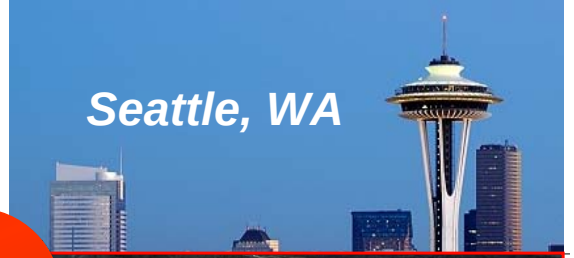
Fully Mobile City Government

Recent Research Activities



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The Fully Mobile City Government Project (mCity) investigates how fully mobile wirelessly connected applications are implemented and used in fieldwork at the City of Seattle. The project applies a work-centered approach to data collection and analysis. In addition, stakeholder analysis is applied to relevant research questions.

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Study Design and Study Site

The study uses a theoretical framework that is a combination of an extended Orlikowski & Robey framework and of Cognitive Work Analysis [1]. Data are collected through field studies, observations and interviews with fieldworkers and managers at **Seattle Public Utilities** (SPU). SPU serves around 1.3 million customers. Included in the infrastructure SPU maintains are 1,800 miles of pipeline for water supply, 1,491 miles of combined sewer and sanitary pipelines and 45,396 catch basins. Two of SPU's fieldwork divisions -

Photograph courtesy Seattle Municipal Archives, item no. 130301

Water Operations and Drainage and Wastewater - have gone mobile and are pioneering the use of FMWC applications in **fieldwork operations**. Fieldworkers are given handheld devices on which they receive their work orders and information on work procedures. Furthermore ruggedized laptops are in use. Via FMWC devices, crews can access the stationary backend systems for information access and entry.

So far data is collected on 12 cases of 50 cases planned. The first 12 cases are all collected in the Drainage and Wastewater Division.

Preliminary Findings

We found that workers have a high level of willingness to use mobile technology if it helps them do their job and satisfy the customer. Tacit knowledge (the smell and texture of the soil, the sound the tip of a metal pole makes when it taps cement vs. debris at the bottom of a drainage hole, etc.) is very important to fieldwork tasks and this type of knowledge needs to be shared among the workers. Unlike shop floor or back office work, much of fieldwork is highly unstructured. Fieldwork is also rich with detail resulting in a high task complexity, see figure 1. Consequently, We find that many standard and routine-based applications provide poor fit to the much more challenging and changing requirements of fieldwork.

While some mobile components work well, many others pose major challenges to fieldworkers and management alike. The challenges are (1) related to human workers, (2) related to work and task, (3) organizational, and (4) technological. We found these challenges to be intertwined.

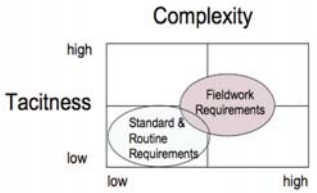

Figure 1. Fieldwork characteristics

The goal of our project is to identify the strategic choices and specify the requirements, which make mobile ICT in local government fieldwork successful even under its most challenging circumstances.

Reference

[1]. Scholl, H.J., Fidel, R., Mai, J.-E., Unsworth, K. (2006). Seattle's Mobile City Project. Paper to the Second European Conference on Mobile Government, August 30-September 1, 2006, University of Sussex, Brighton, UK.

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http://projects.ischool.washington.edu/chii/mcity