Traveling Architects – A New Way of Herding Cats

Aino Vonge Corry[1], Klaus Marius Hansen[1], and David Svensson[2]

[1] Department of Computer Science, University of Aarhus
Aabogade 34, 8200 Aarhus M
{apaipi, klaus.m.hansen}@daimi.au.dk
[2] Department of Computer Science, Lund University
Ole Römers väg 3, 223 63 Lund, Sweden
david@cs.lth.se
The PalCom Project
http://www.ist-palcom.org

Abstract. Making software developers work towards a common goal may be likened to herding cats. If we further spread developers around the globe, we run increased risks of being unable to design and impose coherent software architectures on projects, potentially leading to lower quality of the resulting systems. Based on our experiences in a large, distributed research and development project, *PalCom*, we propose that employing techniques from active user involvement in general (and from participatory design in particular) may help in designing and sharing quality software architectures. In particular, we present the *Traveling Architects* technique in which a group of architects visit development locations in order to engage developers and end users in software architecture work. We argue that using techniques such as these may potentially lead to higher quality of software architectures in particular for systems developed in a distributed setting.

1 Introduction

Consider the following scenario, taking place in a distributed software development project, where development teams at different sites cooperate towards forming a common architecture:

> *Two Traveling Architects, Mario and Lisa, visit a site in order to have a Traveling Architects workshop. The developers at the site have prepared a presentation of the end-users, the architectural requirements and the prototype they have imagined. At this site they work with rehabilitation of people who have had hand surgery. They have a number of scenarios that they want supported with a prototype, such as sharing of ideas between a group of rehabilitation patients.*
>
> *After the presentation, the developers go through the different parts of the prototype they want to build and discuss whether it would be beneficial to implement all of it. Lisa and Mario advice on the use of the*

C. Hofmeister et al. (Eds.): QoSA 2006, LNCS 4214, pp. 111–126, 2006.

current common architecture, and note components that are candidates for placement in the project's toolbox of reusable components. They agree that some parts, such as the recording of video at consultations with physiotherapists, has to work in order for the end-users to be able to participate in the next application design meeting. Other parts, like the sharing of data over wireless net, could be simulated, because designing them wouldn't add to the common architecture.

During the meeting, Lisa and Mario create Unified Modeling Language (UML; [19]) diagrams of object and class models and sketch a documentation note on the prototype. After the meeting, the documentation note is finished and sent to the application developers to check for misunderstandings. Returning from the site, a meeting with other architects in the project is held in order to propagate the knowledge of the requirements and the input to the common architecture.

This is an example of the use of the Traveling Architects technique, taken from our work in the EC-funded Integrated Project PalCom [20]. PalCom explores the concept of *palpable computing*, denoting a new kind of ambient computing which is concerned with the above and other user-oriented challenges in complex and dynamic ambient computing environments. The two primary goals of the PalCom project are to explore the concept of 'palpability' and to design an open software architecture for palpable computing. In the following section we will present more about the project as a background, before discussing the Traveling Architects technique in more detail.

2 The PalCom Project

One of the subprojects in PalCom is the "Pregnancy and Maternity" project, where IT support for pregnancies is investigated. The vision is to equip pregnant women with a device called 'the Stone', which can support them during their pregnancy:

Alice comes home, greets her husband Bob and wants to show him something on a device she holds in her hand. The device has a very small screen and suggests using the TV as an external display. After Alice has accepted it, a film is shown on the TV. It is a recording from the ultra sound scan she went to that day because she is pregnant.

Since Alice is also diabetic, she has to measure her blood sugar level regularly. Her measurements are uploaded daily to the national Electronic Health Record (EHR) system, where experts will get a warning if the measurements are out of the ordinary. She has set the Stone to upload the data every night without her need to accept. One night the EHR system is unavailable. The Stone lets Alice know that is has tried to send the data without success. She then places it next to her computer, and the display is now on her computer screen. She points at the notification about the missed send of a message, and a graphical view of the connections is