

Outline for today

Ubiquitous Computing Vision - continued

- *People, Places, Things: Web Presence for the Real World.* Cooltown Project at HP. In WMCSA '01



Cool town project

- The goal of this work is to bridge the electronic and physical world using the web as the glue
- Rationale:
 - Web is transparent access because of open standards Internet, http..
 - Access to the web is ubiquitous across different kinds of devices
 - Web already provides a wealth of electronically stored information.
- Places -home, office, malls etc.
- People - visitors we meet and interact with in Places
- Things - we find/use things when we visit Places



Web Presence

- Web presence means that the entity is bound to a resource that has a URL and is accessible by HTTP
 - Each web-present entity has a web page
 - you should be able to access any entities in this class room (projector, laptop, wireless access point, my Palm pilot etc) via an HTTP URL



Web Presence

- System-supported correlation: Places for web things and people in web places
 - URLs are distributed through restricted range wireless links, electronic tags ..
 - As people arrive in physical places, they discover URLs
- Web things and Web Places: Control and interrogation of devices
 - Ability to control a web-present device through its point of web presence
 - You can already configure printers, routers etc this way



..

- Web things talking to web things: Access by devices
 - Home management device interrogates a security monitoring services, finds that no one is home and turns on the lights ..



Modes of web presence

- Internal support:
 - The device itself supports HTTP operations on its web presence
- External Support:
 - Non-electronic entities provide their web presence location using tags.



Discover URLs

- Discover via network system
- Sensing electronically
- Distribution can be
 - Active – pushing information within range
 - E.g. infra-red, bluetooth beacon
 - Broadcast or directed
 - Passive – awaiting a sensor to request information
 - E.g. UPC bar code, iButton, RFID etc



Web presence for places

- Location specific web portals
 - Place contains a beacon that provides the URL of the place's portal.
 - Web portal for this class. Anyone should be able to find out who/what is here right now by pointing to BOYD 527 portal URL.
 - Contents provided by services within the place
 - Portal changes whether CSCI 4770 is in BOYD 527 or some other class is here



Web presence for people

- Information about people, way of communicating with them
- Global presence and place-specific web presence
- Identifying attributes can be place-specific
 - I can be Prof. Surendar Chandra or Surendar depending on the place



Infrastructure

- Services everywhere
 - Wide-spread access to a open set of services
- Scalable
 - Trillions of web places, things ..
- Simple model of configuration by users
 - Easy to administer
- Layered infrastructure
 - So that, simple devices can coexist with complicated services



Discussion

- Security
 - How do you provide secure access to authorized web entities?
- Information Overload
 - If there are trillions on web pages, possibly with multiple incarnations, how can we comprehend them?
- Delegation
 - If I see a nice art work and want to show it to you, what you see is not necessarily what I see?

