



ODF Accessibility & UNIX Accessibility - a User's Perspective

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Agenda

- ODF Accessibility
 - > What is ODF?
 - > Why do we care?
 - > ODF content accessibility
 - > ODF application accessibility (in Windows - demos)
- UNIX Accessibility
 - > What: Console & graphical GNOME desktop
 - > Where: Solaris, GNU/Linux [Ubuntu, Fedora]
 - > UNIX Accessibility in action (lots of demos)
 - > ODF application accessibility on UNIX
- ODF summary: what is done; what work remains

What is ODF?

- Standard file format for office documents, encoded in XML
 - > Word processing files
 - > Spreadsheets
 - > Presentations
 - > Mathematical equations
 - > Complex vector graphics
- Lots of applications are available which support ODF
- ODF is heavily based on W3C specs., which have gone through an accessibility evaluation in the WAI

Applications Supporting ODF (from <http://wikipedia.org>)

- > Apps supporting text documents:
 - > 11 apps, including AbiWord, IBM Workplace, KOffice, OpenOffice.org, StarOffice, Writely
- > Apps supporting spreadsheet documents:
 - > 6 apps, including Gnumeric, IBM Workplace, KSpread, OpenOffice.org, StarOffice
- > Apps supporting presentation documents
 - > 5 apps, including IBM Workplace, KPresenter, OpenOffice.org, StarOffice
- > Also search tools, filters, converters, etc.

Why are folks adopting ODF?

- To ensure perpetual access to documents they author
 - > Governments, Libraries, Archivists, etc.
 - > Pain of Word*Star to WordPerfect to MS-Word 1.x to MS-Word 9x to MS-Word 200x
- To save money
 - > Mostly OpenOffice.org deployments, in U.S. but more in Europe and elsewhere
- To expand operating system deployment options

Where is ODF being adopted?

- 60,000 desktops in the Executive Branch of Massachusetts gov't starting in 2007
- 80,000 in Extremadura in Spain
- 80,000 in the French Gendarmerie
- 80,000 in the French Tax Agency by end of 2006
- 14,000 desktops in Brazil's post office, growing to 32,000 nationwide

ODF adoption continued...

- Thousands of desktops in the City of Bristol, UK (8th largest city in the UK)
- Belgian Ministry of Justice – 400 now, 4,000 by year end
- 5,000 desktops in Singapore Ministry of Defence; 20,000 by March 2006
- Portuguese Ministry of Education: 15,000 PCs in 1,000 schools

ODF adoption continued...

- All 5,500 branches of Brazilian Banco do Brasil
- 4,500 desktops in Banca Popolare di Milano
- 7,700 desktops at LVM Insurance in Munster, Germany
- 3,500 desktops at Health First in Brevard County, Florida

ODF adoption continued...

- U.S. Library of Congress
- City of Austin, Texas
- Irish Parliament
- Swedish Police dept.
- Municipality of Sarpsborg, Norway
- Postal Service of South Korea
- City of Munich, Germany
- City of Mannheim, Germany
- City of Schwäbisch Hall, Germany

ODF Application Accessibility: Windows

- Today, the apps that run in Windows:
 - > Are at or nearly at 100% keyboard navigable
 - > Support themes for minor vision impairments
 - > Work with StickyKeys, MouseKeys, etc.
 - > Work OK with on-screen keyboards, head-mouse
 - > Aren't supported well by screen magnification
 - > Aren't supported well by screen readers
 - > Aren't supported well by speech control
 - > Aren't supported well by tools to aid those with cognitive impairments

ODF Application Accessibility: UNIX

- Today, two apps that run in UNIX:
 - > Are at or nearly at 100% keyboard navigable
 - > Support themes for minor vision impairments
 - > Work with StickyKeys, MouseKeys, etc.
 - > Are ***incredible*** with on-screen keyboard, single-switch, and head-mouse
 - > Work OK with the screen magnification
 - > Work OK with the screen reader
- Today on UNIX, there aren't options for:
 - > Speech control
 - > Tools to aid those with cognitive impairments

ODF Application Accessibility: Mac

- Today, one app runs on Macintosh:
 - > Is at or nearly at 100% keyboard navigable
 - > Works with StickyKeys, MouseKeys, etc.
 - > Should work with on-screen keyboard, single-switch, and head-mouse
 - > Should work with screen magnification
 - > Doesn't work with the screen reader
 - > Isn't supported well by speech control
 - > Isn't supported well by tools to aid those with cognitive impairments
- Today on Macintosh, we don't have:
 - > Themes for minor vision impairments

How to Improve ODF Accessibility

- Finish file format review, improvements
- Microsoft could support ODF
- Corel WordPerfect could support ODF
- Window AT vendors could support ODF applications
- Creation/improvement of AT tools in UNIX, Macintosh

ODF Accessibility Work Underway

- File format review, improvements (ODF v1.1)
- IBM commitment: IBM Workplace accessible in Windows by 2007
- Ongoing work with Windows AT vendors and ODF
- Multiple ODF “add-in”/plug-ins to MS-Office
- Orca open source, scripting screen reader and screen magnifier for UNIX
- ODF<->DAISY translator in development

ODF Accessibility Timeline

- | | |
|------|--|
| 1997 | W3C Web Accessibility Initiative begun |
| 2000 | Began StarOffice/OpenOffice.org accessibility |
| 2001 | Section 508 amendment regulations go into effect |
| 2004 | Open source AT ships supporting SO/OOo |
| 2005 | Massachusetts ETRM specifying ODF published
OASIS ODF 1.0 specification published |
| 2006 | OASIS ODF accessibility subcommittee formed
OASIS ODF 1.1 specification published |
| 2007 | IBM to ship Workplace with Windows accessibility support |

ODF Application Accessibility

- StarOffice 8 / OpenOffice.org 2.0
 - > Excellent keyboard navigation
 - > Excellent theme support
 - > Explicit support of accessibility architecture via Java Accessibility API & Java Access Bridge (not well supported by Windows AT)

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StarOffice 8 / OpenOffice.org 2.0

Theming & Key-nav in Windows

ODF “add-in” to MS-Office

- One of several efforts at extending MS-Office to read/write ODF
- Sun engineering prototype:
 - > Hooks into existing Open/Save/Save-As dialogs
 - > Uses a copy of StarOffice installed on the system to do conversion
 - > Final version may be different (e.g. server-based conversion)
- Works perfectly with Windows AT

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ODF “add-in” to MS-Office prototype

JAWS & Dragon Naturally Speaking

UNIX Accessibility – What is it?

- Console access
 - > Access to the text-only environment (DOS-like)
 - > Multiple screen readers (screader, yasr, etc.)
 - > Excellent Braille support (BRLTTY)
- Graphical desktop
 - > There are multiple “graphical desktops” available for UNIX
 - > The GNOME desktop today is the accessible one; KDE coming soon; CDE likely never
 - > Multiple readers/magnifiers
 - > Growing ecosystem of other AT, accessibility apps

UNIX Accessibility – Where is it?

- Console access increasingly available everywhere
 - > Some places ship it out of the box: Fedora, Ubuntu
 - > Other places you have to download it
 - > Others will ship it out of the box: Solaris
- Graphical access in GNOME, increasingly available
 - > Part of the formal “GNOME desktop”
 - > AT ships in Solaris 10, more in Solaris 11
 - > AT ships in Ubuntu, Fedora
 - > AT expected soon in RedHat Enterprise Linux

Sun/GNOME Accessibility Architecture Adoption

- Core part of GNOME platform
- KDE/Qt to adopt it in version 4.0
- Adobe Reader 7 for Linux supports it
- Free Standards Group Accessibility Working Group to base accessibility standard around this architecture (members include Sun, IBM, and Adobe)
 - > see <http://www.a11y.org>

Open Source/UNIX Accessibility Timeline

- 1994 AccessX moves into X on SunOS, DEC UNIX
- 1997-8 Built javax.accessibility.* in Swing 
- 1998 Section 508 amendment signed into law
- 2000 Began GNOME, StarOffice, Mozilla accessibility 
- 2001 Section 508 amendment regulations go into effect
- 2003 GNOME 2.4 developer release with AT included
Free Standards Group Accessibility workgroup starts
- 2005 Solaris 10 ships with accessibility support, AT
- 2006 Ubuntu Linux 6.10 ships with accessibility, AT

Accessible Desktop - UNIX today

- General Accessibility
 - > Keyboard navigation
 - > Theming
 - > Screen reader / Screen Magnifier
 - > On-screen keyboard
 - > Alternative text entry
- Key Applications
 - > StarOffice 8 / OpenOffice.org 2.0
 - > Adobe Reader 7

Basic Desktop UNIX Accessibility

- For people with mild physical disabilities:
 - > Full keyboard accessibility of the desktop (no mouse needed)
- For people with more significant physical disabilities:
 - > Keyboard caplet with a variety of settings for a variety of needs (also known as *AccessX*)
- For people with mild to medium visual impairments:
 - > Theming with a variety of themes (including large print, and high & low contrast themes)

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GNOME

the UNIX desktop

Assistive Technology for the Blind

- Orca – Open Source, Scripting Screen Reader project led by Sun
 - > Each application and supporting graphical toolkit typically has its own unique user interaction model
- Scripting + Accessibility Architecture = Compelling and efficient access
 - > Custom access to user interaction model
 - > Per toolkit, per application, per window, etc.
 - > “Sub-scripting” provides relatively fast development cycle

How Are We Doing Orca?

- Original prototype created by an engineer who is blind
 - > Entirely in the open source community (GNOME)
- User-Centered Design
 - > Use of Alan Cooper's "Personas" concept
- Orca-Advisors mailing list
 - > Speech, Braille, & magnification users of varying capabilities and backgrounds

Who is Doing Orca?

- Overall project, system design and architecture led by Willie Walker
 - > 16 years experience in UNIX accessibility
- User experience and testing led by Mike Pedersen
 - > Ran the JAWS script writing department
 - > Experience with several screen readers
- Open source collaboration, including:
 - > IBM, Google, Novell, BAUM, Brailcom, ONCE

Orca Status

- Version 1.0 shipped in September
- Good access to the base desktop
- Basic access StarOffice/OpenOffice.org, Evolution, early access to the web via Firefox
- Well-connected with the toolkit and app development teams
- Part of GNOME; next release will be with GNOME 2.18 in March '07

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Orca

open source, scripting
screen reader/magnifier

Assistive Technology for People with Severe Physical Impairments

- GOK – open source, *dynamic* on-screen keyboard
 - > Developed by the University of Toronto Adaptive Technology Resource Centre
 - > Reaches into running applications, puts their toolbar items, menus, etc. onto a keyboard dynamically
 - > Far more features than anything you can buy for Windows or Macintosh
 - > Single switch, head mouse, & eye-gaze support

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GOK

the open source
dynamic on-screen keyboard

Assistive Technology for Advanced, Rapid Text-Entry

- Dasher alternative text entry system
 - > Developed by Cambridge University, UK
 - > Designed for head pointer, eye-gaze users
 - > “Typing” speed of 35+ words per minute possible using just eye movement, head movement
 - > Over sixty alphabets/languages supported, easy to create new/specialized ones
 - > Available for Windows & Mac, but on UNIX it does more...

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Dasher

the open source
alternative text entry system

ODF Application Accessibility

- StarOffice 8 / OpenOffice.org 2.0
 - > Excellent keyboard navigation
 - > Excellent theme support (skins the GTK+ widget set in GNOME)
 - > Explicit support of accessibility architecture via UNO Accessibility API
 - > Export of Tagged PDF
 - > Very usable with UNIX assistive technology

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StarOffice 8 / OpenOffice.org 2.0

the open source office suite

Enterprise Accessibility Challenges

- Assistive Technology price per machine
 - > Screen reader (JAWS): \$900-\$1,300
 - > Screen magnifier (ZoomText): \$600
 - > Other AT products: variety of prices
- Deployment
 - > Dedicate a system to a use; expensive and wasteful in computer labs
 - > Systems with AT very brittle – don't let non-disabled touch them!
- Assistive Technology upgrades expensive, frequent

Enterprise Accessibility Solutions: Built-in, Supported AT & Thin-Clients

- Supported architecture for accessibility; things no longer brittle
- Huge collection of apps which support the architecture, interoperate on the desktop
- AT from the same vendor as desktop apps (StarOffice, Mozilla, Evolution, etc.) - single source for assistance
- Deliver the AT needed to each and every thin client workstation (or to none of them)
- “Session Mobility”

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SunRay

accessible thin client solution

Resources

- OASIS Technical Committee for ODF:
http://www.oasis-open.org/committees/tc_home.php?wg_abbrev=office
- OpenOffice.org accessibility site:
<http://ui.openoffice.org/accessibility/>
- UNIX Accessibility links:
 - > Main site: <http://developer.gnome.org/projects/gap>
 - > Gnopernicus: <http://www.baum.ro/gnopernicus.html>
 - > Orca:
http://cvs.gnome.org/viewcvs/*checkout*/orca/docs/doc-set/orca.html
 - > GOK: <http://www.gok.ca>
 - > Dasher: <http://www.inference.phy.cam.ac.uk/dasher/>
 - > FSG Accessibility: <http://www.a11y.org>



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