Agile Alliance Academic Research Fund: Report

Jennifer Ferreira, MSc Candidate
Victoria University of Wellington
Wellington
New Zealand
jenniferferreira484@gmail.com

13 January, 2008

Purpose of the funding request: Access to agile practitioners

The request for funding was to support the data gathering process for my masters (MSc) research on interaction design and agile development. The research was based on interviews and due to a short supply of agile practitioners in Wellington, New Zealand, it was necessary to travel. The funds supplemented expenses incurred traveling to Auckland, New Zealand, and Helsinki, Finland, where interviews with agile practitioners were conducted.

Results

To aim for a better understanding of practice, we conducted grounded theory research about real-world software teams who combine interaction design and agile development. The interviews were audio recorded, transcribed and analysed using grounded theory[1]. The results provided insights into interaction design being done up front (before implementation begins), the structure of the development iterations, the effect of incorporating interaction design techniques into the agile development iterations, as well as the role of the interaction designer on agile teams. The analysis also highlighted areas that may benefit from further research.

The following is a short description of the main findings:

- Up-front interaction design happens.
  For a development project to even begin, all teams underlined the importance of studying their end users and researching the scope of the product under development — especially for the teams whose development projects were organised such that their time with end users once implementation had begun was minimal, or non-existent.
- Agile development can be structured by four approaches to interaction design.
  Our analysis showed that the teams organised and structured their interaction design and agile development activities according a *design* strategy and an *implementation* strategy for the interaction design. These were combined to form four approaches: The first comprised of most of the interaction design completed before implementation began, followed by the implementation of the interaction design as a process of refinement. The second approach combined only enough interaction design completed before implementation began to begin implementation and then evolving the interaction design along with the whole system under development. Both the third and fourth approach consisted of the interaction design being completed in parallel with the 'back end' of the system, differing only in the amount of interaction design being completed before implementation of the 'back end' began.

1 GLASER, B., AND STRAUSS, A. “The discovery of grounded theory: Strategies for qualitative research.” Aldine Atherton, NY, US, 1967.

- Agile development iterations are opportunities for feedback and change in the interaction design.
  Within the structure of agile development iterations, our study identified four aspects that provided opportunities for feedback and change in the interaction design:
  - Development iterations drive usability testing
  - Usability testing results in changes in development
  - Iterating with working software brings insights
  - Iteration planning affects interaction design
- The interaction designer role is a highly collaborative role on agile teams.
  Within the agile context, interaction design was seen to be a more collaborative activity than traditional interaction design. Interaction designers set the target for the usability of the product and were continually involved during the course of development to ensure that those targets were reached.

Further, the results suggest that for a better understanding of the most efficient combination of interaction design and agile development, that the issues of the type of interaction design feedback and the cost of change is investigated more fully. In particular, that the forms of interaction design used in evaluations in an agile context be explored and how incremental interaction design can contribute to the understanding of how interaction design and agile development can work together.

The masters thesis entitled “User Interaction Design and Agile Development: A Real-World Perspective” contains the detailed results and is available in pdf format from http://www.elvis.ac.nz/brain?JenniferFerreira

Publications

The results have been published:

- Ferreira J, Noble J and Biddle R (2007) Agile development iterations and UI design. In Proceedings of the Agile 2007 conference, Washington, DC, USA. pp 50--58.
- Ferreira J, Noble J and Biddle R (2007) Up-front interaction design in agile development. In Proceedings of the XP 2007 conference, Como, Italy. pp 9--16.
- Ferreira J, Noble J and Biddle R (2007) Interaction Designers on eXtreme Programming Teams: Case Studies from the Real World. In Proceedings of the Fifth New Zealand Computer Science Research Student Conference (NZCSRSC2007), Hamilton, New Zealand.

Thanks

Along with my supervisors, James Noble and Robert Biddle, I would like to thank the Agile Alliance for their generous support – the funds provided enriched the data for this research and its results has fueled my interest in continuing further study in this area.