SkiBaserl – Knowledge Management in High-Performance Sports

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Abstract: Bringing together knowledge bearers is a crucial factor for innovation in high-performance sports. Since the capabilities of a growing amount of nations are converging, every detail counts to win a competition. To harness the competence, experience and knowledge of various stakeholders, the Innovation Network Alpine Skiing has developed a custom-designed knowledge and idea management system. Having adapted Web 2.0 technologies to the requirements of innovation in the special environment of high-performance sports, the knowledge workers are enabled to easily contribute to the innovation process. The Wiki-based solution called "SkiBaserl"[1] is successfully used in several development projects within the German Skiing Association. This article delivers an outline of the development process, the implementation and an evaluation of the tool.

Keywords: social software, wiki, high-performance sports, knowledge management
Categories: M.0, M.8

1 Introduction: Web 2.0 goes High-Performance Sports

The Internet has experienced an enormous evolution. Users have developed from pure consumers to contributors who not only read content but also provide, edit, evaluate and comment. The keyword is "participation". The willing and active involvement of many users, independent of organisational constraints, processes, technologies or certain platforms, represents the main characteristic of Web 2.0 [O'Reilly 2005].

The straightforward possibility for everyone to contribute to the big picture can enrich many approaches to knowledge management.

This is exactly what companies try to benefit from within their intranets. Since the knowledge, know-how and qualification of employees is a crucial resource, it bares enormous potential to facilitate their contribution. Thus, for business purposes the expression Enterprise 2.0 has been introduced by [McAfee 2006]. Immanent in this term is the question about the deployment potential of Social Software in companies. Compared to the private use of these tools, they have to master different and company-specific intranets challenges. When designing a socio-technical tool the

[1] The term "SkiBaserl" consists of Ski (German for skiing) and the Bavarian diminutive for database, "Baserl".

integration of organisational structures and processes has to be taken into account. Having adapted Web 2.0 solutions to the enterprise environment, these tools offer powerful opportunities to distribute tacit knowledge and best practices companywide.

For in-company operation, these tools are adjusted to company context and additionally enriched by experiences with existing intra-company tools. E.g. the online-encyclopaedia Wikipedia or the social networking platform Facebook have already served as role-model for the prototypes of several companies [Back et al. 2008; Buhse and Stammer 2008; Coleman and Levine 2008; Cook 2008; Koch and Richter 2008].

The success story of Web 2.0 based tools inspired the task force within the Innovation Network Alpine Skiing to follow the example. Hence, one main challenge of the SkiBaserl Project was to select and adapt Social Software to the again different requirements of innovation in high-performance sports in general and the environment of the German Skiing Association in particular.

Within the scope of this article, the "high-performance sports 2.0 scenario" is presented from the project team's point of view. In the next chapter the method applied during the development is introduced. Moreover the special requirements of a knowledge management tool that is used in high-performance sports are summarized. In chapter three the solution itself – the SkiBaserl – is briefly presented. In chapter four several lessons learned from the development and from the introduction are presented. Chapter five gives a brief outlook for the future of the SkiBaserl.

2 Background and Methods

What separates the high-performance sports environment most from a classic Web 2.0 setting are the special stakeholders and the use scenarios. The Innovation Network Alpine Skiing cooperates on a scientific level with a heterogeneous network of different experts (kinetics and training science, sport technology, medicines, software technology, innovation management, etc.).

These involved persons participate in organized, complex (knowledge-intensive) projects. Among them are knowledge bearers and idea suppliers who are only to a small extent bound to their desk. There are also those, who are equipped with interesting information and experiences from their expertise of work, which usually are not available for other actors. Consequently, prior knowledge management was done decentralised on the participant's laptops (and in their heads). The vision of all partners was to create an all-time accessible knowledge base. It should allow easy contribution and retrieval access to increase the number of idea suppliers in the sense of an open innovation process [Reichwald and Piller 2006]. Especially insights and experiences about the many, potentially innovation-relevant fields should be made easier to document, comment and be sustainably accessible.

Based on these, deliberately abstract needs and wishes, a Wiki was chosen as technological base. This Wiki was integrated as far as possible into the work environment and processes of the participating actors. Due to the not too IT-affine users and their motivation to contribute, focus was laid on embedding the technical solution in a social context and a joyful work environment.

To reflect on and evaluate the development of the SkiBaserl the action research method was applied. The special characteristic of action research is that the researcher

takes an active role in the development process. Thus, the combination of theory and practice is the basis for a better understanding of complex problems in specific situations and contexts.

According to [Baskerville and Wood-Harper 1996] the five prerequisites of action research are

- the existence of an accepted theoretical model: in our case innovatorics for high-performance sports [Moritz 2006].
- the active involvement of the researchers in the five phases of the action research process. [Susman 1983] entitles the phases that incorporate an iterative, cyclical process as follows: Diagnosing, action planning, action taking, evaluation and specific learning. The authors were involved in all five phases.
- the structural and continuous recording of the findings. Therefore detailed interviews and surveys of the development team were conducted on a regular basis. In addition the handling of the prototypes and wiki were observed.
- the possible instantaneous appliance of the findings for both sides.
- the iterative and durable connection of theory and practice.

These five prerequisites of action research were considered during the whole project.

3 The solution: Skibaserl

The Wiki-based SkiBaserl enables users to store, organise and obtain information and knowledge by a web-based password-protected interface. The integrated WYSIWYG-editor acts as an enormous simplification for new and meta-text illiterate users. In addition, users were given the option to send contents or whole pages per mail to the "SkiBaserl". When necessary, those were adjusted by one of the two "Wiki gardeners". These are employed as administrators to keep a uniform structure in the Wiki. Thus, they monitor the distribution of tags and adjust them where necessary. Concerning the tags' structure, three categories emerged as being helpful. Tags were distributed to certain subjects (e.g. "aerodynamic", "gliding" or "technique"), content description (e.g. "experience", "technological know-how" or "innovation") and finally individual project titles. (e.g. "orthotic").

To support the innovation work, the methodology [Moritz 2006 and 2009] is integrated in the Wiki and illustrated with earlier projects of the Network Alpine Skiing.

Great relevance was given to the term "joyful use". It unites all means that promote the Wiki above the level of user-friendliness and towards a system one loves to use. For example the terms in the SkiBaserl were kept as simple and colloquial as possible. The site map is entitled "What's new?" and the button for site-creation is labelled "I know something". Furthermore, emphasis was put on presentation and assembly to support browsing (keyword: "serendipity").

4 Lessons Learned

The lessons learned are structured into two phases. Firstly, the experiences during the development phase (in collaboration with the users) are described and, secondly, the

impressions of the development team according to the introduction into productive work are explained.

4.1 Development

Below, some measures are listed and described which supported the development process and helped to adapt the Wiki to the needs of the users and its periphery.
Great importance was placed on cooperative and open interaction, to avoid 'gaps' between experts, athletes and technicians and to communicate among each other on the same level. Straight away the initial meeting was held "in snow" on a hut in Garmisch-Partenkirchen and had a positive impact on the motivation of the task force. After the primary phase of mainly theoretic work the first working prototype was like a catalyser for the project. By using and testing the technical implementation a lot of valuable information was gathered that helped to improve the system in a further iteration loop.

Regular presence-meetings to discuss the development progress of "SkiBaserl" had a positive influence on the atmosphere in the team and galvanised (especially) the (partly inactive) users into action. The integration into ongoing projects (e.g. creation of many contents of as many diverse users as possible) was necessary to identify potential usage capabilities. In this context, it became clear that the identification of usage scenarios did not take place disconnected from the system. Instead, it went hand in hand with the usage of an early prototype.

It was known from the beginning, that a majority of users is not very IT-affine. Therefore, the simplification of the platform (slimming) had priority as well as measures to increase motivation and simplification of usage, especially those of the WYSIWIG-editor. Editing Wiki-pages played a central role. Sadly, neither open-source-plug-ins nor commercial tools are very well-engineered at the moment. Especially problematic were the users' expectations to find functions comparable to office solutions like MS Word. Finally, as a solution to this, a strongly adapted version of the editor TinyMCE was employed, as well as active work on the users' expectations. Unexpectedly, the Wiki's property of being a web-based platform emerged as a great usage motivation. The users emphasised that, beside data security ("once entered, forever accessible"), the Wiki encouraged to revise document content and to restructure it compared to a text document.

As expected, awareness functions like "latest changes" were employed by the users with increasing favour. It appeared, that the highest barriers (and consequently, strongly de-motivating factors) were non-transparent functions or reactions of the system like little bugs in the editor. Here, a fast reaction and clarification by the administrators were necessary and helpful.

4.2 Change Management

In the course of the Wiki's adaptation, it became clear that openness to change requests is an important factor of success. True to the motto of 'trial and error', the users were animated to experiment. Accordingly, in the beginning numerous features were provided and the ones that turned out to be redundant were deactivated over time.

During operation in a pilot development project, it became clear that various navigation tools are necessary, since user groups, intentions, and projects tend to differ considerably. Now it's possible to navigate through SkiBaserl with the help of tags, a file structure, or the search function.

At the beginning, it was also uncertain how access authorisation to individual, confidential pages should be handled. To avoid additional barriers and to create an innovation friendly climate, it was decided to keep all pages accessible for every user. For individual cases, it was decreed that highly confidential contents should not be saved in SkiBaserl. This case has not yet occurred.

4.3 Summary and Discussion

Summing up the lessons learned the most important experiences of the socio-technical solution, the development process and the introduction period are outlined.

Simplicity and joy of use were identified as the main success drivers of the technical solution. Furthermore the consideration of and support for different use scenarios and user groups played an important role. During the development process the adaption of the wiki was in the centre of attention. Therefore the integration of several auxiliary plug-ins, regular face-to-face-meetings and the teambuilding event as well as the fast reaction to bugs turned out to be very relevant. In the introduction period the most important factors for success and acceptance were openness to users' change requests and thus the adaption to use scenarios, not having been taken in account so far.

As a matter of course the results are closely related to the development and introduction of a knowledge management tool into the specific context of innovation in high-performance sports. For this reason one has to be aware of two constraints regarding the usefulness and transferability of the results to similar projects. The conducted action research cannot deliver information about long term reliability and return on investment of the SkiBaserl and a different area of application might have different needs and requirements. Nevertheless our results can serve as suggestion for the introduction of a wiki in similar environments.

5 Future Prospects

By now, the SkiBaserl has been deployed in several cooperation projects. According to the users, the cooperation in innovation projects can be considerably improved. Not least because the different knowledge bearers have a central contact point where to provide and retrieve information. The crucial detail deciding about success or defeat in a competition might be in there.

However, work on SkiBaserl is continued. Up to now, it is adapted for information and knowledge management in the Innovation Network Alpine Skiing. Notwithstanding it provides potential for interpersonal communication to foster the informal communication and motivation. Therefore in another step, a blog and a chat shall be integrated. Further on, focus will be placed on "joyful usage".

The integrated music-player of an user plays in the background: Wolfgang Ambros sings enthusiastically: "Skiiiiiii foaan!"

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