Contextual Multi-Device Delivery

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Single-Device Contextual Delivery: Benefits and Limitations

- **Benefits:** Device-specific downscaling of content
  - Select device-specific content version
  - Device-specific content transcoding

- **Limitations:** loss of “wow” factor
  - Even the cleverest miniaturization makes the service less compelling

- **The multi-device delivery option**
  - User travels thru computing islands with multiple devices
  - Users have multi-device ‘toolbelts’
  - Service architecture treats computing island as single logical device
Components of multi-device orchestration

- axioms
  - All-IP network, multiple access networks
  - Peer-to-peer (not c/s), not necessarily HTTP
  - Proxy (“edge box”) in the path
  - Devices as containers of downloadable plug-ins

- aggregate capabilities of a device neighborhood
  - inherent capabilities (model#, o/s)
  - resource availability (e.g. sound card)
  - environmental device attributes (e.g. device orientation)

- user and content provider orchestration preferences
  - Content provider - content re-targeting hints
  - User preferences - demultiplexing vs. transcoding, choice of access network

- allowable device plug-ins
CC/PP based Personal Mobility Solution

Internet

RTP multimedia Stream (video+audio)

Service Orchestrator

User Preferences

Operator Discovery

User Activation

Neighborhood Topology

CC/PP (over SIP) neighborhood capabilities and availability

Car

Parking Lot

Office

Transcoder Cloud

SIPlets - dynamic device personalities
CC/PP Perspective

• CC/PP model needs to include “pluggable” proxies
  – Current proxies assume fixed operator set

• Express capabilities of groups of devices
  – Support delivery to a user, not a device

• Metadata with shorter lifespans
  – Resource availability (e.g. availability of audio card) can change rapidly

• Expressing non-conventional device metadata
  – e.g. device orientation

• Support model of devices as containers