

MobiCASE 2010
Workshop on Mobile Software Engineering
Position Paper Template

Event: October 28, 2010.
Mail paper to wmse@sv.cmu.edu by July 15, 2010.
No more than 2 pages, 11 point font.

Paper title: Tools and Approaches to Software Engineering the Mobile Space Desperately Need Modernization.

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Please state your point of view on the issues of Mobile Software Engineering. Please specifically address the following 5 questions:

1. Experience as a software engineer:

Thirty years of professional software development in C, C++, Java, Ruby. Generally on software development tools problem domains of relational databases, web services and mobility.

2. Experience in mobility:

Six years of experience building applications and development tools for mobile software.

3. How does traditional software engineering relate to mobile applications?

Tools and approaches to mobile software development languish in a backwater reminiscent of the environment of a quarter century ago. iPhone development is primarily performed in Objective-C, a very old language that doesn't enjoy the benefits of more modern language development. The same is true on Windows Mobile when performed in C++. And on Symbian devices (still the most widespread smartphone OS). Even Nokia and Intel's forthcoming Meego OS will still be promoting C++ for development.

The downsides of this old set of languages and tools include lack of :

- automatic memory management
- scripting languages with typeless development
- easy metaprogramming (creating of classes and code dynamically)

This means mobile software development is much more labor intensive, error prone and biased towards more advanced developers. This slows down the rate of mobile applications and inhibits widespread development leaving many application needs unfilled. It is still true that iPhone and Android App Store apps for enterprise apps are still rare and not in widespread use.

4. What are the distinguishing features of mobile software specification that need special attention, skills and innovation?

Beyond the difficulty of mobile development due to old languages and toolsets, testing for mobile development is particularly difficult. Because of the dominance of native mobile apps (versus mobile web apps) what needs to be tested is apps on the device. Unlike the web app world, which is rife with many robust frameworks there are no widespread approaches to automated testing of mobile apps.

5. What is the suggested area of focus for mobile engineering research and education?

The suggested area of approach for mobile engineering research are:

- 1) applying the most modern software development languages and patterns to mobile development
- 2) modernizing native local mobile app development to use best of breed automated testing approaches as currently practiced in the web development world