

The Device Independent Web



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http://www.w3.org/2005/10/india/MWI_d2/

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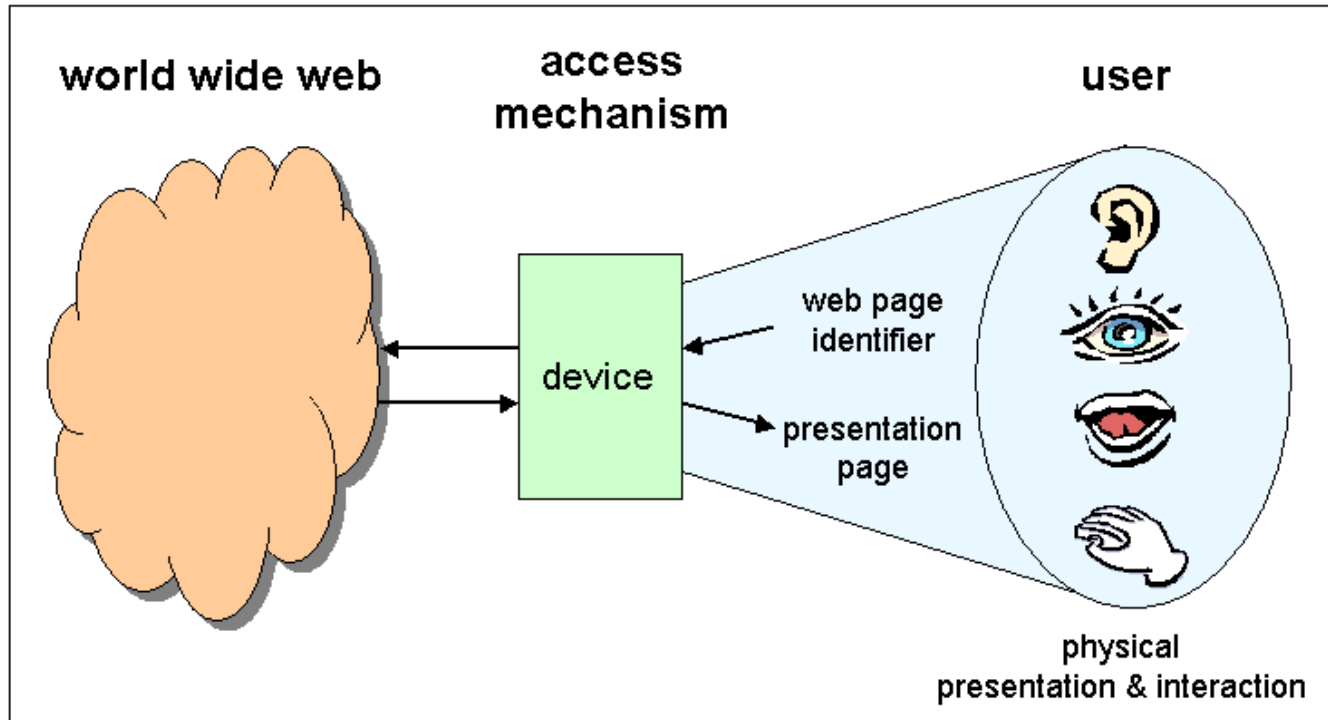
New Delhi, India, November 11 2005

OUTLINE

- User's dream
- Author's challenges and dream
- Device Independence Framework
- Standardized markup on devices
- New Authoring Techniques
- New Content Adaptation Techniques
- W3C Working Groups
- Conclusion

The User's Dream

The web should be accessible by anyone, anywhere, at anytime, anyhow



Problems for Content Authors



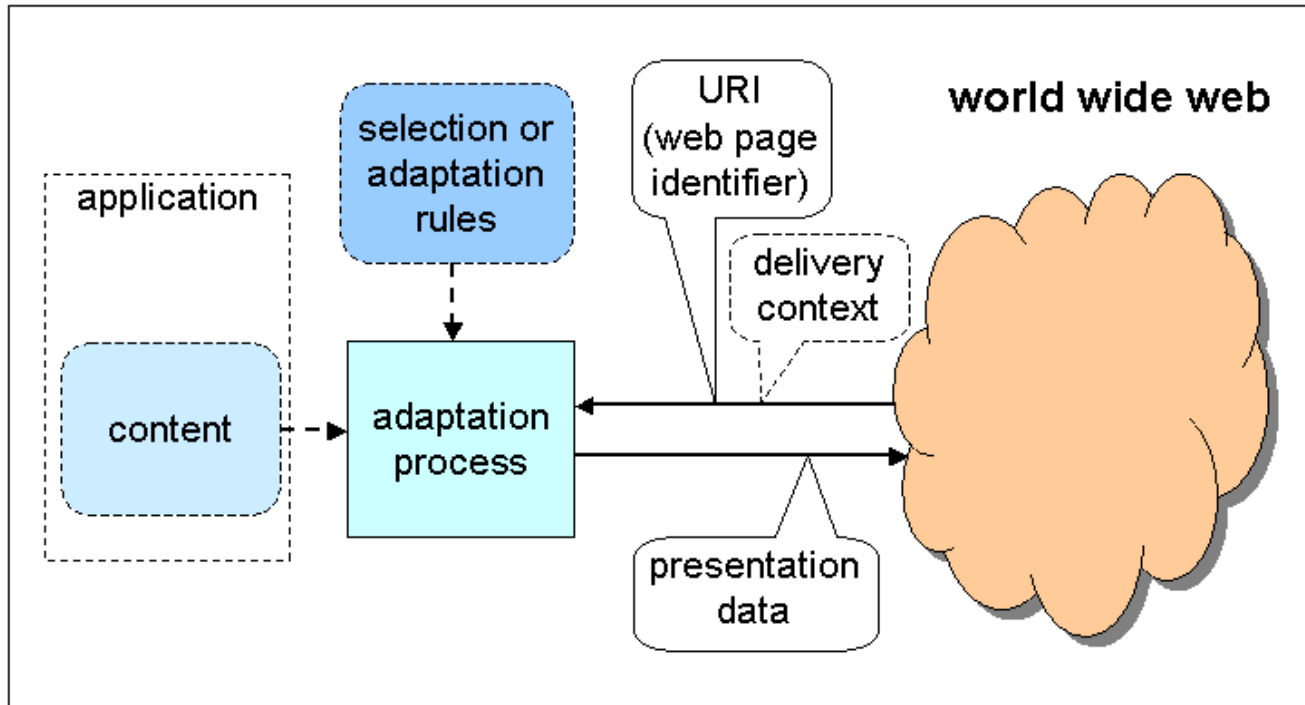
Mobile Christmas 2004



Source: RusselBeattie.com

Author's Dream

Write once, Render everywhere : avoid duplication of information

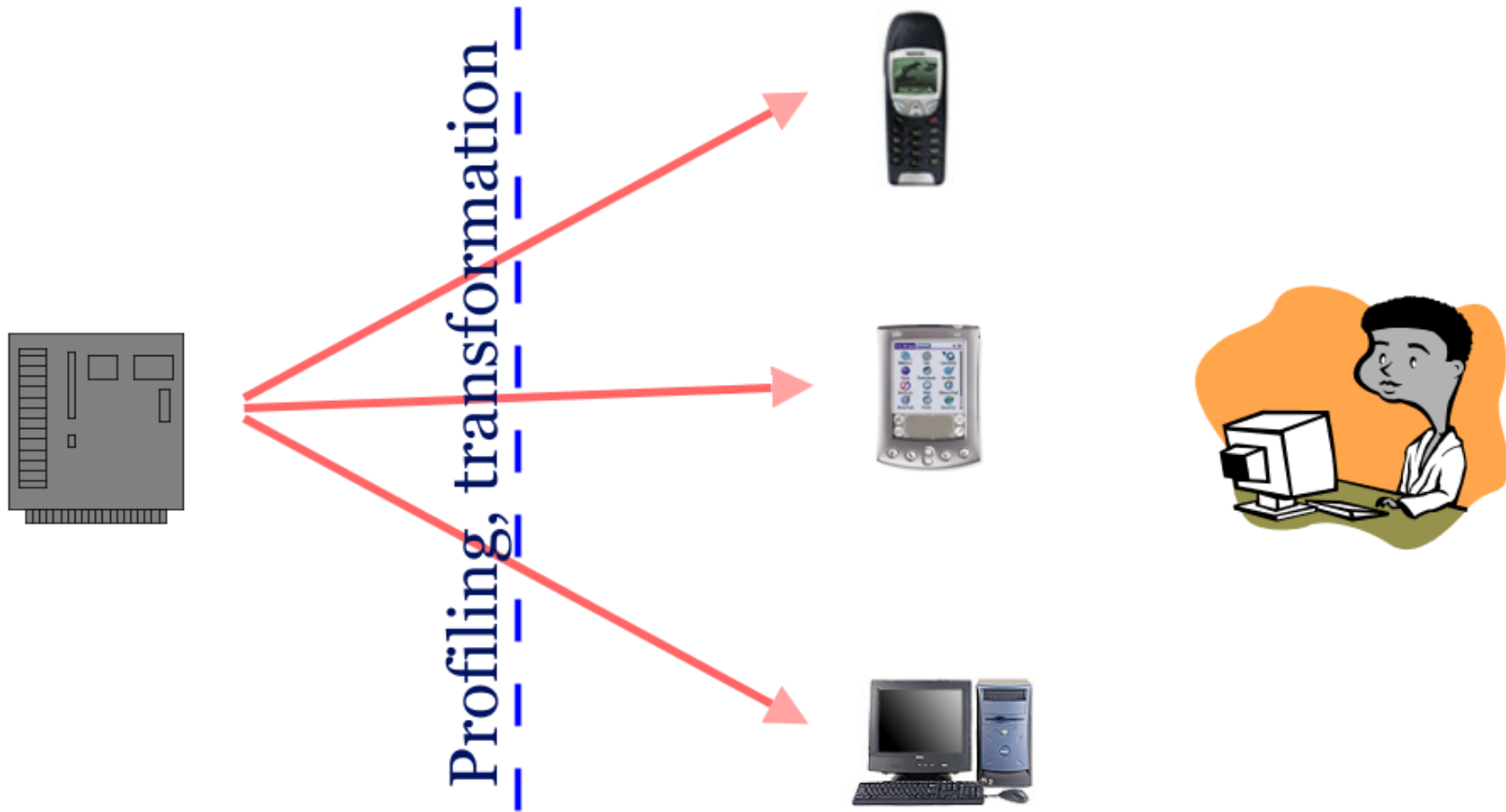


Challenges

- Taking Advantages of existing equipment
 - voice + gui (pda, phones, ...)
 - pen (tablet pc, pda, ...)
- One Web : Avoiding fragmentation of the Web
- Allowing everybody to access all ressources, independently of their disabilities, their equipment, their location, their environment, ...
 - Environment
 - Context
 - User Constraints and Preferences

What do you need to achieve Device Independence ?

1. Standardized markup for a wide range of devices
2. New authoring technologies for multi-channel/multi-device authoring
3. Authoring Guidelines and best practices
4. Improved content negotiation between UA and content servers to help adaptation



Markup Languages on User Agents

- What do we need ?
 - standardized markup languages that would run on a wide range of devices
- What do we have ? : modularization and profiling on W3C Specifications
 - XHTML / XHTML Basic / XHTML Print
 - SVG / SVG Mobile profiles / SVG Print
 - SMIL / SMIL Basic
 - CSS / CSS TV Profile / CSS Mobile Profile / CSS Print profile
 - XForms Basic
 - Smil 2.1
 - ...

Authoring Techniques

- What do authors need ?
 - reuse generic/cross devices informations/contents
 - rewrite platform-specific/dedicated parts
- What do we have ?
 - Since 1994: Separation of content and presentation using CSS
- What do we need now ?
 - content selection
 - multiple layout definition
 - Extended metadata for content adaptation
 - A profile with all needed modules for DI Authoring

Content Selection

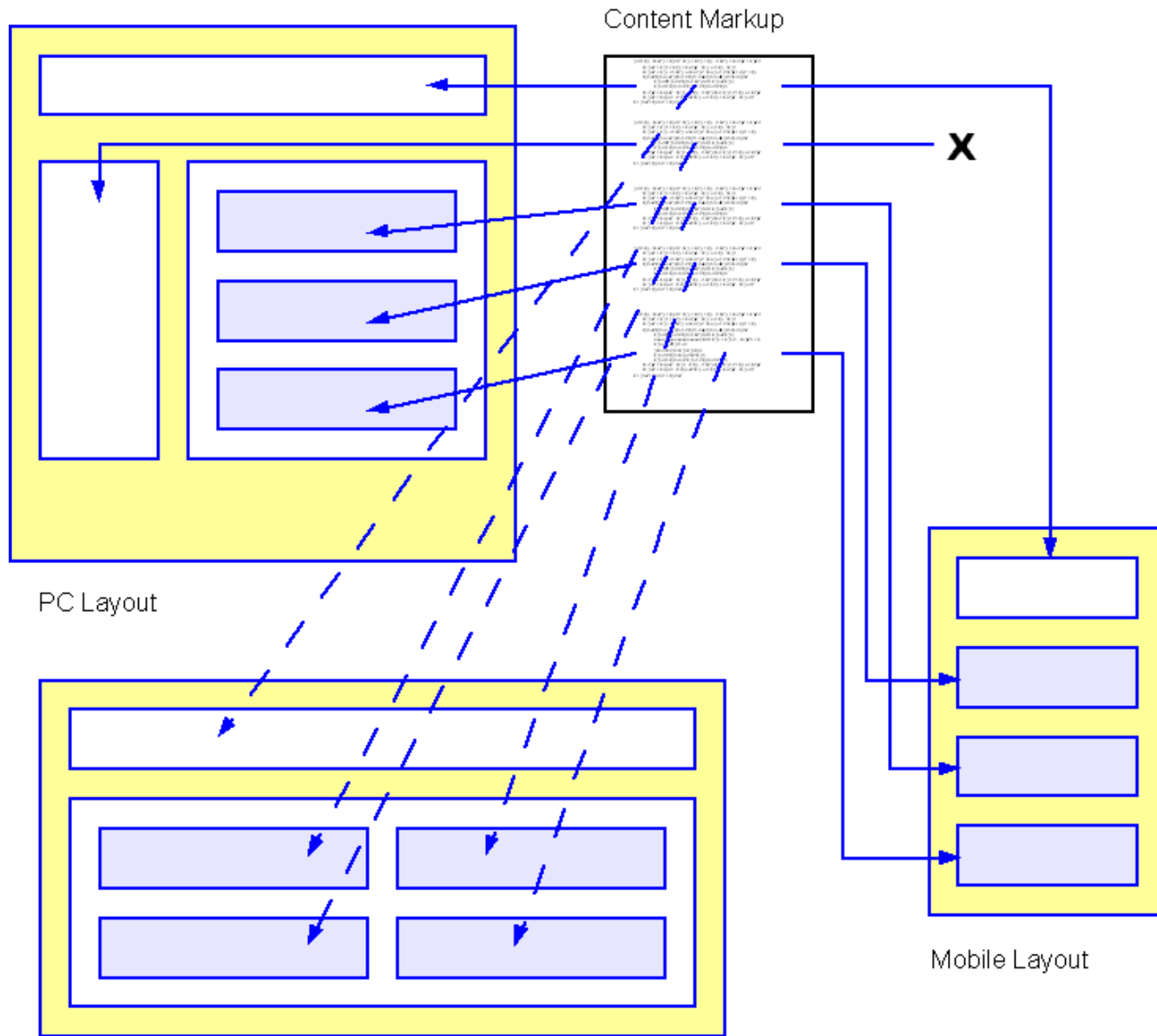
- Aim :
 - express alternate contents or resources
 - express conditions for delivery
- Technology : DSelect 1.0

```
<sel:select>
  <sel:when expr="di-cssmq-width('px') > 200">
    <object sel:selid="pic42" src="bigimage"/>
  </sel:when>
  <sel:when expr="di-cssmq-color() > 4">
    <object sel:selid="pic42" src="small_colour_image"/>
  </sel:when>
  <sel:otherwise>
    <p sel:selid="pic42">Many people had to be evacuated.</p>
  </sel:otherwise>
</sel:select>
```

- Status: Last Call

Layout

- Aim : give authors a macroscopic layout language



Wide Mobile Layout

Layout (2)

2 pieces needed :

- a language to describe the layout : CSS to define named area
 - CSS2 Box model
 - CSS3 advanced layout module
- a way to attach part of the content to area in the layout
 - directly through specific element or attributes

```
<div di:target="main">
  <p>...</p>
</div>
<div di:target="navbar">
  <nl>
    <li href="here">Here</li>
    <li href="there">There</li>
    <li href="everywhere">Everywhere</li>
  </nl>
</div>
```

- indirectly through CSS attributes

```
<div class="main">
  <p>...</p>
</div>
<div class="navbar">
  <nl>
    <li href="here">Here</li>
    <li href="there">There</li>
    <li href="everywhere">Everywhere</li>
  </nl>
</div>
```

and then in the css :

```
.main {target: main}
.navbar {target: navbar}
```

Metada for Content Adaptation

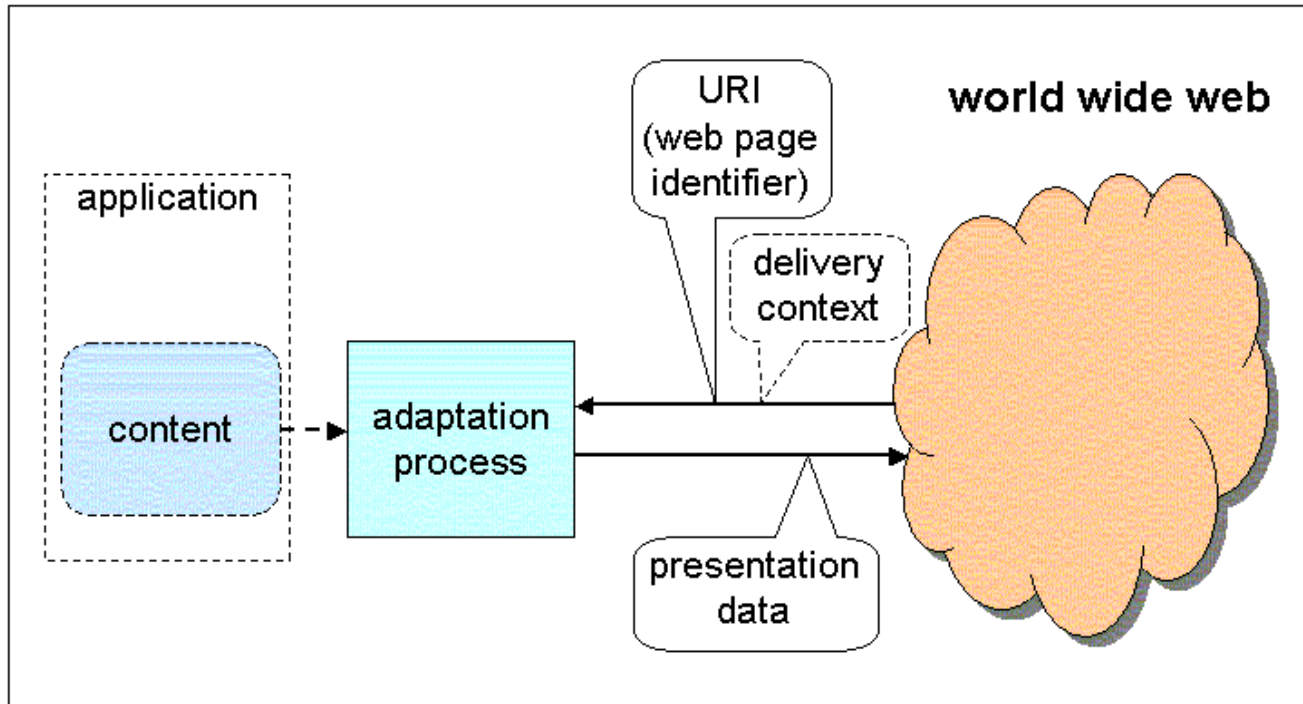
- Aim: provide a standardized way to describe content characteristics for adaptation
- Current Investigation
 - Defining the role of the content (and an ontology of roles)
 - copyright
 - navigation
 - ...
 - Capturing the relationship between pieces of content
 - explain
 - illustrate
 - alternative to
 - must accompany
- Status: Under investigation

Langage Profile for Device Independence

- A profile including all modules for DI authoring :
 - XHTML
 - CSS
 - XForms
 - Layout
 - DISelect
 - Metadata for Content Adaptation
- Status: First Public WD before end of the year

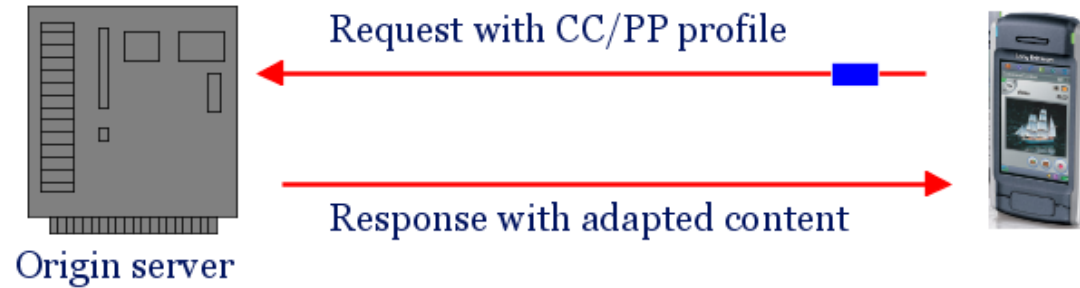
Content Adaptation

- What do we need ?
 - Information on the available content : New Authoring Techniques
 - Information on the delivery context:
 - User preferences and constraints
 - Device characteristics
 - Context and environment
- Described in a standardized way



Composite Capability/Preference Profiles (CC/PP)

- Generic framework for a UA to describe the device characteristics, context, and user's preferences / constraints



- 4 elements:
 - Structure: generic (RDF)
 - Vocabulary: application specific
 - Transport Protocol: partly application specific
 - Processing Rules: partly generic but using the vocabulary, and working through the protocol

CC/PP (2)

An instance : UAProf (OMA)

- Dedicated to convey phone characteristics
- A specific Vocabulary describing :
 - Hardware
 - Software
 - Network
 - Browser
 - WAP
 - Push
- A transport protocol : HTTP
 - with specific headers (x-wap-profile)
 - not providing inline the profile but a reference to it (URI)

A Repository of Devices information

- A publicly available distributed repository to retrieve device information
- Work items :
 - A vocabulary (essential properties involved in content adaptation)
 - A profile identification technique
 - A trust model
 - A set of tools to ensure validity and accuracy of data

Delivery Context Interface

- Dedicated for client-side adaptation
- Managing Static and Dynamic Properties
- Accessing and Updating properties through a DOM interfaces

Authoring Guidelines and Best Practices

- **Aim : Help the author**
 - to select the most appropriate technologies to achieve their goals
 - to use above technologies to achieve DI
- **Principles :**
 - High level rules
 - Illustrative examples with standardized markups
- **Evolving recommended technologies as they are available**
 - Definition of a baseline device

Anything else ?

- Training
- Marketing & Outreach

W3C Working Groups

- **Device Independence Working Group :**
 - New authoring technologies: DSelect, Layout, Metadata for Content adaptation, language profile
 - technologies for capturing and accessing the Delivery Context : CC/PP, DCI
- **Mobile Web Initiative - Best Practices Working Group**
 - Authoring guidelines and Best practices
 - MobileOK
- **Mobile Web Initiative - Device Description Working Group**
 - Device Information Repository
- **Mobile Web Initiative**
 - Training
 - Marketing & Outreach

Conclusion

Opportunities available now :

- **Join W3C and :**
 - Work in DIWG
 - Participate in MWI BPWG and MWI DDWG
- **Become a MWI Sponsor to drive the work :**
 - Defines priorities in the technical work done in MWI
 - Participate in the MWI marketing & outreach activity

MWI Sponsors



Next Outreach Events

- 15 November 2005 - London : *First Outreach Event : The Web on the Move*
- 13-16 February 2006 - Barcelona : 3GSM 2006 (Hall 2 - Booth G78)
- 22-26 May 2006, Edinburgh, UK : WWW2006

Further Information

Contact for MWI : *Philipp Hoschka* and *Stéphane Boyera*

Contact for DI Activity : *Stéphane Boyera* and *Max Froumentin*

MWI Home Page

Device Independence Activity Home Page

Device Description Working Group Home Page

Best Practice Working Group Home Page

MWI Sponsoring Information