Challenges with assistive technology compatibility in universal design

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Background: identifying the problem

- NR has been doing user investigations in the field in a number of projects.
  - With users with various types of abilities, types and versions of ICT equipment and ATs
- Encountered technical accessibility problems even for web pages following the WCAG guidelines. ICT solution worked with one type of screen reader but not with other types.
- Teamed up with AT-expert (V2A)

Background: the VHL project

Collaboration between

- Norsk Regnesentral (NR)
- Vision2Access (V2A)

Funding from

- UNIKT 2013, The Delta Centre
- VHL2 is a follow up in 2014, with funding from UNIKT and NAV

Universal design

The design of products, environments, programmes and services to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design. "**Universal design" shall not exclude assistive devices for particular groups of persons with disabilities where this is needed.** (FN 2006)

From the UN Convention on the Rights of Persons with Disabilities.

The main elements of universal design

- A) Technical accessibility
  - HTML, CSS validation
  - WCAG conformance – including compatibility with assistive technologies
- B) Usability for all users
  - Usability is achieved through user cantered design (UCD)
- Technical accessibility is a precondition for, but not necessarily sufficient for universal design of ICT.

Focus of the VHL project: Web compatibility with assistive technology

- Assistive devices or assistive technology (AT):
  - products, devices, and equipment created for personal use, used to maintain, increase, or improve the sensory, physical or cognitive capabilities of individuals with disabilities.
- Compatibility is required by the W3C WCAG 2.0
  - Guideline 4.1: Maximize compatibility with current and future user agents, including assistive technologies.

AT examples

- Screen readers
- Screen magnifiers
- Mouse, pedals
- On screen keyboard
- Eye tracking
- Mouth Control
- Voice recognition

Web pages need to be compatible with screen readers, e.g.

- Jaws
- Window Eyes
- Supernova
- Zoomtext
- NVDA*
- VoiceOver (iOS)
- Talkback (Android)

Compatibility – a challenge

Screen readers

- Cobra
- Jaws
- Window Eyes
- Supernova
- NVDA
- Zoomtext
- VoiceOver (IOS)
- Tackback (Android)

Web browsers

- Internett Explorer
- Google Chrome
- Firefox
- Safari
- Etc.

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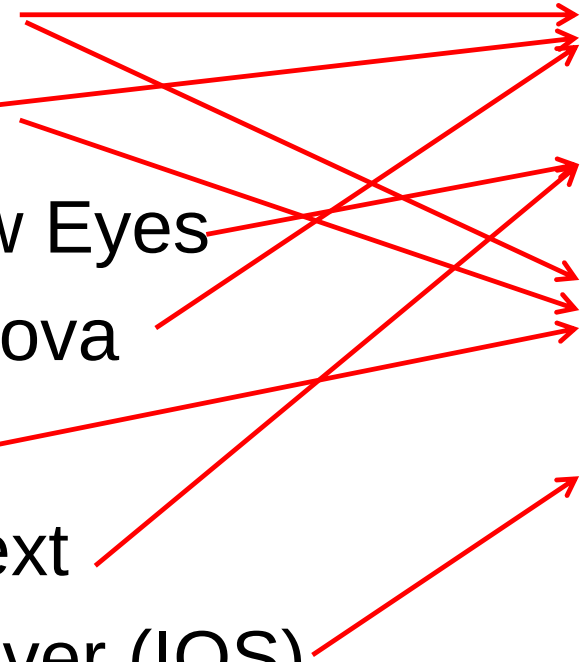

A number of versions and possible combinations!

In the VHL project we have

- Conducted focus group meetings and interviews with stakeholders (AT-users, developers, welfare system, AT-supplier)
- Written an online guide on technical accessibility testing
  - www.iktforalle.no (in Norwegian)
- Developed an online service prototype with two screen readers that can be used for testing web pages (NVDA and Supernova)

Results from investigations

- Developers need structured and up-to-date information about what ATs they need to take into account (what is required by the legislation?)
- Need advice on backward compatibility (i.e. how many versions of screen readers (and browsers)
- Detailed procedures on efficient testing for AT compatibility.

Ideas for tools and assistance

- Lab facilities where developers can try to use and test various types of ATs
  - In real life
  - Online
- Testing service, where you can have your web-site tested with various type of ATs
- On a higher societal level there is a need to work with requirements towards AT- suppliers and with organising training in AT usage

Demo

Thank you for your attention!

Comments?

Questions?

Collaboration?

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Norsk Regnesentral

www.nr.no

(Norwegian Computing Center)