

User Involvement in Icelandic Software Industry

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ABSTRACT

This paper reports the first results from a recent study done on user involvement in Icelandic software industry. A questionnaire survey was made to gather information on the software processes used and to what extent user involvement methods are used by software developers in the different processes.

The results show that the majority of the respondents use their own process where they have adjusted their development process to their needs. More than one third of the respondents use the agile process Scrum. That group is the most skeptical one when rating the importance of usability in software development. Meetings are the most popular method for involving users.

Categories and Subject Descriptors

H.5.2[User Interfaces] User-centered design, Theory and methods.

Keywords

Software processes, User involvement methods, User centered software development.

1. INTRODUCTION

A numbers of studies have been done in different countries to gather information on how practitioners use methods for involving users in the software development, e. g. [1, 2, 4, 5, 7, 9]. When the results from these studies are compared, it can be seen that the emphasis in one country can differ to some extent to the emphasis in another country regarding user involvement methods used and how the respondents rate the methods. A study like this has not been done in Iceland so far.

The agile software development process has been growing in popularity in Iceland for the last five years or so, where the Scrum process has been the most popular one. In Scrum the projects are split up in two to four weeks long iterations called sprints, each ending up with a potential shippable product. Scrum heavily emphasizes on self organizing and well compounded teams, typically with 6 – 8 interdisciplinary team members [6]. Traditional Scrum has been criticized for not involving users in their software process and for not adequately address their

usability needs, for example in [8].

In this paper the following research questions are analyzed:

- What software processes are used in the Icelandic software industry today?
- How do software developers rate the importance of usability? Is there some variance according to the process used?
- Which methods do software developers use to involve users in the software development? Is there some variance according to the process used?

2. MATERIALS AND METHOD

An online questionnaire was created in the QuestionPro tool for gathering data on the research questions. The target respondents were software developers in Iceland. There are not that many specialists in Human-Computer Interaction in Iceland so the software developers are the ones that contact users during the software development and they should have had one or two course in their education for learning methods to involve users.

The survey was sent out to two mailing lists, one containing 100 members called the Agile-group and the other containing approximately 100 women in information technology (IT-women). The survey was also posted on Facebook within a group of the Computer Scientists Association containing 256 members. It is possible that the mailing lists and the group overlap and therefore we estimate that the survey reached approximately 300 target respondents.

According to the Federation of Icelandic Industries [3] there were 2.071 jobs in the Icelandic Software Industry in the year 2004. It is hard to say what the number is now because between 2004 and 2008 there was a big growth in the field but in October 2008 the financial crisis changed the picture a lot. Still the software industry has not been as much affected as other industries, so we estimate that there were around 2.000 employees working in the software industry at the time of the survey.

The number of respondents was 82 so we estimate that around 25% of the people contacted did respond. The majority of the respondents 93% had B. Sc. degree or M. Sc. Degree in either Computer Science or Engineering. More than half of the respondents or 54% had 10 years experience or more in the software industry. More than half of the respondents 56% were male and 44% women. According to the Federation of Icelandic Industries [3], 24% of the employees in software industry in Iceland were women in 2004, so our sample is biased towards women.

Right now we are analyzing the data, so this paper describes the first results from the survey.

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3. RESULTS

In the following answers to the three research questions will be described.

3.1 The software processes used

When asked about the process that the developers use for software development, 44% of the respondents say that they use their own process, where they have probably adjusted some known process to their needs. Furthermore 37% use Scrum, which has grown in popularity the last five years or so in Iceland. The remaining 19% use other processes, including for example the Waterfall process and Extreme programming.

3.2 The importance of usability

When asked to rate the importance of usability the definition of usability was first described to them in the following way: "Usability is a qualitative attribute that assesses how easy user interfaces are to use. Usability is mainly made up of three factors: Effectiveness – Can the users solve their tasks with the software? Efficiency – Can the user solve their tasks without major problems? Satisfaction – How satisfied are the users?" The respondents were asked to answer if they agreed or disagreed to the statement that usability is important for the success of the software. The developers that used Scrum were the most skeptical, as can be seen on Figure 1. Twelve percent of the respondents that use the Scrum process answer that usability is neither important nor unimportant. Sixty one (61%) said they strongly agree, but 72% of those that use their own process said they strongly agreed to the statement. One explanation could be that the Scrum process is primarily used in some industrial sectors where usability indeed is not such important. Further analysis of the data is needed to check that.

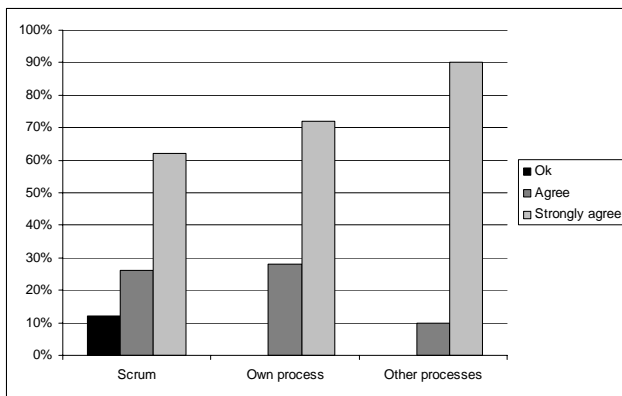


Figure 1: Usability is important

3.3 User involvement methods used

When asked what user involvement methods the developers had used the results show that some of the methods are used in all processes but for other methods there is bigger variance. Meeting with users are very commonly used in all processes but questionnaires and guidelines are not much used. It is a rather positive result for the participants of this workshop that the Think-aloud method is used by around half of the respondents and the participants using Scrum are the ones that have the highest number of usage of the Think-aloud method.

Table 1: The User Involvement Methods used in each software development process

	Scrum	Own	Other
Questionnaire or Survey	33%	27%	0%
Interviews	44%	62%	86%
Personas	33%	46%	29%
Scenarios	56%	46%	86%
Use Cases	67%	46%	86%
User Stories	78%	42%	71%
Meetings	89%	96%	100%
Guidelines	28%	35%	29%
Paper Prototypes	56%	35%	71%
Digital Prototypes	67%	50%	71%
User tests (Think aloud)	72%	54%	43%
Other methods	17%	12%	29%

4. CONCLUSIONS

One third of the Icelandic developers use the Scrum process and that group does not rate usability as highly as developers using other processes. We do not have any results explaining this yet, but this is really worth looking at in future work. When looking at what user involvement methods are used in each development process this trend is not that obvious. The surprising result there is that the most popular method is meetings with users even though that has not been taught in any text books on user involvement.

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