Experience Report: Social BPM Lab enhanced with participation of professionals

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Abstract: This article describes the experiences of conducting an enhanced Social BPM Lab. The basic idea of a Social BPM Lab is a case study centered around a fictitious company, where student groups from different locations all over the world are taking part. Thus, computer-supported collaboration and modern communication tools are essential for its success. In addition to earlier conducted Labs, in this Lab not only university students participated, but also professionals, to give students an even more realistic learning atmosphere. So the background of the participants was quite heterogeneous. This paper gives an outline of the enhanced Lab setting, the challenges we faced during the Lab and lessons learned.

Keywords: Social BPM Lab, Business Process Modeling, Horus method, BPM Education

1   Introduction

Business Process Management (BPM) is one of the hot topics of business managers and CIOs [Wa08, WH14]. One important aspect of BPM is the modeling of business processes. With the need of more BPM courses, especially BPM modeling courses, and a more cross-functional, inter-organizational and collaborative setting [Se12] the Social BPM Lab teaching concept was developed and conducted by PROMATIS software GmbH in cooperation with the Institute of Applied Informatics and Formal Description Methods at the Karlsruhe Institute of Technology (KIT) [Ca13].

After conducting a couple of those Social BPM Labs, they were developed further with a wider target group, not just to focus on university students, but also on professionals. The objective of PROMATIS software GmbH was not only to offer the Lab concept to professionals, but also to give university students an even deeper atmosphere of professional life by collaborating with real professionals. For university students practical experience is a very important part of their education, but simultaneously they are quite unsatisfied with the current course offer, because of missing applied learning courses [BMW08].

With this background, an enhanced version of the already established Social BPM Lab

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was developed and conducted, which in addition to the previous labs, involves also professionals, instead of just students. In this paper that enhanced version of the Social BPM Lab is presented.

2   The Horus method and Horus modelling tool

The Horus method described by Schönthaler et al. is a method for business process engineering and can be seen as a recipe which guides the user through different defined steps of a modelling process [Sc12]. It is not a project procedure model like Scrum, but can be used additionally for the modelling tasks in a project. Also other aspects of a project procedure should be kept in mind like project management, quality assurance and documentation. For the application of the method a comprehending modelling tool is available, which can be downloaded for free from the Horus software GmbH Webpage[3]. That tool was also used during the Lab.

The method makes heavy use of the abstraction and structuring principle and is divided in four phases: *preparation* phase, *strategy and architecture* phase, *business process analysis* phase and *application* phase. Figure 1 gives an overview of the different modelling phases and the tasks conducted in those phases. As the Horus method as well as the Social BPM Lab emphasise the *strategy and architecture phase* and the *business process analysis* phase, these two phases will be described in more detail.
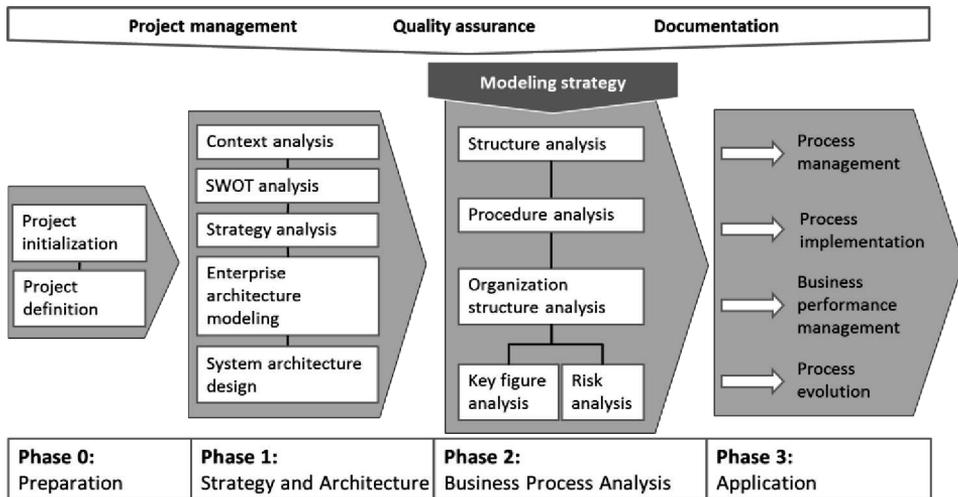

Figure 1: Overview of the Horus method (adapted from [Sc12, p. 62])

Before the actual business process analysis is done, the corporate strategy and

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[3] http://www.horus.biz/de/

architecture has to be analysed. The reason is more a practical than a theoretical one, because practical experience shows, that involving decision makers into a modelling project helps to increase the acceptance of the project. In phase 1 a context analysis is conducted to describe the environment, the aims and the supply & services model of the project. The next step is a SWOT analysis to address the strengths, weaknesses, opportunities and threats in the given context of the project. After the SWOT analysis the strategy analysis follows to identify strategies, risks and key figures to measure the corporate goals and strategy implementations. The strategy analysis is followed by modelling the enterprise architecture. The enterprise architecture model represents the decision makers, who will detail the different enterprise processes. The core of the enterprise architecture is the business process architecture, linking business objects, business units and business rules. If the modelling project aims at the development of an information system, phase 1 ends with the system architecture design, which is a high level representation of the system architecture. It will be detailed in phase 2.

Phase 2 begins with a structure analysis. During the structure analysis business objects and business rules, which span the business processes, are defined. Afterwards a procedure analysis is undertaken, resulting in one or more business process models, which are linked to the structural models. During the organization structure analysis the organizational structure and the needed roles are defined. Competencies and responsibilities are established through links to the object and procedure models. Based on the organization and process structure a key figure analysis and risk analysis are conducted. For more information regarding the Horus method see [Sc12].

3   Social BPM Lab enhanced

The enhanced Social BPM Lab is based on the Social BPM Lab concept presented by Caporale et al. [Ca13]. Since 2013, this Lab concept has been applied to university courses conducted at the Department of Economics and Management of KIT on a regular basis. During this time, the concept has been developed further in many aspects, for example in providing elaborated course material and a communication infrastructure suitable for the academic learning context. The enhanced Social BPM Lab addressed with this article differentiates from the previously conducted Labs only with respect to the participants. It has been opened for students from universities as well as professionals. Therefore it offers the chance for students not only to get in touch with business process modeling and the Horus tool, but also with potential future employers. By inviting professionals, it is now possible to give participants additional practical insights through working with experts, who share their experience, not only in business process modeling, but also in conducting meetings and professional communication.

In the following, the setting and scenario of the conducted Lab is described. Furthermore an evaluation of the Lab and lessons learned are provided.

3.1 Setting

The enhanced Social BPM Lab took part in three different locations, namely Turkey, Russia and Germany. Usually 10 to 30 students and a couple of professionals are set in one location. For the enhanced Social BPM Lab a group of 30 students and three professionals stayed in Turkey, whereas 10 students and one professional stayed in Russia. The Lab was organized and moderated from Germany. There were no students in Germany for that time. The student groups were divided in groups of two to three people. The main subject of the students was international business administration and informatics. The professionals had an IT background and knowledge about business process modelling. However, they have rare knowledge about Petri nets. For them this lab is like a further education. Therefore, the conditions for students and for professionals is nearly the same. This makes it easier to form teams with professionals and students, based on this chance of further education.

Each group had an own laptop with the current version of the Horus business process modeler. Furthermore they had internet access and a version of the communication program "Skype" installed on their laptops. All participants at one location were in one room, containing at least one video projector. A professional of PROMATIS software GmbH supervised the participants on-site.

The time frame for such a Lab lays between half a day and two days. For each task, the groups got a solving time frame of 30 minutes up to two hours, depending on the complexity of the task.

3.2 Scenario

The participants in the conducted Social BPM Lab played the role of employees of a fictive company called "SOWU Enterprises". The enterprise is specialized in IT and security and produces its own products, e.g. a secure smartphone. An own company website was built to give participants the impression of a "real" company. The fictive history of the SOWU Enterprises started in 1998 as a spin-off of the institute AIFB and has now more than 2.000 employees all over the world. The locations are in Brazil, China, Hungary, USA and in Germany. In each location the same five departments exist: department A is the Product Development and Marketing, B has the tasks of Production and Procurement, C plays the Customer Service. Department D has the tasks of a Sales department and E fulfils the tasks of managing the online store. Figure 2 gives an overview of the locations and departments.
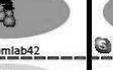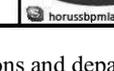
Figure 2: Overview of locations and departments

As Figure 2 shows, 25 department-location combinations exist. Conducted Tasks during the Lab are divided in "team internal" and "department internal" tasks. Team internal means one department of one location, e.g. department A in Germany. Department internal means one department in all countries, e.g. department B in cooperation with all 5 countries. Head of SOWU Enterprises is a professional of PROMATIS software GmbH, who leads the whole Lab. Each participant location has a local leader, who helps participants and answers questions. Local leaders are on-site. For an easier understanding, we call the fictive locations "SOWU locations". This is because for example a location in Germany can play the SOWU location China. In the picture, additionally the skype names were shown, so a matching in Skype is easier for the participants. Tasks can be specific for one SOWU location and department, e.g. department C in China, or cooperative between different SOWU locations. The local leaders have a look at the different groups. If the time is over and the groups aren't finished, they help them or provide them solutions, so they can solve the rest of the tasks.

The tasks for each department (local and international) were from the same character, but with different manifestations. The tasks contain mainly exercises from phase three of the Horus method, presented in chapter 2. Examples for tasks are:

- **Exercise 1.1 (Team internal):** Model the processes at level 1 with the help of videos and the interview statements.

- **Exercise 1.2 (Department internal):** Communicate with all other locations of your department via Skype and create an universal process for the department. Integrate the given four transitions correctly (The transitions are shown on a given model, but they aren't linked with the process. So the students have to

link them).

- **Exercise 1.3 (Team internal):** Split up the four given transitions in your department to one team of each location. Edit the refinement process at level 2, for the transition your team is responsible. The descriptions of the activities can be found in the intranet.

3.3 Evaluation

Participants showed great interest in conducting the Social BPM Lab. We had 25 participants, who filled in the questionnaire. As Figure 3 shows, the overall result is very positive. Four questions were answered neutral or positive.

	I do not agree	I neither agree nor disagree	I agree
1. I was able to improve my knowledge about Petri nets during the lab.	5%	10%	85%
2. The lab showed me the relevance of collaborative work.	0%	15%	85%
3. The lab increased my interest in BPM and process modelling.	10%	25%	65%
4. There was sufficient information about the business case "SOWU enterprises".	0%	35%	65%
5. I was able to understand the tasks.	10%	35%	55%
6. There was sufficient time to work on the tasks.	10%	25%	65%
7. It was clear at all times which model was supposed to be worked on.	5%	65%	30%
8. The number of participants was appropriate.	15%	35%	50%
9. I always had someone to ask when needed.	0%	10%	90%
10. The lab was a lot of fun.	0%	25%	75%

Figure 3: Evaluation Questionnaire and results

The only exception from positive answers is question seven. When looking at this question seven, it seems that the majority has not fully known, which model they should use. This may be grounded in the number of possible models, used in the Horus method. All in all, the Lab is viewed in a quite positive way.

3.4 Lessons Learned

Mostly the interest and attention paid of participants is quite high and tasks are solvable

even for participants without modelling background. A big challenge for the Lab is the tough time frame of one and a half day up to two days.

The most time consuming challenge is a technical one. Different computers and operating systems require different versions of the software. Participants were invited to install and try the software before taking part in the lab. However some participants do not follow those instructions. The challenge is not to lose too much time in installing the needed software. Sometimes the technical room equipment is challenging, too. For example the wireless LAN was too weak to hold connection to the servers of Horus. For future Labs it is planned to provide virtual machines, which contain already configured software, so no time is lost because of missing software packages.

Another challenge is the number of functions of the Horus business modeler. Participants sometimes try to use as many functions as possible of the tool with the result of loosing time for solving tasks. The loss of time is not only a challenge for the local department, but for all the same departments in the different countries. The reason lays in the linkage of tasks, which are often build up on each other. Local leaders should take care of the teams and remind them to focus on the specific tasks to avoid delays.

Last but not least, one reason for delays are extensive discussions. For solving tasks, people were invited to debate. Nevertheless sometimes discussions were spread about a long period of time. To avoid a delay, the discussion should be brought to an end without destroying the thoughts or ideas of the participants. Here again good soft skills of the local leaders are required, to end discussion without destroying good thoughts.

In comparison to earlier conducted Labs the participation of professionals seems to reduce time delays because of long discussions and playing with the functionality of the Horus business modeler. But as time delays were not measured, this effect cannot be quantified and remains a subjective perception of the local leaders.

4   Conclusion and future work

All in all, the feedback for the enhanced Social Lab was very good. The participation of professionals helped the students to stay focused and gave them some insights into their professional working life and how they communicate and work.

In future we plan to conduct the Lab in different time zones with different cultures. We assume that the intercultural teams will solve the tasks in different ways with different outcomes. Such a setting would also increase the practical impact, because in todays world employees often have to work in intercultural teams and different time zones.

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