

BS 8878 and the Holistic Approaches to Web Accessibility

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About Me

Brian Kelly:

- UK Web Focus: national advisory post to UK HEIs
- Long-standing Web evangelist
- Based at UKOLN at the University of Bath
- Attended WAI launch in 1997
- Author of several papers on Web accessibility
- Speaker at TechShare & W4A conferences

UKOLN:

- A national centre of expertise in digital information management
- A JISC Innovation Support Centre

About This Talk

Contents:

- Web accessibility and WAI
- Awareness of limitations
- Towards a solution:
 - Holistic approaches
 - Achievable approaches
 - Contextual approaches
 - Embedded approaches
- Development elsewhere
- Application of holistic approaches
- Where are we now?
- Next steps

About WAI

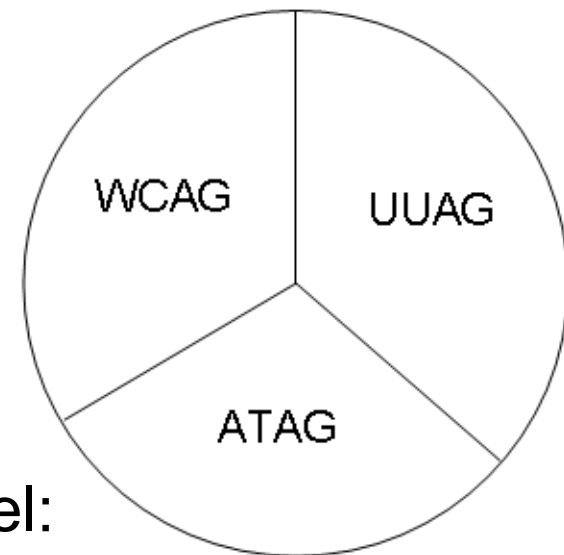
WAI has been successful in raising awareness of Web accessibility and providing guidelines to achieve this.

WAI guidelines are based on:

- WCAG (Web Content ...)
- ATAG (Authoring Tools ..)
- UAAG (User Agents ...)

The model is simple to grasp. But is it appropriate for the future? Does model:

- Reflect the diversity of users & user environments
- Reflect the diversity of Web usage
- Reflect real-world technical environment & developments
- Reflect real-world political & cultural environments



Limitations of the Model

This model:

- Requires all three components to be implemented in order for the WAI vision to be achieved
- Is of limited use to end users who have no control over browser or authoring tools developments
- Is confusing – as many think WCAG is WAI

How does this model address:

- Delays in full conformance? (We're still waiting for "*until user agents ...*" clause to be resolved)
- Real-world reluctance to deploy new software (issues of inertia, testing, costs, ...)
- Real world complexities (resources, users, ...)

Is there a plan B in case this model fails to ever take off?
Is it desirable to base legal requirements on an unproven theoretical framework?

WCAG 1.0 Limitations

Certain Priority 2 and 3 guidelines cause concerns:

11.1 Use W3C technologies when they are available and appropriate for a task ...

- Promotes own technologies
- Appears to ignore major improvements in accessibility of non-W3C formats

11.1 ... and use the latest versions when supported

- Goes against project management guidelines
- Logical absurdity: when XHTML 1 came out WAI AA HTML 4 compliant sites downgraded to A!

3.2 Create documents that validate to published formal grammars

- Dodgy HTML (
) can be rendered by browsers – this is an interoperability issue

Nitpicking?

“This is just nit-picking! WCAG is valuable – don’t knock it!”

WCAG is valuable, but we need to:

- Build a robust framework for the future
- Ensure clarity and avoid ambiguities to avoid different interpretations
- Reflect on experiences gained since 1999
- Avoid dangers of inappropriate case law being set

Nightmare Scenario

Case taken to court in UK.

Defence lawyers point out ambiguities & inconsistencies.
Case lost, resulting in WCAG’s relevance being diminished.

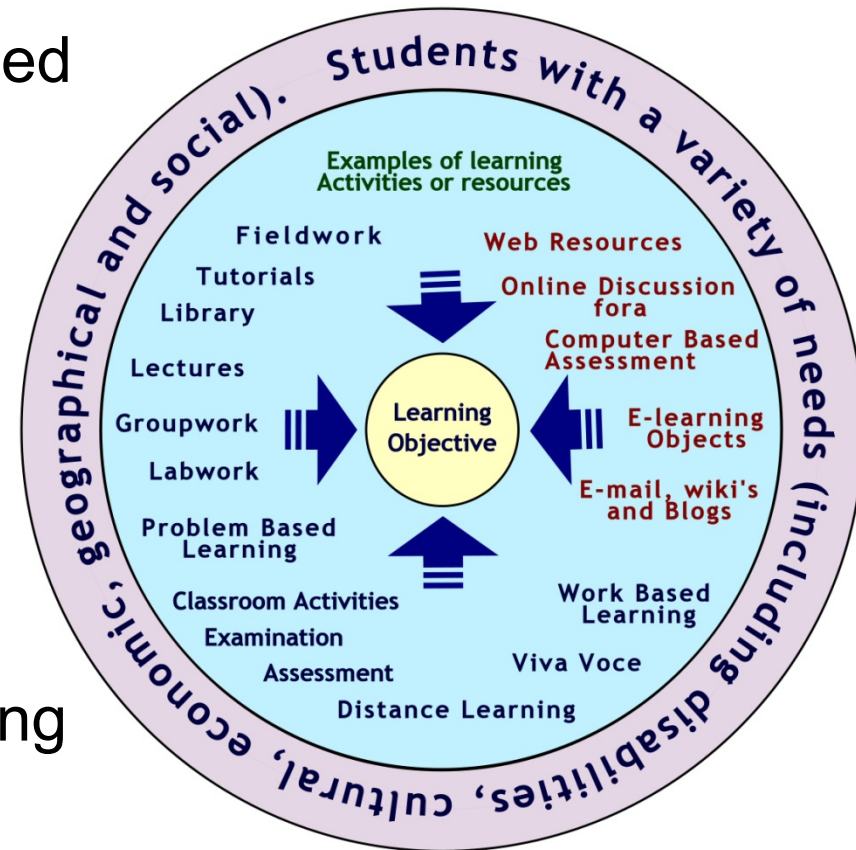


Holistic Web Accessibility

Kelly, Phipps & Swift¹ argued for a holistic framework for e-learning accessibility

This framework:

- Focusses on the needs of the learner
- Requires accessible *learning outcomes*, not necessarily e-learning resources



This approach reflects current UK emphasis on *blended learning* (rather than e-learning)

¹ *Developing A Holistic Approach For E-Learning Accessibility*, Canadian Journal of Learning and Technology, 2004, Vol. 30, Issue 3

Legal Issues

UK legislation requires organisations to take "*reasonable measures*" to ensure disabled people do not face unjustified discrimination.

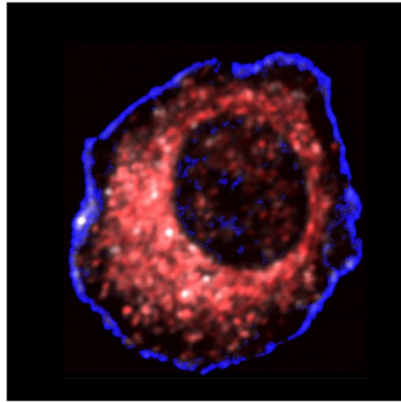
This approach:

- ☺ Is technology-neutral
- ☺ Is both forwards-looking and backwards-compatible
- ☺ Acknowledges differences across providers of services
- ☺ Doesn't differentiate between real-world and online accessibility (or between Web and other IT accessibility)
- ☺ Avoids change-control difficulties

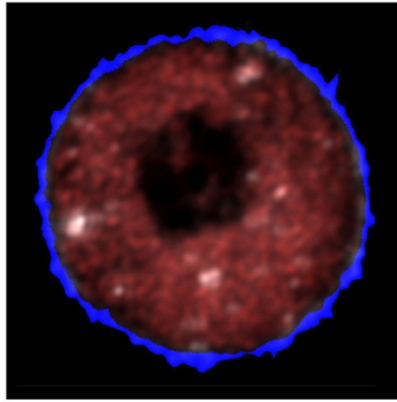
The approach outlined in this paper appears to fit in well with UK legislation

Universal Access? POUR?

Normal



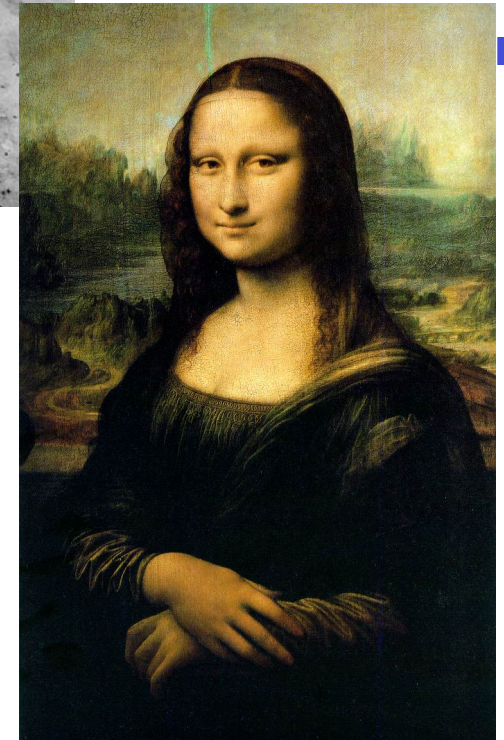
Cancer



Man against snow, Austrian Tirol 1974, reproduced with permission of the photographer: Professor Paul Hill



The Great Masturbator by Salvador Dali (1929)



Second Life: User Perspective

wheeling in second life



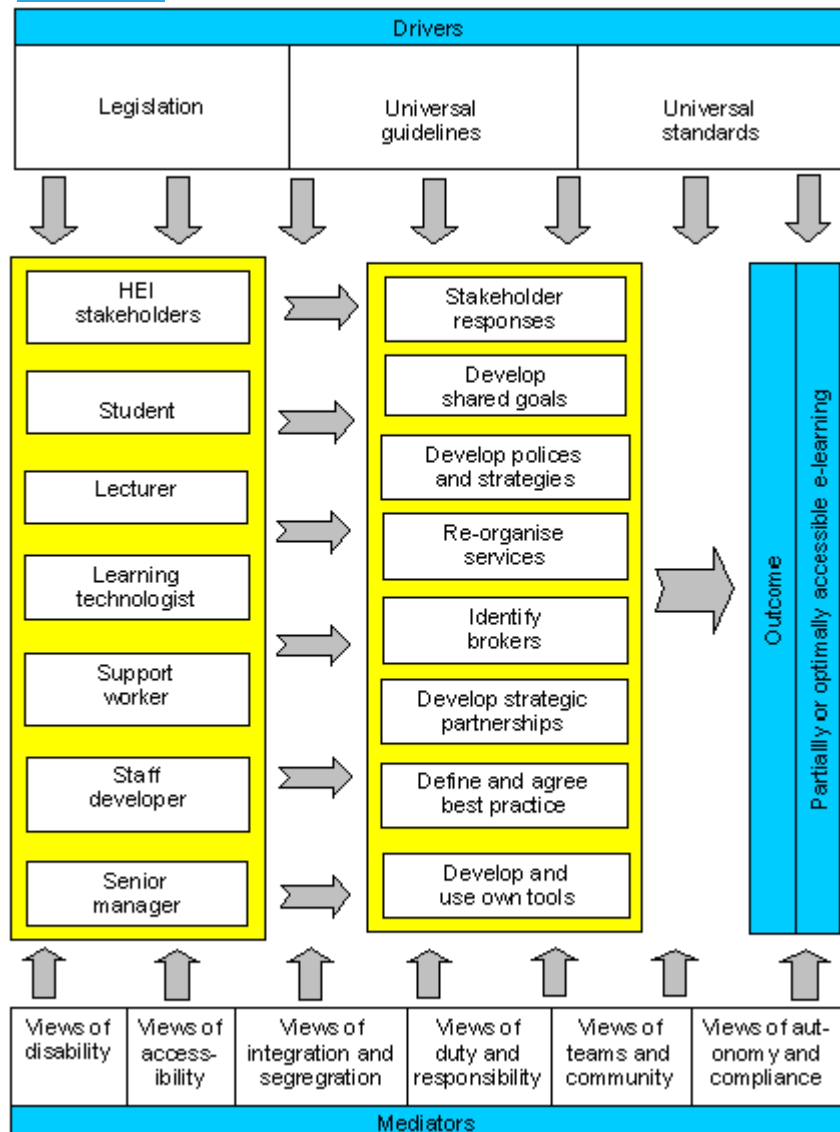
The danger is that organisations will ban SL as they feel it fails to comply with accessibility guidelines.

A video clip shows Judith, a user with cerebral palsy, using Second Life with a headwand.

“Do you think that this will be a really useful tool for people who are unable to get around, who have problems of mobility in real life?”

“Yes, because you can have friends without having to go out and physically find them”.

Stakeholder Model



Common approach:

- Focus on Web author
- Sometimes user involved
- Sometimes led by policy-makers

This approach:

- Often results in lack of sustainability
- Web accessibility regarded as 'techie'
- Not integrated with wider accessibility issues
- Not integrated with training, development, ...

There's a real need to integrate approaches to accessibility more closely with (diversity of) service providers

Accessibility 2.0

Need to build on WAI's successes, whilst articulating a more sophisticated approach. Accessibility 2.0:

- **User-focussed:** It's about satisfying user's needs
- **Rich set of stakeholders:** More than the author and the user
- **Always beta:** Accessibility is hard, so we're continually learning
- **Flexibility:** There's not a single solution for all use cases
- **Diversity:** There's also diversity in society's views on accessibility (e.g. widening participation, not universal accessibility)
- **Blended solutions:** Focus on 'accessibility' and not just 'Web accessibility'
- **Scalable:** Applicable for large nos. of resources



One Machine

1 billion **PC chips** on the internet
2 million **emails** per second
1 million **IM messages** per second
8 terrabytes per second **traffic**
65 billion **phone calls** per year
255 exabytes **magnetic storage**
1 million **voice queries** per hour
2 billion **location nodes** activated
600 billion **RFID tags** in use

**There is only One machine.
The web is its OS.
All screens look into the One.
No bits will live outside the web.
To share is to gain.
Let the One read it.
The One is us.**

Kevin Kelly →

Repositories – Case Study

Materials

Paper

[MS Word format] - [PDF format] - [XHTML] (Local copies)
[PDF format] (remote copy)

In addition an embedded version of the paper is included below (if your browser supports Flash). This is an embedded version of the **resource hosted on the Scribd repository service**.

Scribd

**Accessibility 2.0:
People, Policies and Processes**

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ABSTRACT
The work of the Web Accessibility Initiative (WAI) is described in a set of technical guidelines designed to maximise accessibility to digital resources. Further activities continue to focus on technical developments, with current discussions exploring the potential merits of use of Semantic Web and Web 2.0 approaches. In this paper we argue that the focus on technologies can be counter-productive. Rather than seeking to enhance accessibility through technical innovations, the authors argue that the priority should be for a user-focused approach, which embeds best practices through the development of achievable policies and processes and which includes all stakeholders in the process of maximising accessibility.

The paper reviews previous work in this area and summarises criticisms of WAI's approach. The paper further develops a tandem model which describes a pluralistic, as opposed to a universal, approach to Web accessibility, which encourages creativity and diversity in developing accessible services. Such diversity will need to reflect the context of usage, including the aims of a service (informational, educational, cultural, etc.), the users' and the services providers' environment.

The paper describes a stakeholder approach to embedding best practices, which recognises that organisations will encounter difficulties in developing sustainable approaches by addressing only the needs of the end user and the Web developer. The paper describes work which has informed the ideas in this paper and plans for further work, including an approach to advocacy and education which enters the "Accessibility 2.0" term to describe a renewed approach to accessibility, which builds on previous work but prioritises the importance of the user. The paper concludes by describing the implications of the ideas described in this paper for WAI and for accessibility practitioner stakeholders.

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Discussion on repositories list: ➡

*"Why PDFs of research papers?
What about accessibility?"*

*"Important battle is open access.
Let's not add extra complexities."*

My response:

Open access is important (and PDF is easy) but let's also:

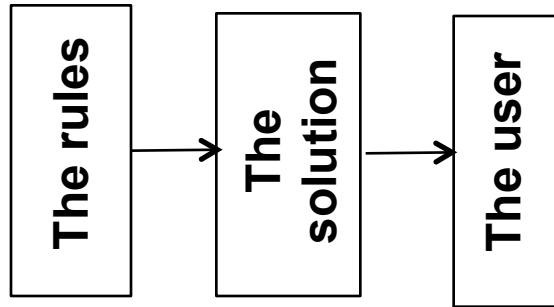
- Engage with various stakeholders (incl. publishers)
- Develop (holistic) policies
- Explore other options to enhance accessibility

And I found Scribd – a Web 2.0 services which creates MP3 from MS Word/PDF:

- Enhanced accessibility from MS Word master & Flash interface

Putting The User First

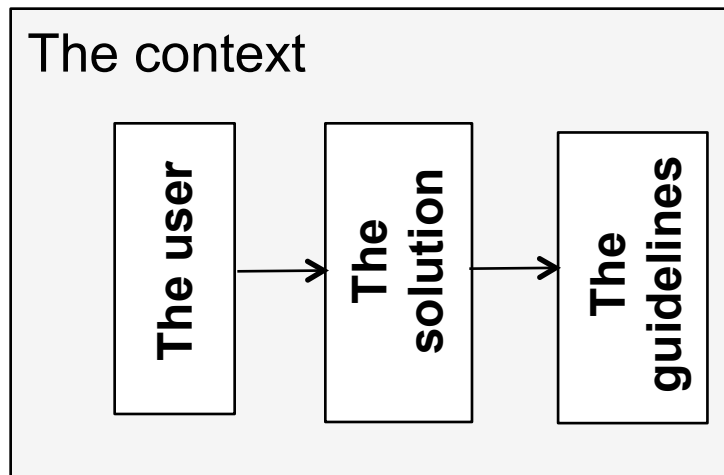
The way we were



Example

“UK Government requires all government Web sites to comply with WCAG AA” →

Where we should be



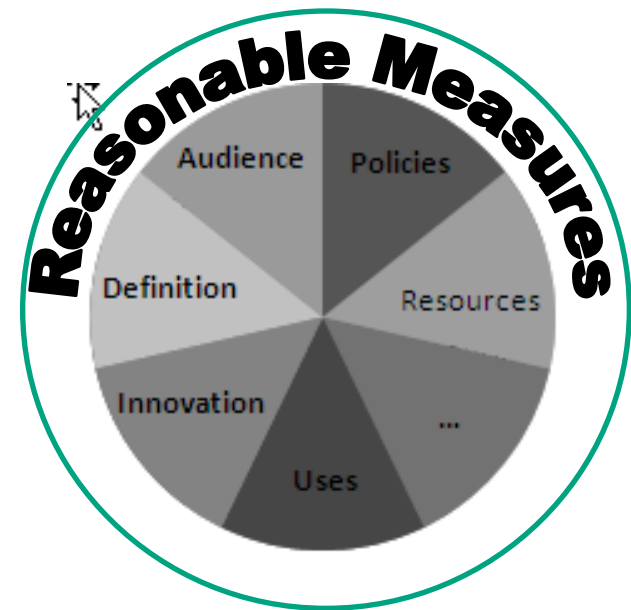
Example

- Involve user in design process
- Recognise the context
- Then seek to apply guidelines

Web Adaptability Framework

The framework embraces:

- The intended *use* of the service
- The intended *audience*
- The available *resources*
- Technical *innovations*
- Organisational *policies*
- *Definitions* of accessibility
- ...

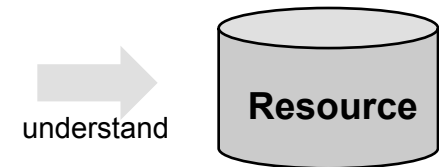


To avoid adaptability meaning doing whatever you fancy (e.g. IE-only sites) adaptation needs to be implemented in context of a legal framework, reasonable measures, expectations,...

A Grammatical Perspective

WAI approach:

- Accessibility a characteristic of resource
- WAI provides best practices for resource; creation of resource & processing of resource
- Accessibility apply to all (all resources must be universally accessible)
- No context:
 - Scope
 - Audience
 - Costs
 - ...

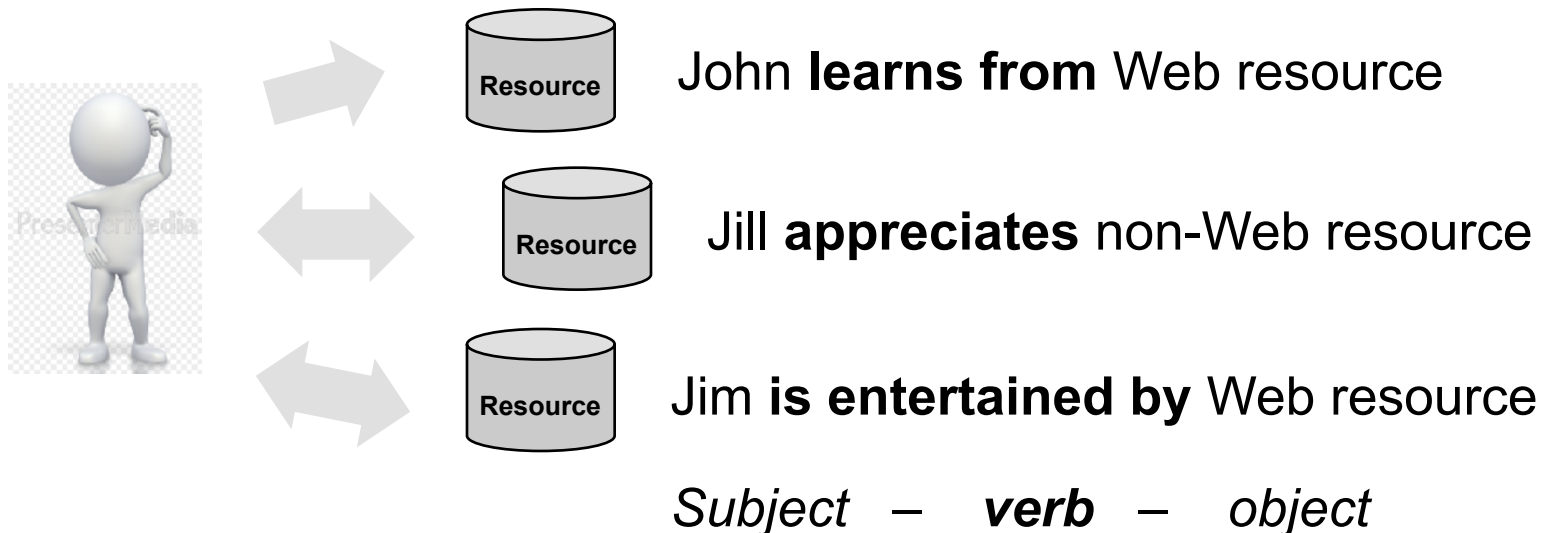


(All) People understand (all) **Web resources**
Subject – verb – object

A Grammatical Perspective

Holistic approach:

- Accessibility a characteristic of user's engagement
- Processes of engagement go beyond understanding
- Accessibility focusses on target user community
- Engagement can go beyond Web browser



Who's Using These Approaches? (1)

Public library example:

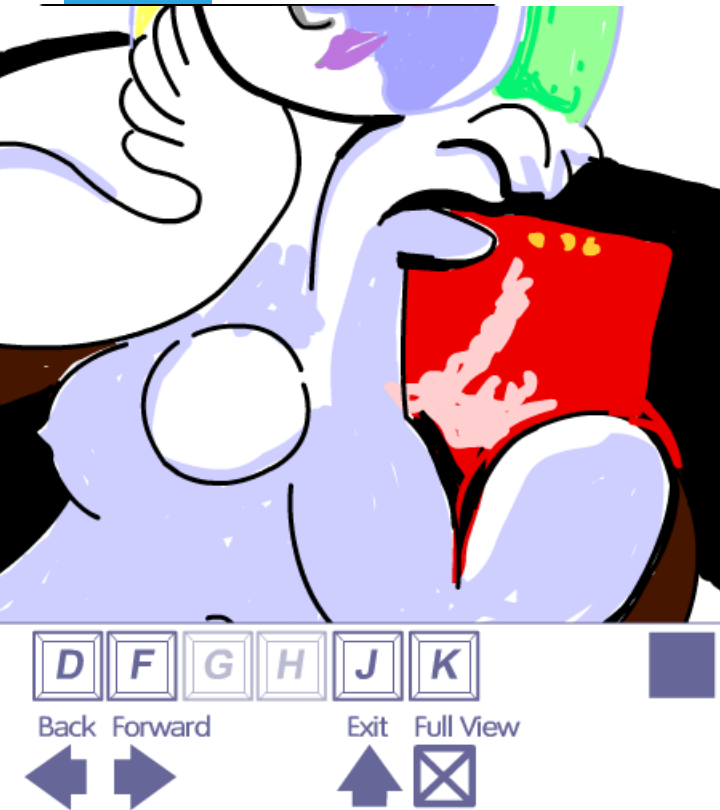
- Presentation at national Public Library event
- “And here’s a Flash-based game we’ve developed. Easy to do, and the kids love it”
- “What about accessibility?”
- “Oh, er. We’ll remove it before the new legislation becomes into force”

Blended approach:

- “What’s the purpose of the game?”
- “To keep kids amused for 10 mins, while parents get books”
- “How about building blocks or a bouncy castle as an alternative? This is an alternative approach to problem, which doesn’t focus on disabilities”



Who's Using These Approaches? (2a)



Pablo Picasso
Nude Woman in a Red Armchair
1932

Oil on Canvas 130cm x 97cm
© Succession Picasso/DACS 2002
Tate. Purchased 1953

On the right of the painting, Picasso plays with the resemblance between her bead necklace and the upholstery studs on the back of the chair.

Press either your SPACE BAR or the FLASHING BUTTON to add the beads and upholstery studs one by one.

He doesn't paint her shoulder, so the necklace hovers in mid air in front of the upholstery. However, in the same way that the studs outline the shape of the chair, the necklace indicates the lie of her shoulder and we read its outline in our minds.

Tate's i-Map project:
early example of an award-winning approach to providing access to paintings for visual impaired users

- It used Flash ..!
- ... to allow users to 'participate' in the creation of the painting

Note this work was described in an award-winning paper on "*Implementing A Holistic Approach To E-Learning Accessibility*" paper by Kelly, Phipps and Howell (2005) ➡

Who's Using These Approaches? (2b)

Raised Images

You can access the raised images from this page in Adobe Portable Document (PDF) format.
[file containing all of the raised images.](#)

Alternatively, you can borrow a set of raised images from Tate. To do so, please contact Tate M

Guide to Raised Images

Pages are numbered in Braille. The
 The exception is drawings that are in
 format. Here, the image should be

Primitivism

Picasso 'Nude with Raised Arms'

Image 1 page 1

Image 2 page 2

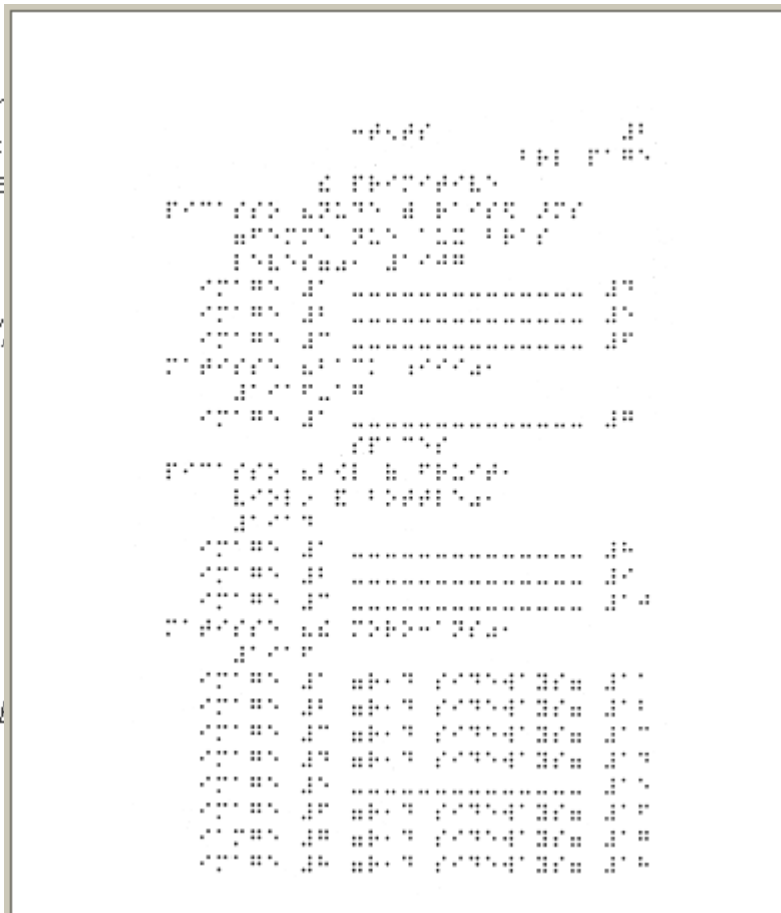
Image 3 page 3

Matisse 'Back III', 1916-17

Image 1 page 4

Spaces

Picasso 'Bowl of Fruit, Violin and Lute'



I-Map project
 also used a
 blended
 approach,
 through
 provision of
 access to raised
 images

Who's Using These Approaches? (3)

An Introduction to Bantock House

Welcome to Bantock House BSL signed information. Please be patient as it may take a few seconds for the video to load.



Next video>>

These videos were produced for Wolverhampton Arts and Museums by Zebra Uno.

Wolverhampton Art Gallery are using a user-focused development approach to providing access to information about Bantock House

- Yes, it uses YouTube
- Deaf users involved in design processes (e.g. benefits of signers in context of museum)



Other Developments

WCAG 2.0:

- Published in Dec 2008
- Addressed flaws in WCAG 2.0 – but still needs to be contextualised

Other accessibility standardisation work:

- Standards & best practices for various formats e.g. PDFs; MS Office; ...

AccessForAll and MARC21:

- Metadata frameworks for defining & describing resource accessibility in Web and Library contexts

Limitations of Our Work

Our holistic approach to Web accessibility:

- Developed by researchers and practitioners
- High visibility amongst accessibility researchers

But:

- Little engagement with standardisation bodies
- Limited engagement with policy makers or accessibility organisations: Accessibility Summits in 2004 & 2006 → →

“the government is following highly specific [WCAG] points. Some work, some don't,” said Kevin Carey, Vice-Chair of the RNIB & director of digital inclusion charity HumanITy.”

Difficulties in embedding approaches in organisation's policies due to lack of visibility to policy-makers (who may only have heard of WCAG)

About BS 8878

BS 8878 Web Accessibility Code of Practice:

- Published in December 2010
- Pragmatic & user-focussed: aims to escape from being “*caught in a rut of technical guidelines*”

Key points from BS 8878 Webinar:

- Covers ‘Web products’ and not just Web sites (including Flash; mobile; Web email; ...).
- A code of practice which gives guidance (could, should, ...) rather than detailed technical specs.
- Possible to comply if recommendations implemented (e.g. document processes & policies).
- Applicable to all types of organisations.
- A more strategic & high level approach than WCAG

BS 8878 & Holistic Approach

BS 8878 is based on 16 steps:

- 1,2 Define purpose and audience
- 3 Analyse needs of target audience
- 4 Note any platform or technology preferences
- 5,6 Define relationship product will have with its target audience & user goals and tasks
- 7 Consider the degree of user experience the web product will aim to provide
- 8 Consider inclusive design & user-personalised approaches to accessibility



BS 8878 & Holistic Approach

- 9 Choose the delivery platform to support
- 10 Choose the target browsers, operating systems & assistive technologies to support
- 11 Choose whether to create or procure web product.
- 12 Define the web technologies to be used in the web product
- 13 Use Web guidelines to direct accessibility web production } e.g. WCAG
- 14 Assure the web products accessibility through production (i.e. at all stages)
- 15 Communicate the web product's accessibility decisions at launch
- 16 Plan to assure accessibility in all post-launch updates to the product



Holistic Accessibility (1)

In W4A 2010 paper we gave this summary:

- ***Reasonable Measures:*** *Rather than regarding WCAG conformance as a mandatory requirement, WCAG should be regarded as guidelines, which may be ignored if their use conflicts with other requirements – so long as steps are taken to address the potential exclusion that may result.*
- ***Justification of Costs:*** *‘Reasonable measures’ should include identification of costs of conforming with accessibility guidelines. ...*
- ***Provision of Alternatives:*** *If it is too costly or difficult to conform with accessibility guidelines, the provision of alternatives that are as equivalent as possible may be an appropriate solution.*

Holistic Accessibility (2 of 3)

- ***Just-in-time Accessibility:*** A requirement that all resources conform to WCAG is a 'just-in-case' solution. This ... but may be inappropriate if resources are expected to be little used.
- ***Advocacy, Education and Training:*** Those involved in supporting content providers and other stakeholders should ensure that education and training on best practices is provided, together with advocacy on the needs for such best practices.
- ***Sharing and Learning:*** With an emphasis on a community-based approach to the development of appropriate solutions it is important that best practices are widely shared.



Holistic Accessibility (3 of 3)

- ***Engagement of Users with Disabilities:*** *The need to ensure that disabled people are included in the design and development of Web solutions must be emphasised.*
- ***Focus on ‘Accessibility’ rather than ‘Web Accessibility’:*** *The benefits of Web/IT solutions to real world accessibility difficulties needs to be considered. As described above, amplified events can address difficulties in travel and access, even though the technologies used may not conform with accessibility guidelines.*

But What Do I Do?

Need for case studies to show appropriate approaches

Case Study 1: Institutional Repositories

Purpose: Enhance access to research papers to research community

Challenge: Papers are user-generated content typically using publishers template.

Appropriate solutions: These could include:

- ✓ Education for researchers on why and how
- ✓ Discussions with publishers on enhancements to templates (ALT text for logos; linearisable columns; ..)
- ✓ Development of accessible cover sheets
- ✓ Systematic automated monitoring of trends
- ✓ “Problems with this resources” button: to provide feedback
- ✓ ...

But What Do I Do?

Case Study 2: Amplified Events

Purpose: Enhance access to conferences for remote and time-shifted audiences

Challenge: Expense of captioning. Use of freely available 3rd party tools (e.g. Twitter). Privacy.

Appropriate solutions: These could include:

- ✓ Purpose is to enhance accessibility of real world event
- ✓ Crowd-sourcing captions using Twitter and iTitle
- ✓ Automated speech-to-text possible in the future
- ✓ Policies on openness
- ✓ “Quiet zone” for those who don’t want to be videoed
- ✓ Development of netiquette on what is private and only accessible to local audience
- ✓ ...



Conclusions

We seem to have:

- An understanding of the limitations of the one-size-fits-all approach
- Close harmony between researchers and policy makers and standards developers
- An opportunity to promote such best practices

Challenges:

- How to proceed next
- How to develop appropriate policies
- How to commission appropriate solutions

Questions

Any questions or comments?