LMU LUDWIG-MAXIMILIANS-UNIVERSITÄT MÜNCHEN

LFE Medieninformatik • Maximilian Schenk

Prototyping for the development of ergonomic interactive surfaces

Medieninformatik Hauptseminar

Wintersemester 2009/2010

„Prototyping for the development of ergonomic interactive surfaces “

Agenda

1. What is Ergonomics?
2. Ergonomic Input Parameters
3. Projects with or without Ergonomic Prototyping
4. Is Prototyping reasonable?

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What is Ergonomics?

“Without investigation of real use, technical feasibility can be meaningless.”

Interactions among humans and other elements of a system can be seen as ergonomic if data and methods are designed ”in order to optimize human well-being and overall system performance.”

Source:
Fitton et. al (2005)
IEA (2000)

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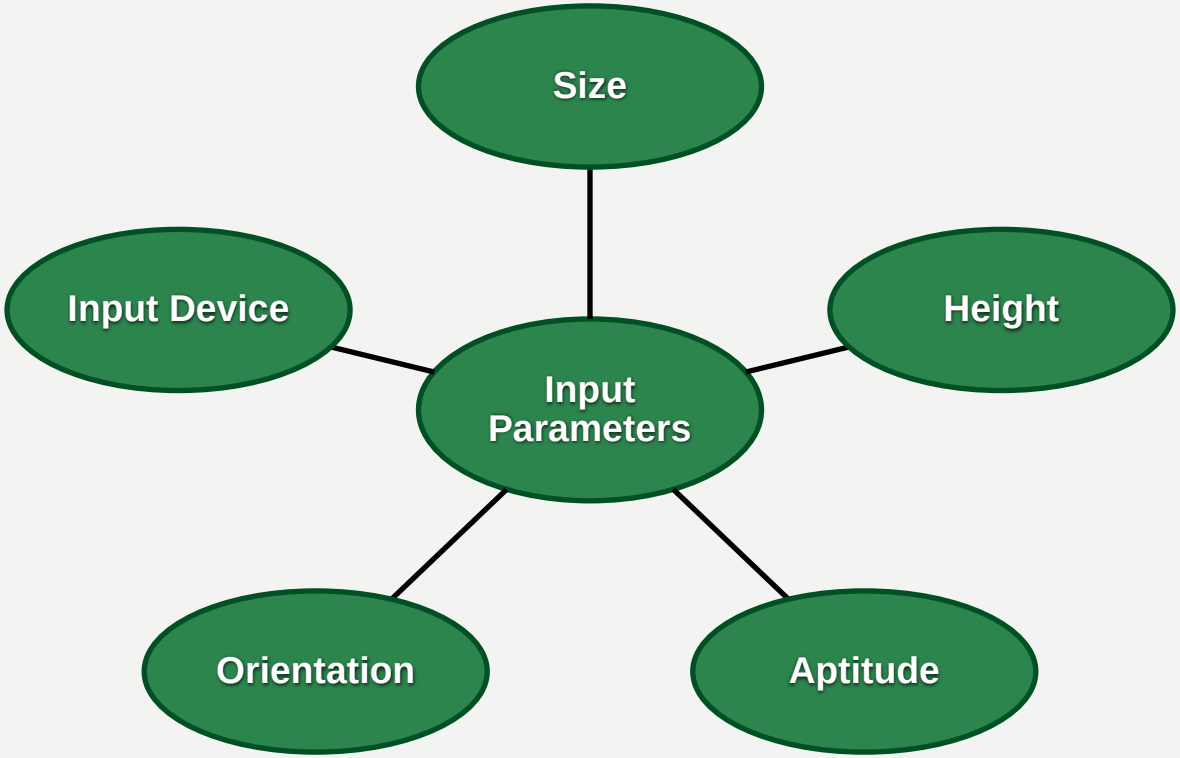
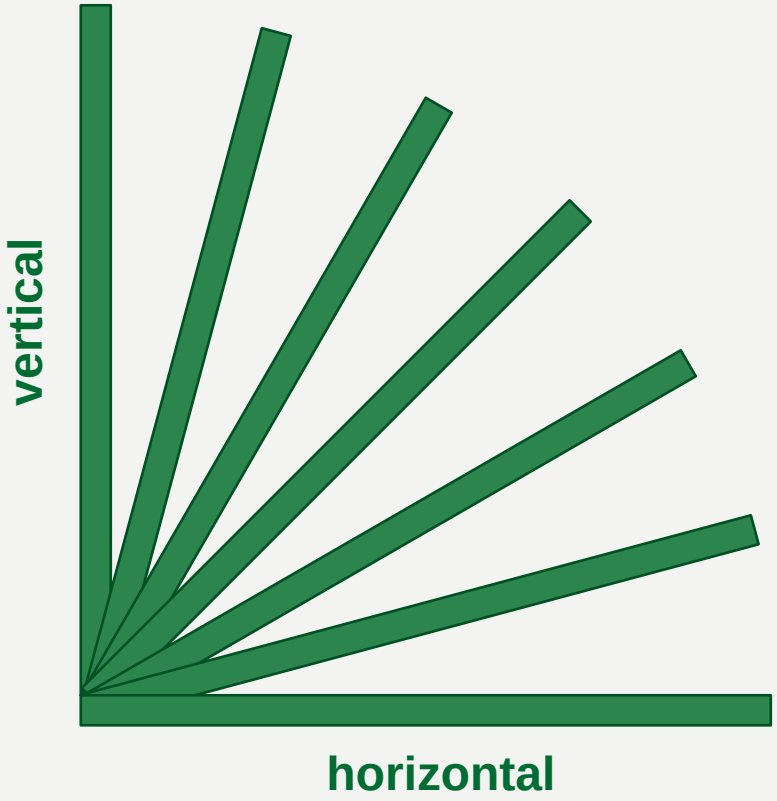
Ergonomic Input Parameters



Orientation & Aptitude



Height

Standing

Sitting

Coffee Table Height

Desk Height

Sources:
Widgor et al. (2007), Ryall et al. (2005)

Size

Single Workstation

Collaborative Work

Public Display

Handheld Computer

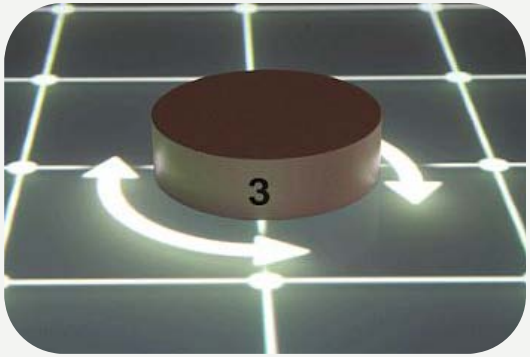
Sources:
BBC (2010), Feelphones.com (2010), Ryall et al. (2006) Widgor et al. (2007)

Input Devices

Keyboard & Mouse

Ergonomic Mouse

Stylus



Tangible

Sources:
logitech.de (2010), uebergizmo.com (2010), gizmowatch.com (2010)

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Curve

Source:
Wimmer et al. (2009)

Curve

General Requirements ← Literature

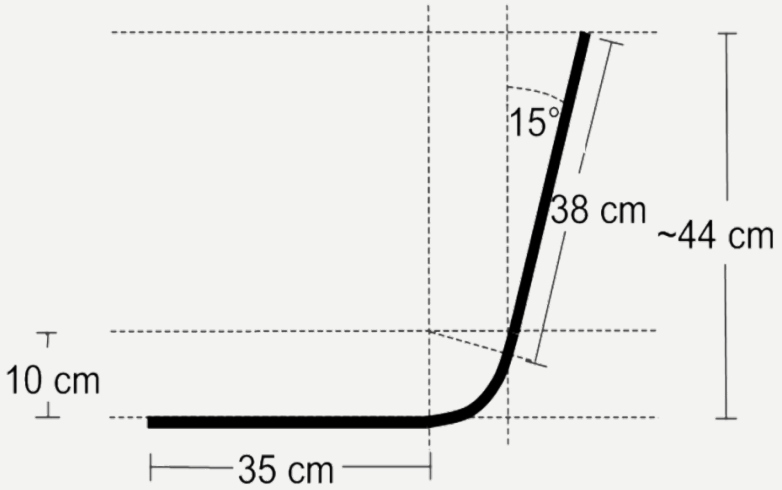
Additional Requirements ← Experts

↓

3 Independant Variables

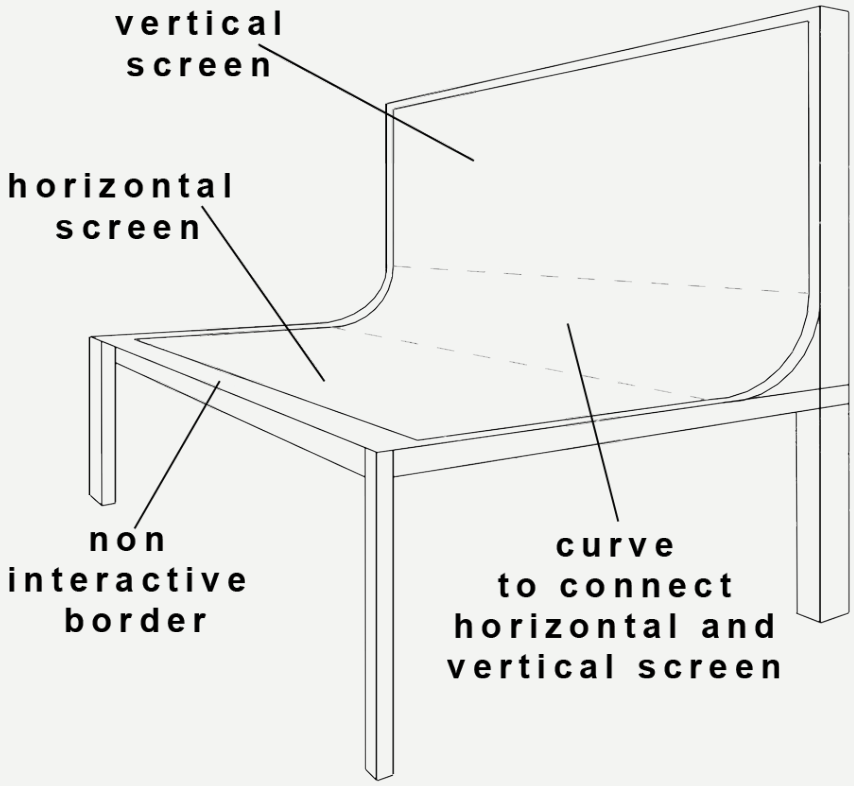
↓

18 Prototypes + Study →



Source:
Wimmer et al. (2009)

BendDesk

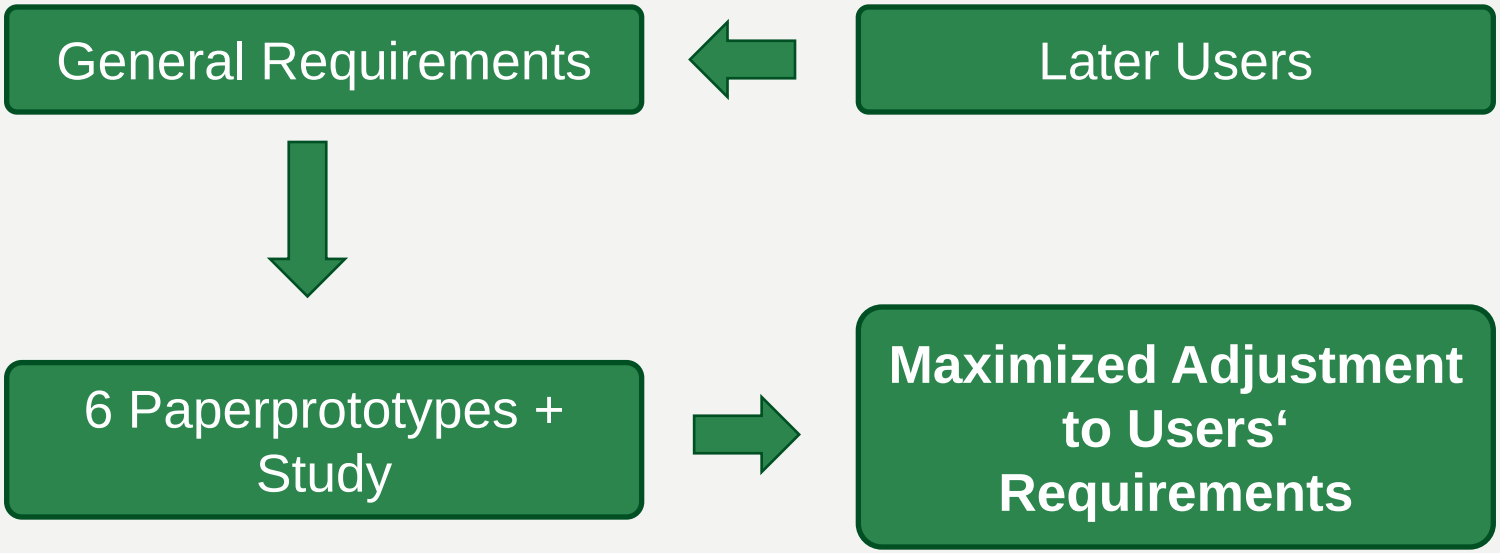


Source:
Weiß et al. (2009)

Interactive Group Learning

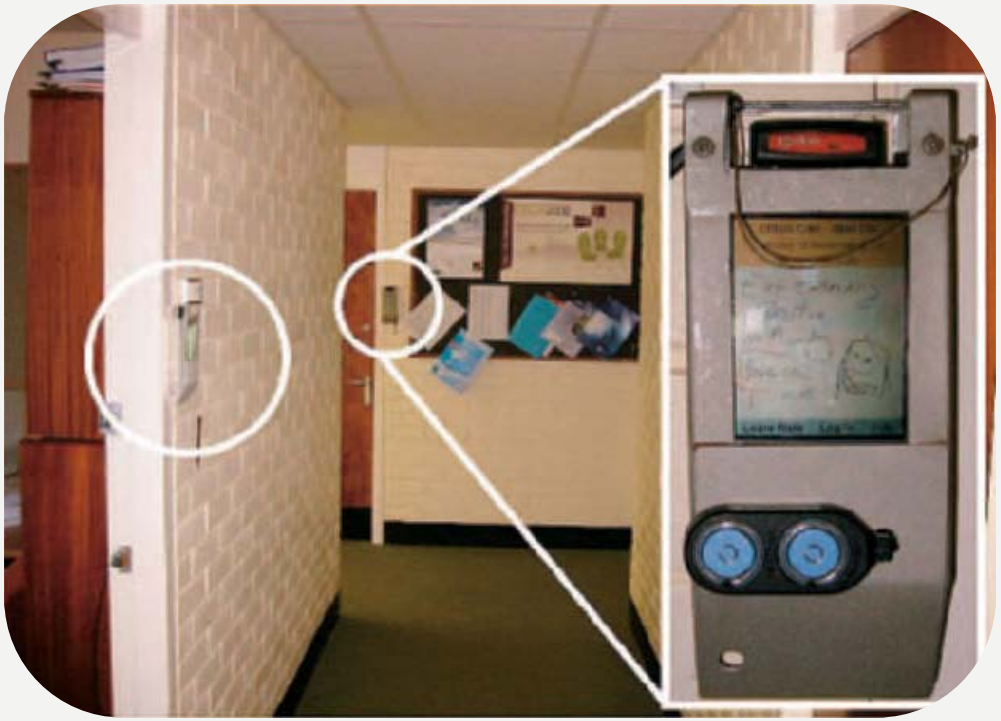
Source:
Sugimoto et al. (2002)

Interactive Group Learning



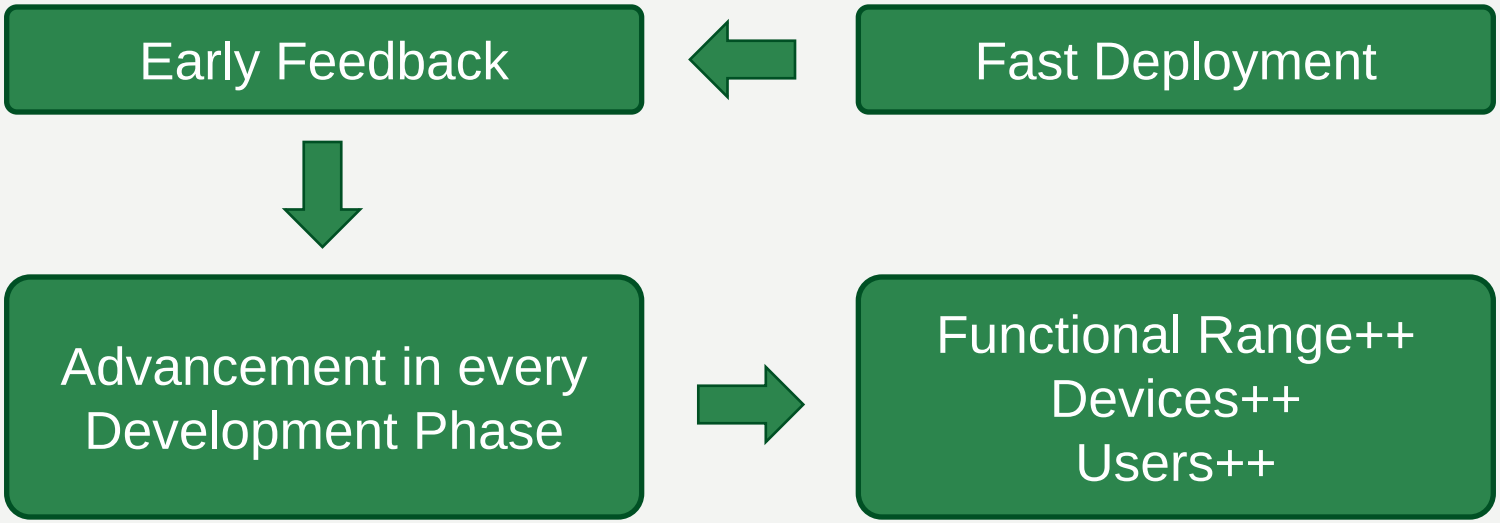
Source:
Sugimoto et al. (2002)

Hermes 1



Source:
Fitton et. al (2005)

Hermes 1



Source:
Fitton et. al (2005)

SMS Public Asynchronous Messenger (“SPAM“)

Source:
Fitton et. al (2005), Cheverst et al.(2002)

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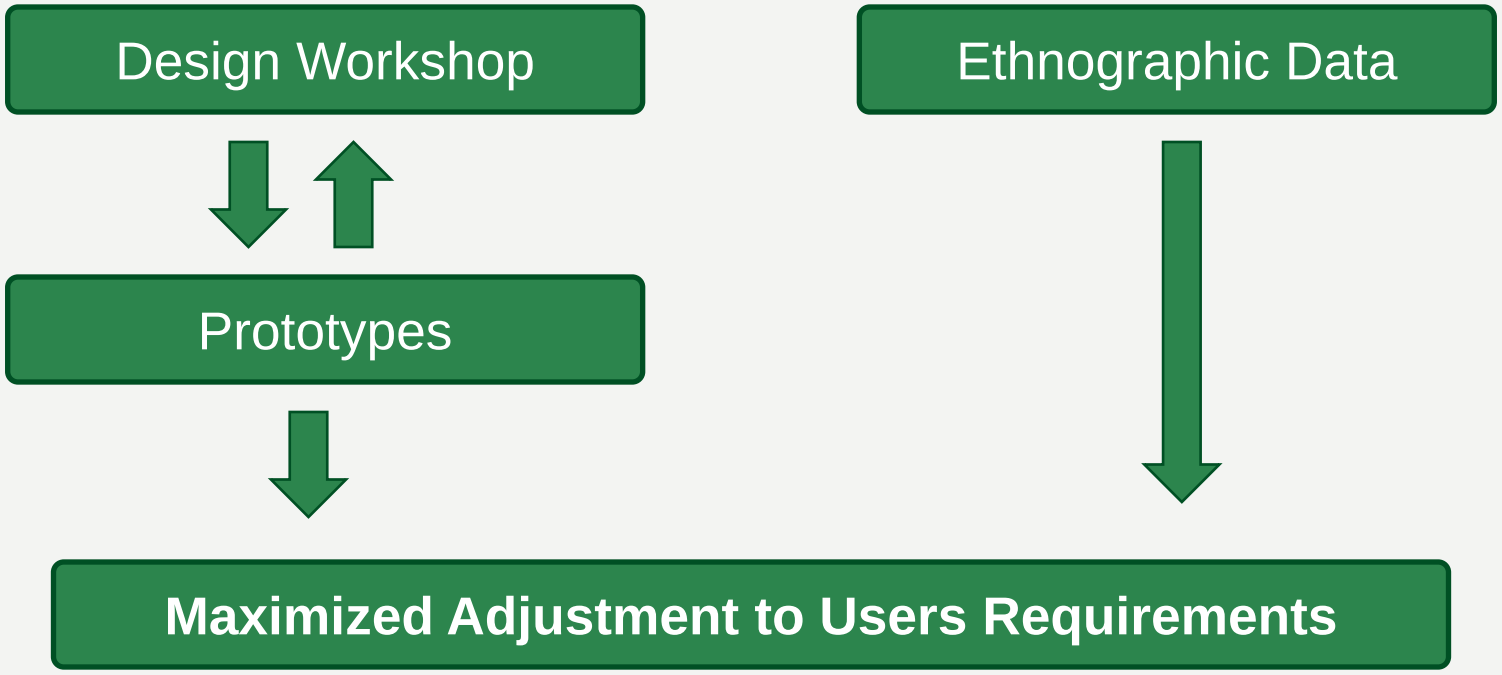
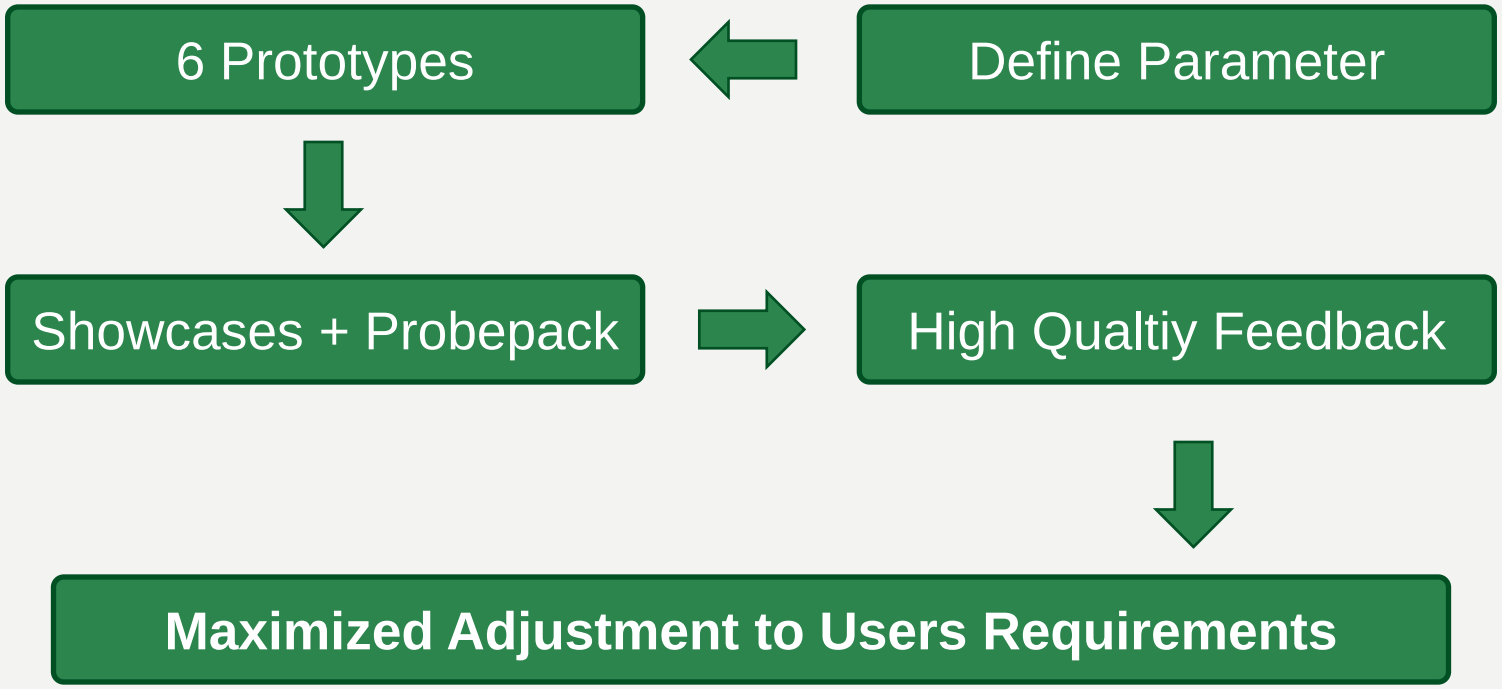


Source:
Fitton et. al (2005), Cheverst et al.(2002)

Hermes 2

Source:
Fitton et. al (2005)

Hermes 2



Source:
Fitton et. al (2005)

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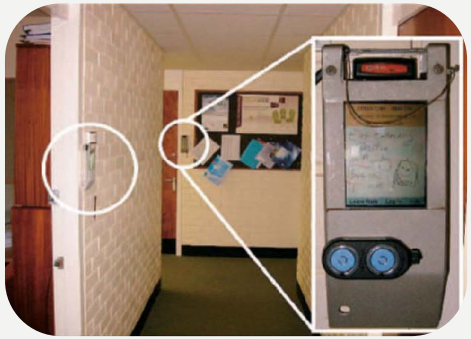
Is Prototyping reasonable?

Maybe

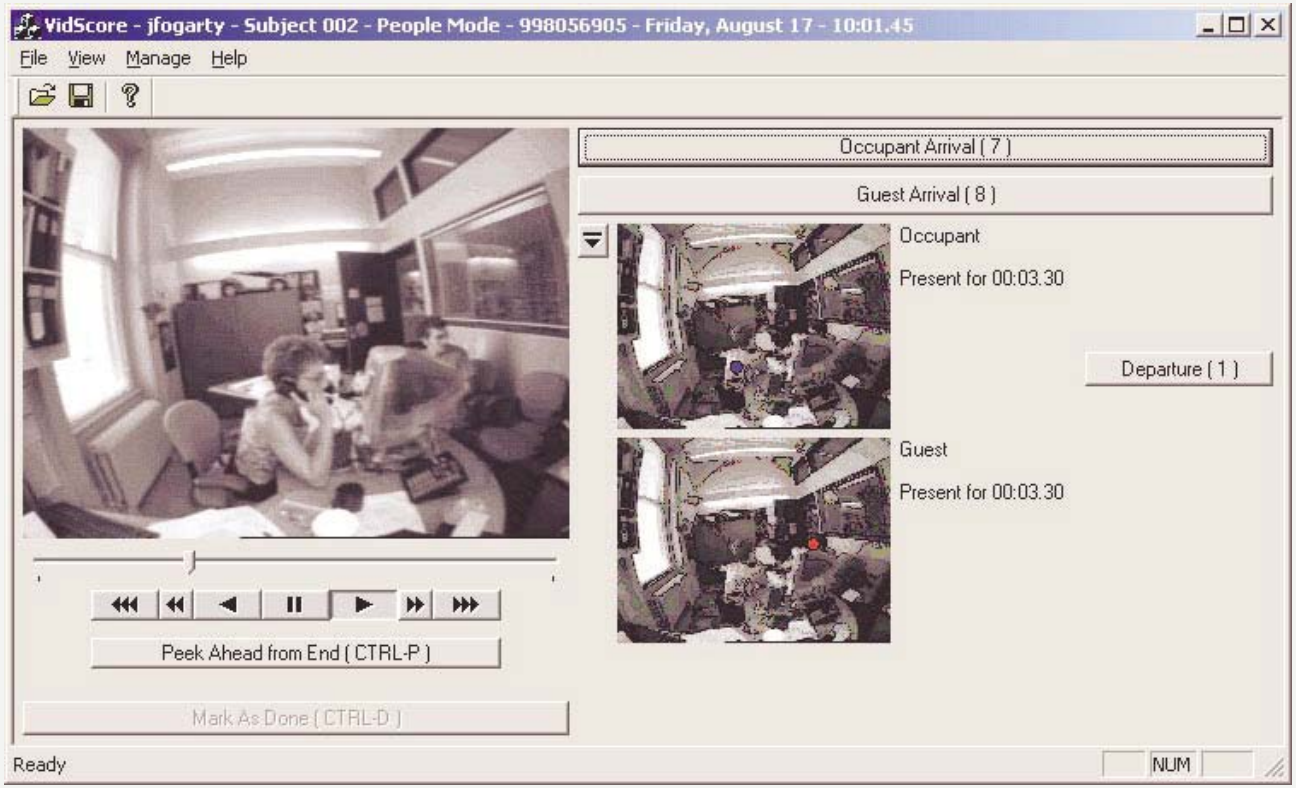
Uncertain Requirements ⟺ Preliminary Work

Ergonomic Issues:
Influencing by Parameters
User Feedback

Any Questions?

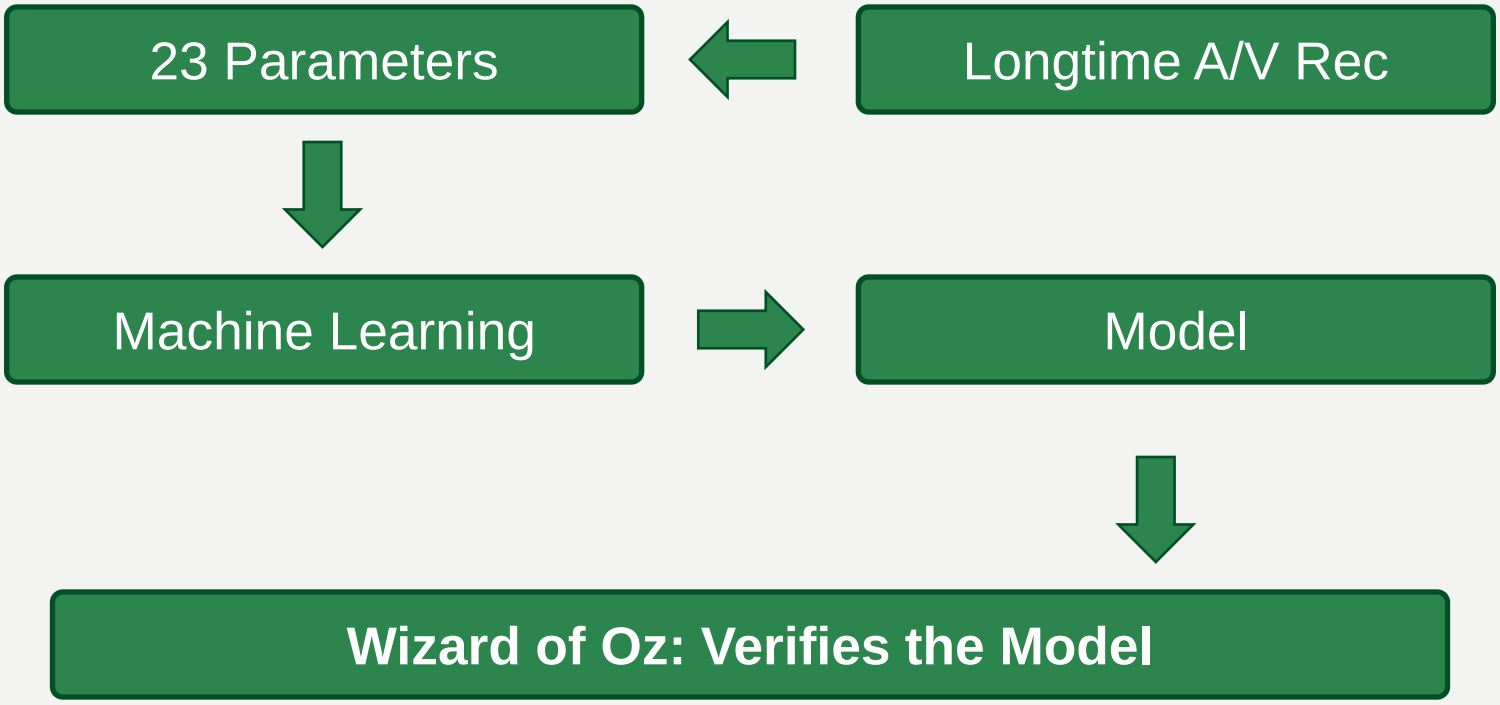


Interuptibility Prediction



Source:
Hudson et al. (2003)

Interuptibility Prediction



Source:
Hudson et al. (2003)

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