Privacy Invasions in Ubicomp

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Helpful Concepts

Privacy Workshop, Ubicomp 2002

- Privacy Boundaries
  - When do people feel their privacy is being violated
- Privacy Motivations
  - To what extend do we want to protect people’s privacy?
- No Solutions
  - Just food for thought
Privacy Invasions: “When?”

Privacy Invasive Effects Of Surveillance And Data Collection Due To Crossing Of Personal Borders
  – Prof. Gary T. Marx, MIT

Privacy Boundaries
  – Natural
  – Social
  – Spatial / Temporal
  – Ephemeral / Transitory
Privacy Boundaries

- Natural
  - Physical limitations (doors, sealed letters)
- Social
  - Group confidentiality (doctors, colleagues)
- Spatial / Temporal
  - Family vs. work, adolescence vs. midlife
- Transitory
  - Fleeting moments, unreflected utterances
Examples: Border Crossings

- Smart Appliances
  - “Spy” on you in your own home (natural borders)
- Family Intercom
  - Grandma knows when you’re home (social borders)
- Consumer Profiles
  - Span time & space (spatial/temporal borders)
- “Memory Amplifier”
  - Records careless utterances (transitory borders)
Privacy Protection: “Why?”

- As Empowerment
  - “Ownership” of personal data
- As Utility
  - Protection from nuisances (e.g., spam)
- As Dignity
  - Balance of power (“nakedness”)
- As Constraint Of Power
  - Limits enforcement capabilities of ruling elite
- As By-Product
  - Residue of inefficient collection mechanisms

Example: Search And Seizures

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- 4th Amendment Of US Constitution
  - “The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no warrants shall issue, but upon probable cause, supported by oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized.”

- Privacy As Utility? Privacy As Dignity?
Search & Seizures 21st Century

- All Home Software Configured By Law To Monitor For Illegal Activities
  - Fridges detect stored explosives, pcs scan hard disks for illegal data, knifes report stabbings

- Non-illegal Activities NOT Communicated
  - Private conversations, actions, remain private
  - Only illegal events reported to police

- No Nuisance Of Unjustified Searches
  - Compatible with 4th amendment?
Implications

- Privacy Boundaries
  - Helps to detect potential problems during system design

- Privacy Motivations
  - Guide extend of privacy protection provided by the system
  - Search capabilities central to system design