

Access To Cloud Computing Challenge And Opportunity

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Overview

Challenge Accessible Speech Opportunity MashUp Mobile Conclusion

Challenge

Accessible

Speech

Opportunity

MashUp

Mobile

Conclusion



The Access Challenge



Web Apps: Advantages

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Hosted Web applications enable:

- Easy deployment
- Light-weight user interaction
- Ubiquitous access to data
- Easy upgrades

Today's access technologies do not fit this model.



The Impedance Mismatch

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Major shift in application deployment model

- Web Apps —The document is the interface
- Light-weight UI hosted in Web pages
- Current adaptive technologies assume desktop application model

App model shift requires shift in AT.



When Web Apps And Desktop Screen-readers Collide

- Adaptive technology installed on client workstation
- Depends on native APIs
 - ◆ All of the disadvantages,
 - ◆ And none of the advantages!



The Access Challenge

- Web promises anytime, anywhere access
- Equal access for users with special needs:
 - ◆ Email access at airport?
 - ◆ Edit/share information from a kiosk?



What Does Accessible Mean?



- Retain present level of access to functionality
- Increase reach by enabling wider access
- Wider access:
 - ◆ Bring within reach of more users
 - ◆ Enable access in more user contexts
 - ◆ Improve user effectiveness by enabling rapid task completion

Important to go beyond the status-quo



Building Blocks

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(Content, UA, AT)

- Together determine overall user experience
- Content: Capture adequate semantics
- UA: Degrade gracefully
- AT: Bridge the gap



Building Spoken Feedback



Building Speech Access

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- Identify *what* to speak
- Determine *how* to speak it
- Decide *when* to speak



What To Speak

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- Rich markup for Web content
- Separate content from presentation
- Structure content to reflect its intent
- Add content annotations to provide smart navigation
- Identify *role* of content particles
- Expose current *state* via DOM properties



How To Speak

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- Enable rich spoken feedback
- Provide Web developers direct access to speech layer
- Enable rich auditory presentations of content

Treat spoken output as a first-class citizen.



When To Speak

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Speech is silver, but silence is golden!

- Event handlers implement web interaction
- Eventing determines *when* things change
- Attach handlers that produce relevant output



The Access Opportunity



Web Application Model

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- Data resides on the network
- Interaction resides on the client
- Network operations to synchronize data
- Browser widgets to create UI

Shift away from monolithic applications



The Access Opportunity

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Separation of interaction from data:

- Opens up opportunities for custom clients
- Specialize user interaction to user's needs
- Multiple UIs can collaborate

One size no longer need fit everyone



New Adaptive Technologies

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New opportunities for AT :

- A new market for consumer applications
- Custom services tailored to end-user needs
- Task-driven access tools

This generation of AT will be user-driven.



Mashing It Up With Web APIs



Separation of content from interaction:

- Leads to light-weight Web APIs
- Atom/RSS based syndication
- AJAX APIs for Web services
- Examples: Google Maps, Google Calendar
- Web mashups are an automatic follow-on

What is the access equivalent of a mashup?



Essence Of A Mashup

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Syndicate data sources into a custom UI

- Add screen-enlargement (zooming)
- Augment Web UI with spoken output
- Overlay simplified skins
- Create custom aggregations of Web apps



Ubiquitous, Any Time Access



Mobile Access

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User Interfaces that match User Needs!

- Brings a new perspective to accessibility
- Opens up new vistas for users with special needs
- Profoundly impacts how we work and play



Conclusion



Conclusion

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- Web applications force separation of user-interface from core application
- Makes development of multiple user interfaces affordable
- Opens up new opportunities for meeting user needs



Watch Computing Take Off!

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