

Class 7

Adaptation meets Ubiquitous Computing

April 7

Self-Healing Systems - Spring 2003

João Pedro Sousa

Readings

- João Pedro Sousa, David Garlan
**Aura: an Architectural Framework for User
Mobility in Ubiquitous Computing Environments**
- Rajesh Balan, João Pedro Sousa, M. Satyanarayanan
**Meeting the Software Engineering Challenges of
Adaptive Mobile Applications**
- Ponnekanti, Lee, Fox, Hanrahan, Winograd
**ICrafter: A Service Framework for Ubiquitous
Computing Environments**

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Problem Characterization

Domain: Ubicomp

Environments

- rich in alternatives
- heterogeneous
- dynamic variation
 - capabilities
 - resources

User

- mobile
- daily tasks

Goal: maximize Utility

Benefit

- Quality of Service
- match user needs

Cost

- \$\$\$
- opportunity
- distraction
(re)configuration of environments

Tools/techniques

Models

- system (architecture)
- environment
 - capabilities
 - resources
- user needs
- user preferences

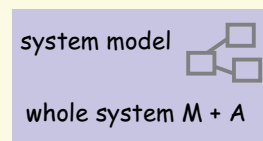
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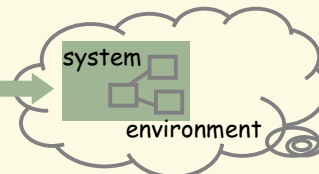
previously in SHS:

External model of the whole system

Rainbow



translator(s)



missing models of

- environment
- user needs

problem:

- dynamic variation
 - env capabilities
 - user intent

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