

Context-Aware Applications

How Will This Paradigm Change Application Architecture?

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March 7, 2013

| Abstract

This presentation will begin with a brief discussion of the history of context-aware applications. The topic will then gradually diverge to entail an analysis of how the context-aware development paradigm could support already-successful applications, and how new context-aware applications are dramatically changing the landscape of the mobile development environment.

Throughout, we will be analyzing the viability of context-aware applications by outlining their development process and highlighting some of the challenges and pitfalls that these applications often encounter. During the presentation of this idea, we will include many references to our semester project, *Social Sonar*, wherein we will explain some of the challenges involved with the context-aware branches of the implementation.

Further, we will compare an ad-hoc implementation of context-aware behavior with similar behavior using an extensive network infrastructure as a backbone. We will contrast the drawbacks of each implementation and conclude with a high-level analysis of each approach, culminating in general suggestions for best practices when deciding on an architecture for a context-aware application.

Finally, we will discuss the ramifications of the various research papers (described below), and outline their key points focusing on how they influenced our research. We will first detail their primary objectives and then translate those objectives into even more robust considerations for context-aware application development.

| Related Work and Cited Papers

* Dey, Anind. *Understanding and Using Context*. MS thesis. Georgia Institute of Technology, 2001. Print.

Schilit, Bill, Adams Norman, and Roy Want. "Context-Aware Computing Applications." 1994. Print.

William Noah Schilit "A System Architecture for Context-Aware Mobile Computing", Columbia University. 1995. Print.

Norman H. Cohen, James Black, Paul Castro, Maria Ebling, Barry Leiba, Archan Misra, Wolfgang Segmuller "IBM Research report : Building Context-Aware Applications with Context Weaver"

* Convington, Michael, Wende Long, Srividhya Srinivasan, et al. Georgia Institute of Technology, 2001. "Securing Context-Aware Applications Using Environment Roles.". Print.

Brown, Peter, John Bovey, and Xian Chen. "Context-aware applications: from the laboratory to the marketplace." *Personal Communications, IEEE*. (1997): 85-90. Print.

Rodden, Tom, Kieth Chervest, and Nigel Davies. "Exploiting Context in HCI Design for Mobile Systems." *First Workshop on Human Computer Interaction with Mobile Devices*. (1998): n. page. Web. 7 Mar. 2013.

*Note that a (*) denotes that this paper had a heavy influence on the contents of our presentation*