

Understanding Real World Practices: A Place-Centered Study of Mobile Workers

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What Place Is

- Space
 - Physical space, area within which activities occur
- Place
 - Place is experienced space - different aspect of the same thing
 - **Personal dimensions** (*feelings emotions and memories*) **social and cultural aspects** (*interaction, communication, conventions*) of human **experience** of the physical environment (Tuan 1977)
 - Sack (1997) notes that "Place constrains and enables our actions and our actions construct and maintain places".
 - Brown and O'Hara (2002) note how "place changes work" and "work changes place"

Background

- Case Study - Introduction of new technology
 - Before and After
 - What we wanted to identify and examine
 - Activities in the real world / emplaced activity
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- A place-centered perspective helps expose real world activities

Aims of our study



- Aim was to understand the **impact of the technology** on mobile workers' situated practices and activities.
- Develop design sensitivities and guidelines to support these practices

- **Leading onto:**

- To understand the mobile workers' **practices as situated in place**, and therefore shaped by the features, resources, possibilities and limitations that the physical environment presents to them (brown and O'Hara 2003)
- To examine the **interactional boundaries** that can come to the fore in certain emplaced activities.

how they can be related into practical decision making

Case study

- Representatives of an Irish joinery
 - Study of the introduction of an XDA

- Study of 8 reps before and after the device was introduced
- Ethnographically based study

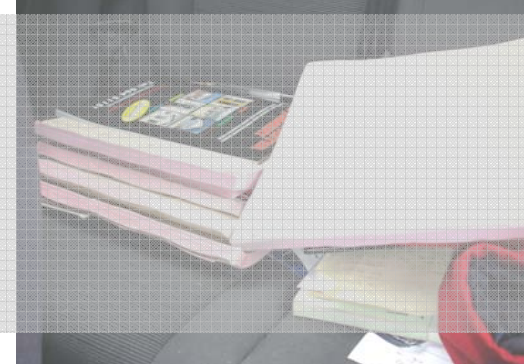


Issues with the old system

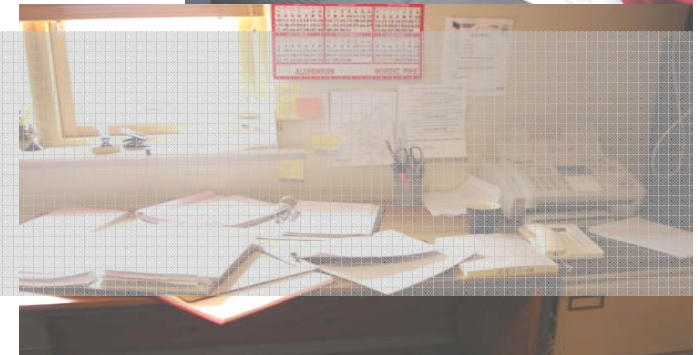
- Building site
 - Adverse climate (rain, wind, mud, etc.)
 - Change tools all the time
 - Cannot answer their phone easily
 - Difficult to take notes
 - Carry around bulky equipment



- Car
 - Communicating with customers
 - Information retrieval – orders
 - Storage



- Office
 - Paper work
 - Faxing
 - Copying information



Quote

- *“If **I’m alone** on site I don’t have any supports, I have the elevation book and a pen between my legs and the digirod [electronic measuring device] in my hands, so I’m measuring and I’m writing and I’m measuring and I’m writing, so you have to write down as soon as you measure, because if you have measured a window’s length and height it might get **confused** in your head, a disaster.”*

Rationale for an Electronic System

Remove the repetitive aspect of work

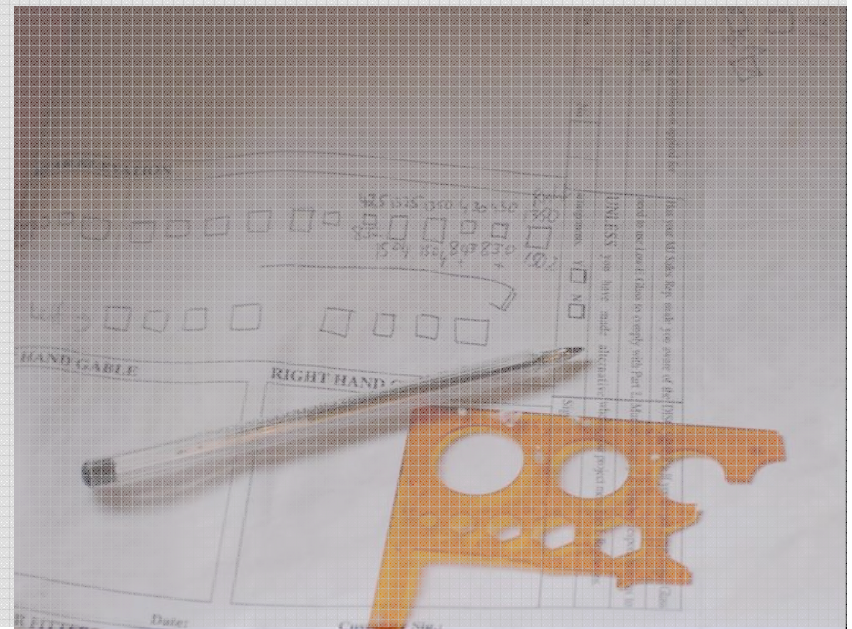
Ability to send orders anytime anywhere

Remove some of the paper trail

Give access to information more easily

Create clearer orders

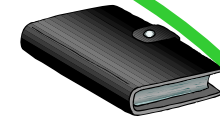
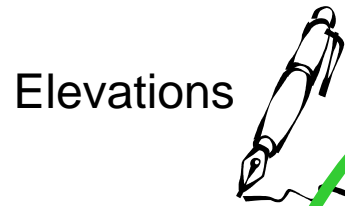
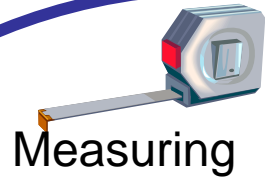
Reduce the possibility of making mistakes



Activities

Site

Car



Pricing €



Office

Quotes - Positive

- *“The XDA made it very possible to work in the car, to work **anywhere** on a Saturday, out in the garden. With the contract book you’re **tied** to the desk. With the XDA there is a huge amount of **freedom**”*
- *“Using the XDA I find I’m **concentrating** more keying stuff into it. I’m conscious of the fact that I don’t want to make a **mistake** with it.”*

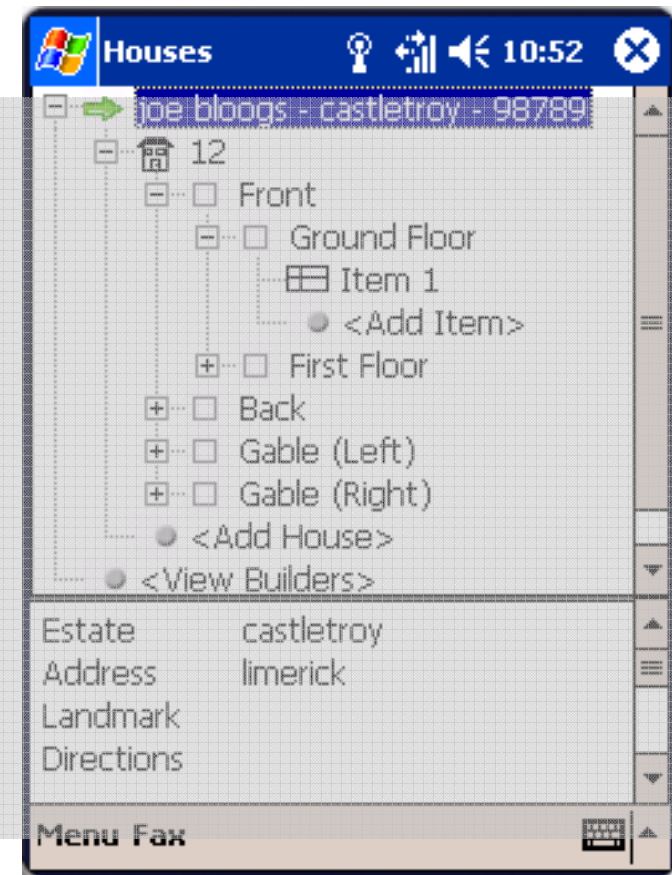
Quotes - Negative

- *“No I don’t [bring the XDA to the building site], I’d be nervous enough about it - I’d be afraid of it falling out of my pocket or letting it fall, I’d be **afraid of my life** to damage that thing”*
- *“I’m finding the block sites are taking **longer** to do. You have to go into each thing (house) and then **edit each thing** (item) and change the sizes”.*
- *“When I go measuring a house it would be from the **left over**. It’s just to make it easier for everyone. When **they start having problems** that’s when your fecked”.*

XDA and their Activities

- Positives
 - Made certain activities more flexible

- Negatives
 - Interface/device didn't support their emplaced activities
 - Didn't support the separation of the two forms or activities
 - Fragility of the device didn't fit with the workplace conditions
 - Inadequate Information display



Summary

- Lack of consideration to the situated and emplaced aspects of activity during its design
- The practicalities of the emplaced work practices and contextual conditions weren't taken into account during design

- Need to fit the XDA's activities to the place, taking into account the qualities and constraints of the environment as they are connected to the workers practices, tasks and knowledge

Results/Design Concerns

- **Interface to separate the two activities**
 - Measurement recording
 - Item detailing
- **Information layout and retrieval**

- **Measuring activity – digirod**
- **Colour change – rugged device**



New Design - Concerns

- Navigation
- Mode of interaction
- Visibility

