

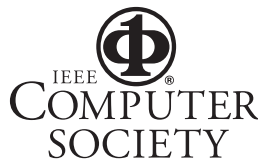


Take Your Mobile Device Out from behind the Requirements Desk

Norbert Seyff, Paul Grünbacher, and Neil Maiden

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Take Your Mobile Device Out from behind the Requirements Desk

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Mobile computing devices are everywhere. Everyone has a mobile phone, and many also have a smart phone, PDA, BlackBerry, or similar. Recent technological improvements let most wireless devices connect to the Internet and many Web ser-

can do a lot of neat things with mobile devices in your requirements process. Some of these ideas draw on and demonstrate research that we've undertaken when implementing several requirements applications on mobile devices.

Capture requirements from stakeholders at work

Observing stakeholders at work and asking the right questions at the right time can significantly improve your requirements' quality. You can go to a site and use your intuition, pencil, and paper to elicit requirements, or you can follow a structured approach from a mobile requirements engineering tool. Imagine that your mobile device offers useful questions for capturing requirements relevant to your stakeholders' work context. Our Mobile Scenario Presenter tool (see figure 1) does just that.¹ The MSP supports contextual inquiry—a customer-centered process that determines how people work to ultimately discover the optimal redesign of work practice.²

Experience scenarios and use cases

Many analysts use scenarios and use cases to acquire requirements with stakeholders. At the same time, applications are increasingly distributed and mobile. So, you could upload scenarios onto your mobile device, take them along to explore the scenarios in the mobile workplace, and then record requirements and other important outcomes onto the device. As such, mobile

vices. This presents exciting new opportunities for requirements analysts. Why only invent requirements in the office during a brainstorming session? Stakeholders are notoriously difficult to involve in requirements processes because they're often unavailable when and where you want them. What about the proverbial good idea you come up with in the bath? Shouldn't we be able to capture requirements anywhere, anytime using our mobile devices? Why not capture requirements on your mobile telephone and then phone them in?

The simple answer is that most practitioners we've talked to simply haven't thought of it. You



devices let analysts explore future system usage scenarios in current work contexts, thus acquiring more complete and precise requirements.

Capture multimedia requirements

Why rely on text when documenting requirements? Mobile devices have a lot to offer. You can record audio notes, create sketches, take pictures, and even capture videos. Analysts have used multimedia requirements in the past but on a limited scale.^{3,4} Multimedia specifications are often easier to understand, more interesting to review, and better equipped to capture the system context than traditional notations. However, practitioners haven't used multimedia techniques widely in RE processes. Easy-to-use mobile tools might be the answer. In the future, when combined with speech recognition software, such tools will also offer new opportunities to exploit spoken requirements directly.

Use structured requirements techniques in the field

Yes, you can describe your requirements with general-purpose mobile applications such as notepads and drawing tools. But why not receive tailored RE methods, guidelines, and checklists that deliver just-in-time training and advice for requirements processes through your device, like we're developing in the EU-funded APOSDLE (Advanced Process-Oriented Self-Directed Learning Environment) project? Our MSP tool provides checklists for key scenarios so that the mobile analyst can make requirements more complete and correct. And our ARENA-M (Mobile Anytime, Anywhere Requirements Negotiation Aid) tool lets stakeholders participate in negotiation by adding new ideas, raising issues, or voting on the priority of requirements (see figure 2).

Share and evolve your requirements together

As your mobile device connects you with the world, you can share your ideas, experiences, and requirements with your colleagues in real time. If you're using a requirements manage-

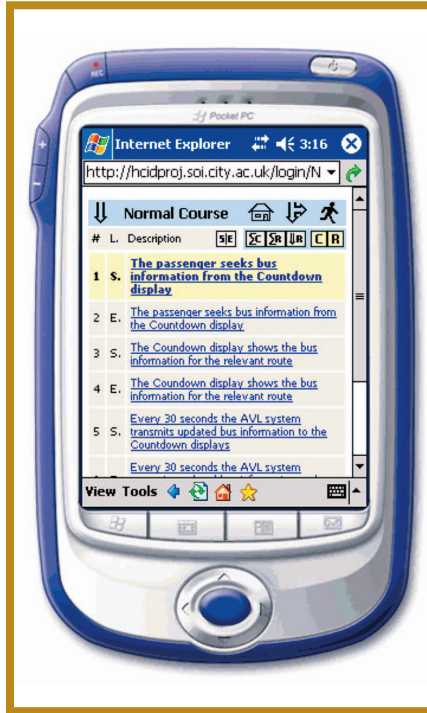


Figure 1. The Mobile Scenario Presenter tool.

ment system, your mobile device is the key to accessing requirements whenever and wherever you want. Access to requirements repositories means you



Figure 2. The ARENA-M tool.

can capture ideas as soon as they arise and share them with your peers. You can also negotiate your requirements with your colleagues while working in the field.

Boost stakeholder involvement and collaboration

Involving stakeholders is an important part of a successful RE process. However, key stakeholders typically have busy schedules, and it's often unrealistic or impossible to bring them together in workshops. ARENA-M is based on Barry Boehm's win-win negotiation model and the EasyWinWin process.⁵ It lets stakeholders join requirements negotiation anytime and anyplace, so you can collaborate with peers to work toward consensus on important and success-critical requirements.

Make the RE process mobile

If your future system is mobile, the RE approach must be mobile, too. Mobile working offers new possibilities for eliciting, negotiating, and validating requirements. For example, when validating a mobile tool's performance, you should work in real-world contexts to investigate whether the requirements are satisfied. If your system behavior depends strongly on the environment, go there and explore it. Your mobile work can complement your existing approaches and improve your performance and efficiency.

Blog your requirements

Ambient intelligence and ubiquitous computing are increasingly dominant computing paradigms.⁶ RE will require radical changes to cope with the new challenges these paradigms pose. Ubiquitous applications suggest the need for mobile and ubiquitous RE tools to explore how future systems will react to changing contexts in the workplace. They can also encourage end-user RE, in which end users employ familiar devices such as mobile phones to blog their own requirements as input into a more formal RE process. Why not try it? It's going to happen sooner rather than later.



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Richard Stallman is the founder of the GNU Project, launched in 1984 to develop the free software operating system GNU. In January 1984 he resigned from MIT to start the GNU project. Stallman received the Grace Hopper award for 1991 from the Association for Computing Machinery, for his development of the first Emacs editor. He has been awarded four honorary doctorates, and numerous awards.



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REQUIREMENTS

These new opportunities and emerging research solutions broaden requirements' scope and role in light of new technologies. The ideas here are by no means exhaustive—just some immediate suggestions for practitioners. If you do try them, let us know or blog your experiences. ☺

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