



Cabinet Office

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Hi everyone, great to be here. Thanks for coming along.

For those of you who haven't heard of the GDS before, we work on this:

The screenshot shows the GOV.UK homepage. At the top, there is a blue header with the GOV.UK logo and the text "Welcome to GOV.UK". Below this, there is a search bar and a "Contents" menu. The main content area is divided into several sections, each with a title and a brief description of the services provided. The sections include: "Driving and transport", "Employing people", "Working, jobs and pensions", "Money and tax", "Citizenship and living in the UK", "Benefits", "Passports, travel and living abroad", "Housing and local services", "Births, deaths, marriages and care", "Businesses and self-employed", "Education and learning", and "Crime, justice and the law".

GOV.UK replaced direct.gov and Business Link as the online presence of HM gov't, and since it's been live it's replaced the 24 separate ministerial department websites, sites for the PM and DPM, plus around 130 of 330 or so websites for arms length bodies.

We're working on transitioning the rest of the ALB sites right now.

As part of that transition, we've already closed over 1800 different domains and redirected the old content to the new URL if it's still live, or to an archived version on the National Archives site so we're not breaking the web while we transition over to GOV.UK.

User testing with assistive technologies

A big part of my job is testing with AT.

I'm a combination of developer, an accessibility evangelist and educator, but making sure the products we build are as usable as we can make them is the biggest part of my role at the GDS.

I test things. A lot.

Some common assistive technologies

- Screen readers & Braille readers - blind
- Screen magnifiers & colour overlays - partially sighted
- Dictation apps - motor skills, injuries, elderly
- Switches - motor skills
- Subtitles and Captioning - deaf, elderly, plus foreign
- Video Relay technology - deaf BSL speakers

I'm wearing one of the most commonly used AT's on my face. We're all getting older, not sure about you but I like that we've moved on from tiny bitmapped 9px fonts and low contrast grey on grey text all over the place.

There's lots of cross over between AT and the people you think will use them but it's not always obvious.

I used a dictation app for the 6 months it took for my broken wrist to heal.

JAWS
NVDA
WindowEyes
VoiceOver
TalkBack

The major screen readers you may come across

JAWS usage is dropping but it's still up at 82.8% *

NVDA usage is growing fast.

VoiceOver is very fully featured on Mac and iOS.

TalkBack **will** make you want to pull out your hair it's so buggy.

AT is expensive, but there are free options and they keep getting better.

* <http://webaim.org/projects/screenreadersurvey5/>

JAWS: <http://www.freedomscientific.com/products/fs/jaws-product-page.asp>

NVDA: <http://www.nvaccess.org>

WindowEyes: <http://www.gwmicro.com/Window-Eyes/>

VoiceOver: <https://www.apple.com/uk/accessibility/osx/voiceover/>

TalkBack: <https://play.google.com/store/apps/details?id=com.google.android.marvin.talkback>

ZoomText
SuperNova
Built-in OS magnifiers

ZoomText is the biggie: a combination of a screen magnifier and a screen reader.

The built in zoom in Mac OS and Windows is pretty good. Linux is Linux.

Browser zoom isn't always going to show you the same thing as a magnifier will but you should be able to resize the text to at least 200% without the layout breaking.

Magnifiers are a different thing altogether. I know of users who use a 32" tv as a monitor with the resolution set to 640 x 480 so they browse everything a word at a time. You can't be precious about, some people have no choice but to read the web a word or a letter at a time. Help them.

**ClaroView
Coloured Overlay
Screener
ZoomText**

If you have certain vision issues or you're dyslexic you may need to use an overlay to change the background colour of your screen.

I can't cope - at all - with white text on a dark background. Using a blue coloured filter can help certain users so the contrast issues aren't so jarring.

ZoomText lets you change background colours as well as magnify the screen.

http://www.clarosoftware.com/product_info.php?products_id=1811

<http://www.thomson-software-solutions.com/colouredoverlayscreener.html>

**How we
approach accessibility**

Lower case "a" agile approach.

Distinct product development phases (discovery, alpha, beta, live) but each product team is responsible for their own accessibility. I'm there to support them, but they own it.

A11y cuts through everything we do, including our digital strategies, so content, researchers, designers, developers, delivery people all play a part.

Test early and often, all the way from alpha to live.

We test internally while the product is being developed, as many times as we feel are needed, but by the time you're at beta you should have had at least one round of formal user testing with a disabled user group. Look for a spread of different users.

What do you need to test with?

Mostly it depends on your audience.

Ours is 40-50 million people per year of every kind of ability or disability, education level and computing familiarity. Possibly every adult in the UK, at least once a year. Mostly for things that are inherently big, scary concepts. Death. Taxes.

Yours might not be that broad, but because people don't always identify as being disabled and AT doesn't tell you when it's being used, knowing your audience is tricky. User research becomes key.

Find out who your audience are and what they need help with.

Accessibility doesn't just mean screen readers

This is an important point:

They make up a large proportion of users of AT, but they may not be all and end all of your accessibility efforts.

That said, building for them and testing with them is a good place to start.

Structure your HTML so that the content makes sense without visuals, use a consistent heading structure, use well formed HTML, decent semantics using plain boring HTML - HTML5 if possible.

All of this will lesson the work needed by AT to understand the meaning of your pages. More consistency is better for your users too. Behaviour learned once and carried across your site or your product helps them use it.

Your audience will shape your testing plan

We don't use much video content, but if we did we'd need to caption and subtitle it.

If you have deaf users you might need to provide content translated into BSL.

You might be on a fancy-pants Macbook, but lots of your audience might still be on Windows XP on an old Dell brick. If you rely on a screen reader, there's a good chance you're still on Windows XP and an older version of JAWS or NVDA.

Upgrades are hard for most of us, but if you rely on something that's working to do anything there's resistance to risking the change. Especially when JAWS costs nearly a thousand quid. Braille readers and many times more than that.

So how do you test?

Unfortunately, most of this will be manual. Automated checks aren't going to be good enough on their own to flag what is or isn't a proper issue. Sorry.

There's lots of repetition - think browser testing, but more complex.

The good news is that there are certain browser & OS combinations that are well supported, so you can focus your efforts.

JAWS and NVDA in Firefox or IE. VoiceOver in Safari.

Others won't have as full featured access to the accessibility API's, so while they might work, they won't be exposing the needed roles, states and properties provided by the API's to properly describe what's happening on screen.

Test features, not pages

The aim for us is “can I complete the task from beginning to end in the AT”

We should be able to understand the structure of the pages, the content, whether we’re on the correct page, and then consume or complete any required information as easily and as understandably as anyone else.

Use things like the WebAIM WAVE Toolbar or Deque FireEyes to run automated checks to make sure you haven’t done anything silly, but in each product you have to support, go through each feature and ensure you can get from end to end.

<http://wave.webaim.org/toolbar/>

<http://www.deque.com/products/fireeyes/>

Common issues

Upgrade fear. Your users may be on an old OS, an older buggy version of the AT, an older or less-supported phone, they may be using a browser that doesn’t talk with a11y API’s at all. They’ll still blame you if it doesn’t work.

AT are difficult to use. Especially when you can cheat and take a look if you don’t understand what you’re hearing. There’s a definite and steep learning curve.

It’s a whole other category of things to know about on top of your usual developer stack. Add on implementation bugs and browser compatibility issues and it becomes even harder.

Unless your whole team is on board it can be tough to work out who’s responsible for it. It’s not just a developer issue, it should run through everything.

WWJD

so what's my process?

Code quality check
Quick audit with tools
Run through in AT
Report issues to team
Repeat as needed

This is my typical workflow.

I'll check the usual suspects - crappy HTML, missing landmarks, skip links, structured headings, missing form labels, understandable content, colour contrast.

I'll run a check in something like WAVE toolbar to flag anything as a quick sanity check.

I'll run through the feature in the AT I'm testing and make sure there aren't any blockers, then I'll repeat the process for whatever AT I need to support.

If I have recommendations for re-coding something I'll report that back, the team will go and fit that in with their next sprint and we'll do it again.
Once I'm happy that it's good enough, we'll allow it to launch. YMMV.

Make it a quality issue

We all want to do great work. Monkey butlers and a Lamborghini in the garage would be pretty awesome too.

I think making your products accessible is just a mark of caring about your work as a web professional in 2014.

We have amazing tools to help us build just about anything we put our minds to. It's up to us to make sure we're not leaving people behind while we transform the web.

The web is for everyone, regardless of ability. We need to keep it that way.

When you think you're finished, hire a professional

I use AT as part of my job, and I'm a pretty good developer. What I'm not is someone who relies on AT to function. Besides the glasses.

My feedback won't be as detailed or as specific as from someone who's a power-user of that AT.

I hired Léonie to help me when GOV.UK was in beta. We still hire external agencies to help validate our work. Hire one with a range of disabled users on their permanent staff and you'll get fantastic results.

We use the DAC in South Wales across government and they're wonderful. Also used many others, like Nomensa or User Vision. We've built a lab in house so we can observe more testing but we're lucky.

“The power of the Web is in its universality.

Access by everyone regardless of ability is an essential aspect.”

Sir Tim Berners Lee
Inventor of the World Wide Web

I really like this quote from Sir Tim.

Don't assume that because you're making a camera app that your blind users won't use it.

Don't assume that because you're making an iOS game, users with cerebral palsy won't use switches to play it.

Focussing on simplicity and usability makes everything better, for all of your users.

Learning what it's like to use your products in something like a screen reader is hard at first, but it will make you a better web professional.

It will also improve your products, your bottom line, and your users lives.

Get started with accessibility:
<http://webaim.org/blog/10-easy-accessibility-tips/>

JAWS:
<http://webaim.org/articles/jaws/>

NDVA:
<http://webaim.org/articles/nvda/>

VoiceOver:
<http://webaim.org/articles/voiceover/>

I'll leave you with these.

Jared from WebAIM is brilliant.

If you want to get started in a11y, his 10 tips are a great starting point.

If you're need help using screen readers his cheat sheets for JAWS, NDVA and VoiceOver are handy.

The accessibility community is a very friendly, if incredibly opinionated place. If you need help, there'll be plenty of people to help out if you ask.

Get involved, get testing, and if you need any help, just ask.

Thanks

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Thanks.

I'll be around for a while if anyone has any questions.
