most from the other models. Additionally, a way to distinguish the different kinds of models is necessary. Expressive icons and consistent colors can be used for the BMM's four plus one basic concepts: Ends (1), Means (2), Directives (3), Influencers & Assessments (4) and Other (5). Table 1 shows the use of different colors and icons for the concepts:

Category	Icon	Color
1	Flag	Green
2	Todo list	Yellow
3	Shield	Blue
4	Exclamation mark	Red
(5	Three dots	Grey)

Tab. 1: Color and Icon Concepts

Within the five concepts of the BMM the subtle distinction between each other, e.g. Goal and Objective, can hardly be expressed in icons. But all models have the fortunate feature that each of their names start with a different letter: *V*ision, *G*oal, *O*bjective, *M*ission, *S*trategy, (Business) *P*olicy, (Business) *R*ule, *I*nfluencer, *A*ssessment, (Note). With that, each model's icon can consist of its group icon combined with the model's first letter. A unique identification would then be done in two steps. First, the concept icon and color help the user to recognize the model's category quickly. In a second step the name's first letter uniquely identifies the model out of the two to three models in that category.

Fig. 5: Concepts

Lastly, while working, the tool performs real-time validation, checking for incomplete diagrams or for wrong associations between objects. It displays warnings in a view box at the bottom of the app. It can be collapsed, so that experienced users are not disturbed by an unnecessarily cluttered interface. Also, the warnings are solely informative. This follows the principle of aiding the user in creating well-formed motivations without taking one's freedom away with rules that are not important for the use case.

Fig. 6: Real-Time Validation with output of the results

4   Results and Discussion

4.1   Application and Evaluation of the Prototype

The Business Motivation Model is undoubtedly a useful addition to an organization's business plan. This paper has proposed a list of ways to design an implementation of the Business Motivation Model and to ease its introduction into a companies' specific enterprise architecture. The BMM app is the result of these ideas.

Of course, the benefits of the prototype need to be evaluated. The prototype was firstly used in the context of health care, to get valuable insights and feedback [NG15] [Ge15]. The result is provided in the described 'tour mode' for users. In addition, the BMM has been applied for a private college that offers various part-time master programs and certifications in different subject areas. In addition to the already developed 'tour mode' can be included in future expansions, the experiences from the first applications. The expansion options are described in the next section.

4.2   Opportunities and Needs for Enhancement

There a several ideas to enhance the prototype. The ability to customize the tool by setting custom entries for influencer categories, business rule enforcement levels, statuses and even warnings would help tailor the tool to individual needs. For these custom entries the tool could provide suggestions depending on which kind of organization uses it, for example special sets of values for the health care sector, financial institutes or education systems. In order to find out these value sets, field tests in different industry sectors must be performed.

As described in Section 3.2, any kind of links to external resources can be made in the model. This may, for example, lead to more detailed information or documents and other models in the company, for example process models [EZ08], technically possible on different software platforms. These links could be extended in a way that the links are not purely static, but may be responsive to triggers about changes in any of the participating documents. Via (partial) automation [FSV14], this could lead to easier maintenance and better integration with complementary plans, i.e. it strategy [HP14].

When working with the BMM, it has been found, that the concepts are well suited to represent smaller companies and their straightforward business models and strategies. But there are missing possibilities to build complex and larger business landscapes. This shows the need for enhancement of both conceptually within the meaning of the BMM specification and the appropriate tools to combine several specific models in the form of hierarchies or other cross-connections. This would on the one hand facilitate the dissemination. That subject may not be seen as important, because even large enterprises may apply the BMM for additional business models, beyond their current scope.

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