

# Ideator - a collaborative enterprise idea management tool powered by KiWi\*

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**Abstract.** *"The most difficult thing with ideas is not to have them. It's to find out if they're good [1]."* This position paper demonstrates the requirements for an idea management application and presents the idea management tool Ideator. The Ideator is a software tool which is currently under development and which offers innovative and flexible solutions to idea management in company environments. It is based on the semantic wiki KiWi that is a framework for semantic social software applications. We present several functionalities of the Ideator and show which modifications and extensions of KiWi are necessary for their realisation.

## 1 Idea management

Idea management as a part of innovation management is an important factor to increase the productivity of companies. It makes the development of new products more efficient and helps to structure the ideation process within the company. This saves costs and keeps a company competitive. Different stakeholders, like employees, customers, suppliers or business partners may create new ideas that appear in different forms. Some are small optimizations of processes within a company and others are hot topics like ideas for innovative products. Companies that support the idea management benefit from the accumulated knowledge of its people [2]. In big companies, which support idea management like Deutsche Post, hundreds of ideas are collected every day. The managements challenge is the identification of the relevant ones from the whole amount of ideas. For this purpose all submitted ideas have to be evaluated according to different criterias, e.g. costs, benefits, innovativeness or the strategic relevance for the company.

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## 2 Enterprise 2.0 Idea management

Since the existence of web2.0 sites like Facebook<sup>1</sup>, Flickr<sup>2</sup> and Wikipedia<sup>3</sup> it is common practice that people use the internet to interact, collaborate and share things with each other. Users publish their content on blogs and wikis, discuss with each other and form online communities. According to Michael Koch and Alexander Richter in [3] more than 750 million users worldwide spend a high amount of their free time on social networking sites. The effects of the growth and the high acceptance of social software are relevant for companies, too. The term enterprise2.0 describes the use of social software in the environment of a company. They benefit from the high acceptance of these sorts of applications. Michael Platt describes in [4] that Web2.0 applications *"...represent a significant opportunity for organizations to build new social and web-based collaboration, productivity, and business systems, and to improve cost and revenue returns."* Currently some web2.0 based idea management tools exist on the market. Representatives are BlueKiWi<sup>4</sup>, BrainR<sup>5</sup> and Ideascale<sup>6</sup>. They have in common the easy creation of ideas and offer special support for communities.

## 3 Ideator - a collaborative idea management tool based on the Semantic Wiki KiWi

The Ideator is a web based idea management tool that combines the web2.0 philosophy with semantic web technology. The Ideator has its name from idea and motor and allows an innovative way of exploring and navigating within content and an effective filtering, search and visualization of ideas. We decided to use the semantic wiki KiWi as a framework for our tool. The KiWi system offers a flexible extension mechanism that allows the creation of semantic social software applications based on the KiWi core system. The important point is that most of the required functionalities of semantic social software applications are provided by KiWi and can be easily adopted for specific applications in different domains [5].

The KiWi core system offers

- ... several functionalities to support communities and which are typical for semantic social software applications, e.g. dashboard, social networking functionalities, collaborative tagging, ...
- ... a wiki based way to create, edit and link content
- ... forms which allow a structured acquisition of data and the possibility to transform unstructured wiki based data into structured form based data

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<sup>1</sup> <http://www.facebook.com>

<sup>2</sup> [www.flickr.com](http://www.flickr.com)

<sup>3</sup> [www.wikipedia.com](http://www.wikipedia.com)

<sup>4</sup> <http://www.bluekiwi-software.com/>

<sup>5</sup> <http://www.brainr.de/>

<sup>6</sup> <http://www.ideascale.com/>

- ... several ways to classify and navigate within content based on semantic web technologies
- ... an easy way to add domain specific functionalities
- ... relevant features for enterprise applications like permission management, web services, versioning

We consider these points as key success factors for an idea management tool. The following section will describe functionalities of the Ideator in more detail. In addition, there will be a description of the needed modifications of the KiWi system.

### 3.1 Ideator workflow and user roles

For the creation of a new idea the Ideator offers alternatively a wiki or a form based approach. This will be described in the next section in more detail. An idea manager has an overview over all ideas and has the possibility to search for ideas according to different criterions. Furthermore the idea manager has the possibility to sort out the relevant ideas from the irrelevant ones. Additionally he/she can redirect an idea for evaluation to a reviewer. Beside the official reviewing process the community has the possibility to vote for an idea, too. Figure 1 illustrates the different user roles and their relations within the Ideator.

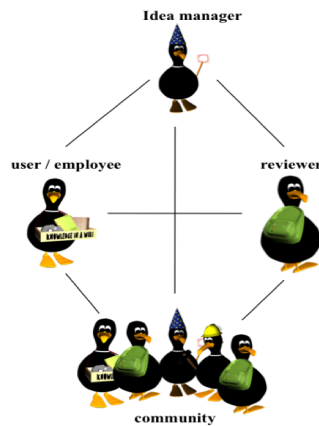


Fig. 1: user roles

### 3.2 Creating ideas the semantic wiki way ...

The Ideator tool allows the easy creation of new ideas according to the wiki philosophy and enables its systematically enrichment afterwards. The revolutionary

thing is that the Ideator focuses on the user and the ideas instead of the processes within a company: Everyone can use the Ideator to create ideas without the restrictions that appear in common idea management systems. Ideas can be acquired as unstructured textual data within the wiki and no forms and processes that limit the creativity are necessary. This is a very important aspect for motivating people to publish their ideas. Additionally the Ideator wiki supports versioning and the upload of different types of media content. The benefit of creating ideas the wiki style is that each idea can be linked to other ideas or related articles.

Furthermore the Ideator offers...

- a structured way to create new ideas
- the transformation of unstructured wiki data into structured data

Creating content the wiki way does not guarantee that all necessary information is given. It is uncertain whether the costs of the ideas realisation are included in the wiki text and whether the idea is categorized. Only forms can guarantee the entry of data according to a specification by telling the user what he/she has to fill in. On the one hand this guarantees a complete acquisition of data and on the other hand it is the reason why several enterprise applications are exclusively based on forms. In contrast to traditional wikis, where no structure of content exists, the Ideator is based on the semantic wiki KiWi and its data appears in a semi-structured form [6].

The Ideator allows people to create ideas according to the wiki philosophy and offers additionally a form-based approach to enrich systematically the information. A user can choose forms from a pool and use them to add additional information during the runtime of the application. Unstructured wiki text can be annotated using RDFa.

The RDFa primer describe RDFa in [7] as a *"...set of XHTML attributes to augment visual data with machine-readable hints."* It allows the annotation of free text according to concepts in an ontology. Some paragraphs or entities in the wiki article can be annotated with RDFa tags and as a consequence their values appear in the form. The Ideator supports the user in entering RDFa tags with a simple user interface that allows the selection of all possible RDFa properties. Additionally several entities are automatically detected by the system based on information extraction. Figure 2 illustrates the transformation of unstructured wiki text to structured and form based information.

The diagram illustrates the process of extracting structured data from unstructured wiki text. On the left, a wiki page titled "Idea A" contains unstructured text about Lorem Ipsum and a yellow sticky note labeled "Free wiki text annotated with RDFa". On the right, a form extracts this information into fields: "Name of Idea" (Idea A), "Description" (Lorem Ipsum text), "Author" (RSint), "Participants" (Mihal Radu, Stexx Stroka), "Privacy" (Do not show my name), and "Categories" (Production, Sales, Bussines Model). A double-headed arrow indicates the bidirectional relationship between the text and the form.

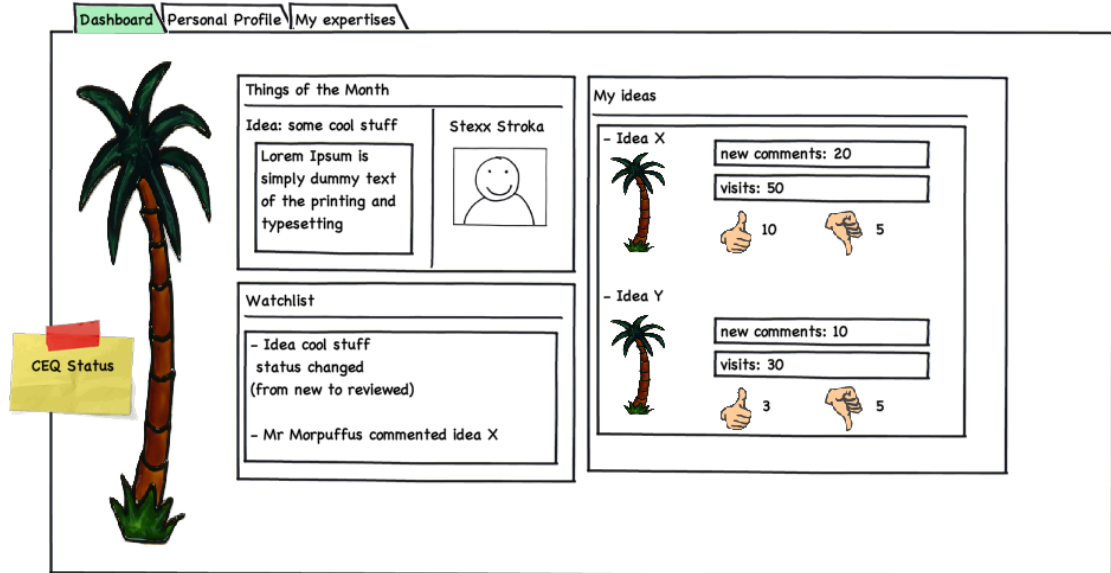
**Fig. 2:** unstructured wiki text combined with forms

### 3.3 Extended Community support

Like several other social networking websites the Ideator allows the user to administer the personal profile and to add other users as friends. In this way a user will be notified about all submitted ideas of friends. Each idea can be assigned to a user and it is possible to comment and rate ideas of others. Furthermore an idea can be put on a personal watchlist and the user will be informed about all activities of the containing ideas, e.g. changes of the content, new comments, new ratings, tagging, viewing, etc. A special functionality of the Ideator is the possibility to analyse and increase the activity of the community. This is provided by the integrated reputation mechanism Community Equity<sup>7</sup>. By using this model each activity on an existing idea increases its activity value and as a consequence the reputation of a user gets higher, too. The Community Equity mechanism is an integral part of the KiWi core system and a detailed description about the algorithm can be found in [8]. In this way the most relevant ideas and the most active users are identified.

<sup>7</sup> <http://kenai.com/projects/community-equity>

### 3.4 Dashboard



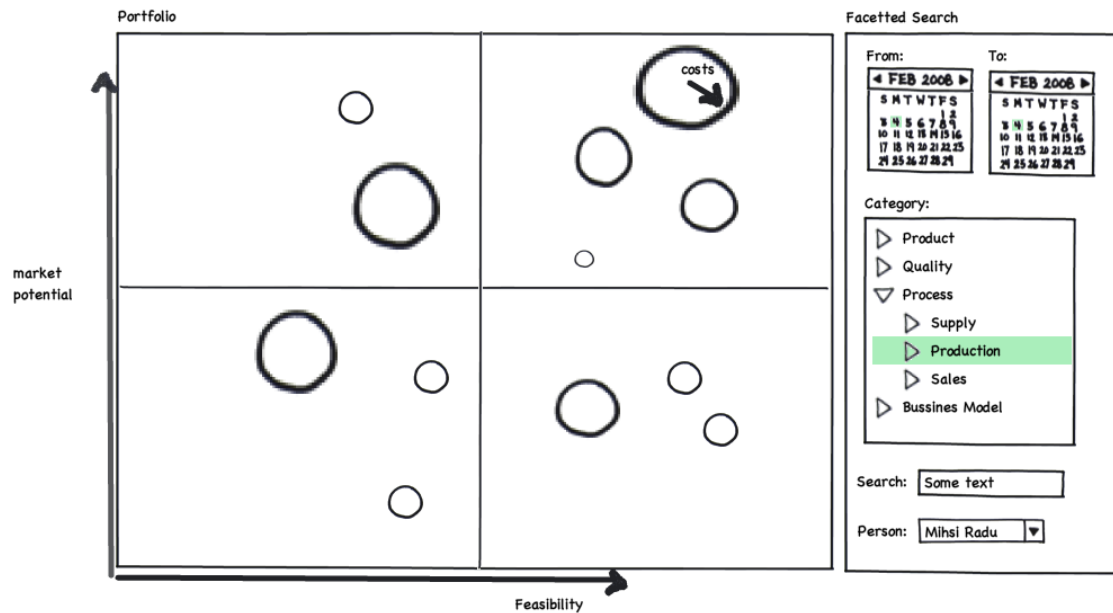
**Fig. 3:** The ideator dashbaord

After login a user is redirected to the dashboard that allows a personalized view on the content and provides a quick overview of the activities in the community. That informs the user about

- all new submitted ideas
- the best rated ideas
- the activities in the community based on the community equity mechanism described above
- the history of a users visited wiki pages

The dashboard is used to manage a users personal profile and friendlist, which is the primary way to use the social networking functionality of the Ideator. Furthermore the dashboard motivates a user by illustrating its activity in form of a palm. The more active the user submits, rates or comments ideas the bigger the palm is. The same visualisation technique is used to visualize the activity of each idea. Additional to the official reviewing workflow each user has the possibility to vote for an idea: The user can support an idea by clicking the like button, illustrated in figure 3 in form of a thumb.

### 3.5 Navigation of content / Exploring new ideas



**Fig. 4:** Idea Portfolio

An idea manager needs to have an overview over all ideas. For this purpose the Ideator offers a faceted search combined with an attractive and informative result representation. Each idea is visualized according to three dimensions within the portfolio matrix: potential for the market, feasibility and costs. Ideas, which have a high feasibility and a high potential for the market, are in the upper right corner of the portfolio. Ideas with a low feasibility and a low potential for the market are in the lower left. The size of the bubble illustrates the costs of the idea, i.e. the bigger the bubble the higher the costs. Each bubble itself deals as a link to the corresponding idea. This visualisation helps an idea manager to sort out relevant ideas from irrelevant ones. All visualized ideas can be filtered according to different criterions by a faceted classification mechanism. The facets are illustrated on the right side of figure 4. The semantic wiki KiWi offers the basis for the faceted search and allows an easy adoption of the visualisation for the search results.

### 3.6 Conclusion

In this paper we introduce into idea management and demonstrate how KiWi can be used to build an enterprise2.0 application. For this purpose we present the idea management tool Ideator. Especially in the domain of innovation management a high user participation is very important. Only if employees, suppliers and customers participate actively in the idea management process, good and economic ideas can grow. The Ideator is a very user centered application which offers several functionalities which are typically for semantic social software applications like the user profile, the dashboard and the possibility for a community to vote for an idea. People can put ideas on a watchlist and get informed about changes on this idea. Additionally a very innovative reputation mechanism motivates users to participate in the idea management process. Finding the idea is the one thing, sorting out the relevant ideas from the irrelevant ones is the other. The real strengths of the Ideator are the several possibilities to create, structure, navigate and search for data, which are enabled through the semantic basis of the KiWi framework.

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