HP Use Cases for the Ubiquitous Web

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Introduction

- **The Web's Problem Today**
  - It *enables* long-distance, complex path, device-to-device interactions
  - But, *actual implementations* are too often complex and/or proprietary
- **The Need**
  - Facilitate these interactions with ubiquitous open standards
- **HP proposes a Use Case-based approach to the solution**
  - Following are some use cases HP would like to facilitate
  - All are implementable today.
  - Some already have proprietary or domain-specific implementations.
- **So, what's missing?**
  - Solutions using vendor-independent, device-independent, context-independent, open standards

Use Cases

Use Case 1: Photo Archiving (1) User Actions

- Janine has a digital camera that is pre-configured to automatically:
  - Recognize public Wi-Fi hotspots, then
  - Archive all unarchived photos to her home server
- At a hotspot the camera performs the following:
  - It "securely discovers" her home archive server
  - It transmits new photos for archiving
  - It receives notification of success or failure for each individual photo
  - It marks successfully archived photos
  - It informs Janine of the results

Use Case 1: Photo Archiving   (2) Standard Technologies Required

- Secure "discovery" of home server. This includes:
  - Secure transmission of all information that identifies Janine's home and any of its devices
  - Secure access to Janine's home devices *through* her firewall
- Device-to-device protocol supporting the archive process and returned status.

Use Case 2: Photo Sharing (1)
User Actions

- Frank and his family are visiting his parents
- He takes a great photo of his kids with their grandparents using his Wi-Fi camera. His parents want a copy.
- Frank presses the camera's 'Print and Store' button to immediately print one 5"x7" and two wallet-size photos.
- The camera finds their Wi-Fi networked printer and sends the photo.
- The printer also transparently uploads a copy of the image to the default image archive server, which is located on his parents' home computer.
- This reaffirms his parents' belief that their son is brilliant.

Use Case 2: Photo Sharing (2) Standard Technologies Required

- Discovery protocol to find the locally-connected printer and learn its capabilities
- Standard print protocol
- Standard archive protocol with transparent proxying

- Marie is visiting a major client.
- To close a deal, she needs ten printed copies of the contract Statement of Work immediately.
  - Yes, it's the client's requirement, not Marie's.
  - The client *believes* in the paperless office.
    Their procedures just haven't caught up!
- Marie tries to print downstairs at the client's office
  - Their fast, collating, stapling, multi-copy printer is busy printing a large, higher priority job.
  - The printer will not be able to fulfill her request in time.
- Her laptop print manager discovers that the Kinko's across the steet can print the job on time.
  - She re-routes the job to Kinko's
  - Before re-routing, she extends the job description with a request to have the output delivered to the client's front desk.

- Discovery protocol to find the printers, their capabilities and *availability*.

- Adaptable UI on the client according to printer capabilities and availability.

- Standard print protocol, including routing information, such as the delivery from Kinko's.

HP's Primary Solution Interests

- ## Scalable Protocols
  - Use (or create) protocols that scale from a two sub-net home to the enterprise and the global web.
  - One Discovery Protocol
  - One Context Awareness model
  - One Device Capabilities model

- ## Remote UI
  - Include the ability to present the user interface for one device on another

- ## Learn from existing work on device coordination
  - Such as UPnP and others
  - Leverage where possible

HP Position Summary

- The solution domain is large, broad and complex
- W3C is uniquely positioned to address the domain in its entirety
- Many essential elements have already been standardized in various forms
  - Some done by the W3C and some elsewhere
  - This work should be leveraged where meaningful
- Much work remains
- It MUST all integrate seamlessly. This will take time.

Background Slides

Keys for Success

- From the beginning, ensure that usability, accessibility, and mobility are built in.

- Base the requirements and scope on Use Cases.
  - Understand the questions first.
  - Tailor the technical solution to answer the questions.
  - Don't create a technical solution and then try to decide what problems it solves.

Keys for Success

- Treat content, communication, and services with a unified model.

- Minimize implementation and communication costs.

    – Avoid overly-encumbered components.

- Use and leverage existing technologies, where they make sense.

- Use a staged approach

    – Identify a core set of Stage 1 solutions.

    – Establish a timeline for first and subsequent stages.

    – Publish individual components as they are mature.

        - This space is huge

        - We can't do it all at once