



With GOV.UK, British government redefines the online government platform

The U.K. moves from alpha.gov.uk to beta.

by [Alex Howard](#) | [@digiphile](#) | [+Alex Howard](#) | [Comments: 8](#) | January 31, 2012

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The British Government has launched a beta of its [GOV.UK](#) platform, testing a single domain for that could be used throughout government. The new single government domain will eventually replace [Directgov](#), the UK government portal which launched back in 2004. GOV.UK is aimed squarely as delivering faster digital services to citizens through a much improved user interface at decreased cost.

Unfortunately, far too often .gov websites cost millions and don't deliver as needed. GOV.UK is open source, mobile-friendly, platform agnostic, uses HTML5, scalable, hosted in the cloud and open for feedback. Those criteria collectively embody the default for how government should approach their online efforts in the 21st century.

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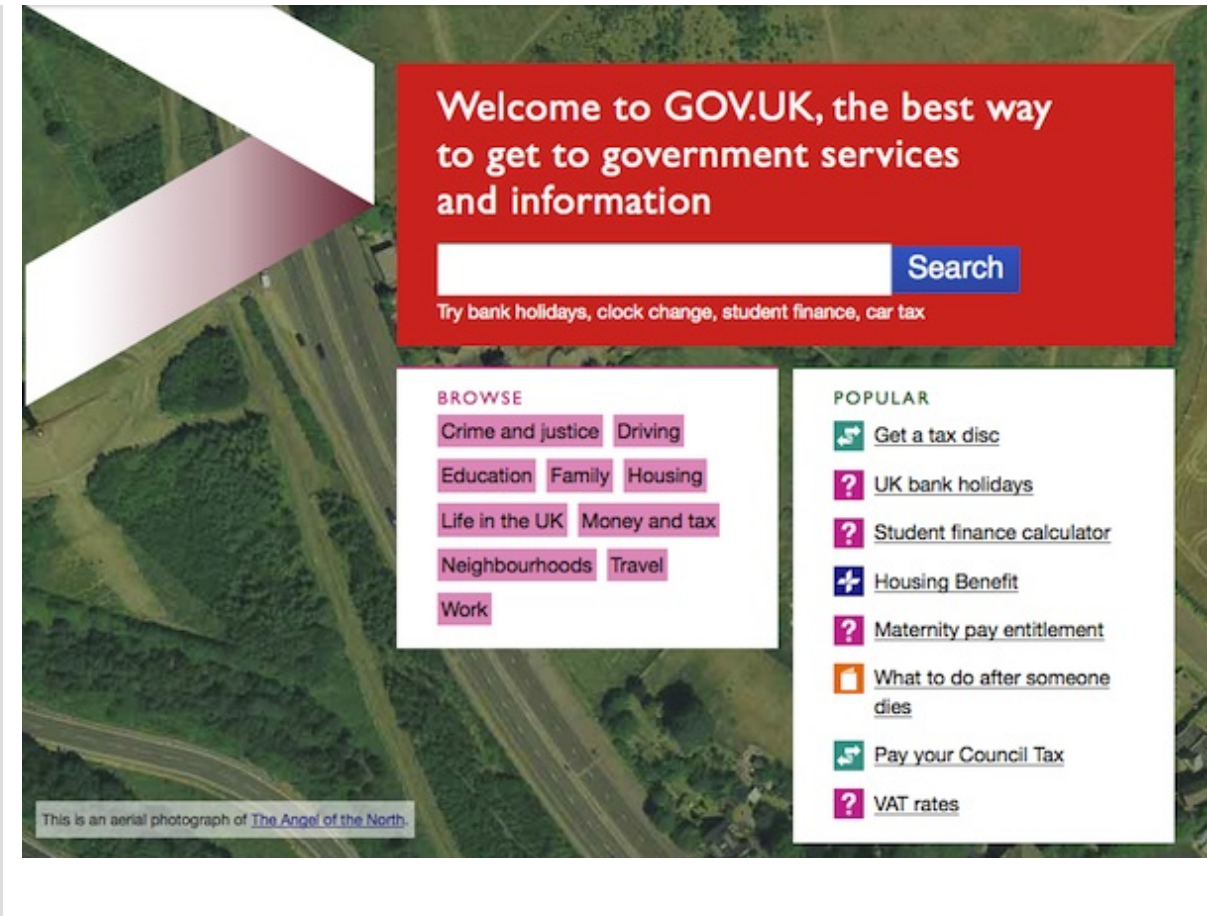
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“Digital public services should be easy to find and simple to use – they must also be cost effective and SME-friendly,” said Francis Maude, the British Minister for the Cabinet Office, in a prepared statement. “The beta release of a single domain takes us one step closer to this goal.”

Tom Loosemore, deputy director of government digital service at UK Government, [introduced the beta of GOV.UK](#) at the Government Digital Service blog, including a great deal of context on its development and history. Over at the Financial Times Tech blog, Tim Bradshaw has published an excellent review of [the GOV.UK beta](#).


As Bradshaw highlights, what’s notable about the new beta is not just the site itself but the team and culture behind it: that of a large startup, not the more ponderous


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GOV.UK is a watershed in how government approaches Web design, both in terms of what you see online and how it was developed. The British team of developers, designers and managers behind the platform collaboratively built GOV.UK in-house using agile development and the kind of iterative processes one generally only sees in modern Web design shops. Given that this platform is designed to serve as a common online architecture for the government of the United Kingdom, that’s meaningful.

“Our approach is changing,” said Maude. “IT needs to be commissioned or rented, rather than procured in huge, expensive contracts of long duration. We are embracing new, cloud-based start-ups and enterprise companies and this will bring benefits for small and medium sized enterprises here in the UK and so contribute to growth.”

The designers of GOV.UK, in fact, specifically describe it as “government as a platform.” It’s code that others can build upon. It was open from the start, given that the new site was built using open source tools. The code behind GOV.UK was released as [open source code on GitHub](#).

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“For me, this platform is all about putting the user needs first in the delivery of public services online in the UK,” said Mike Bracken, executive director of government digital services. Bracken is the former director of digital development at the Guardian News and Media and was involved in setting up [MySociety](#). “For too long, user need has been trumped by internal demands, existing technology choices and restrictive procurement practices. GOV.UK puts user need firmly in charge of all our digital thinking, and about

time too.”

The Gov.UK stack

Reached via email, Bracken explained more about the technology choices that have went into GOV.UK, including a platform diagram, below.

Why create an open source stack? “Why not?” asked Bracken. “It’s a government platform, and as such it belongs to us all and we want people to contribute and share in its development.”

While many local, state and federal sites in the United States have chosen to adapt and use WordPress or Drupal as [open government platforms](#), the UK team started afresh.

“Much of the code is based on our earlier alpha, which we launched in May last year as an early prototype for a single platform,” said Bracken. “We learnt from the journey, and rewrote some key components recently, one key element of the prototype in scale.”

According to Bracken, the budget for the beta is £1.7 million pounds, which they are running under at present. (By way of contrast, the open government reboot of FCC.gov was estimated to cost 1.35 million dollars.) There are about 40 developers coding on GOV.UK, said Bracken, but the entire Government Digital Service has around 120 staff, with up to 1800 external testers. They also used several external development houses to complement their team, some for only two weeks at a time.

Why build an entirely new open government platform? “It works,” said Bracken. “It’s inherently flexible, best of breed and completely modular. And it doesn’t require any software licenses.”

Bracken believes that the GOV.UK will give the British government agility, flexibility and freedom to change as they go, which are, as he noted, not characteristics aligned with the [usual technology build in the UK](#) — or elsewhere, for that matter.

Given the British government’s ambitious plans for open data, the GOV.UK platform also will need to be act as, well, a platform. On that count, they’re still planning, not implementing.

“With regard to API’s, our long term plan is to ‘go wholesale,’ by which we mean expose data and services via API’s,” said Bracken. “We are at the early stages of mapping out key attributes, particularly around identity services, so to be fair it’s early days yet. The inherent flexibility does allow for us to accommodate future changes, but it would be premature to make substantial claims to back up API delivery at this point.”

The GOV.UK platform will be adaptable for the purposes of city government as well, over time. “We aim to migrate key department sites onto it in the first period of migration, and then look at government agencies,” said Bracken. “The migration, with over 400 domains to review, will take more than a year. We aim to offer various platform services which meet the needs of all Government service providers.”

Making GOV.UK citizen-centric

The GOV.UK platform was also designed to be citizen-centric, keeping the tasks that people come to a government site to accomplish in mind. Its designers, apparently amply supplied with classic British humor, dubbed the engine that tracks them the “[Needotron](#).”

“We didn’t just identify top needs,” said Loosemore, via email. “We built a machine to manage them for us now and in the future. Currently there are 667!” Loosemore said that they’ve open sourced the Needotron code, for those interested in tracking needs of their own.

“There are some of the Top needs we’ve not got to properly yet,” said Loosemore. “For example, job search is still sub-optimal, as is the stuff to do with losing your passport.”

According to Loosemore, some the top needs that citizens have when they come to a site in the UK are determining the minimum wage, learning when the public and bank holidays are or when the clocks change for British Summer Time. They also come to central government to pay their council tax, which is actually a local function, but GOV.UK is designed to route those users to the correct site using geolocation.

This beta will have the top 1000 things you would need to do government, said Maude, speaking at the Sunlight Foundation this week. (If that’s so, there’s over 300 more yet to go.)

“There’s massive change needed in our approach to how to digitize what we do,” he said.

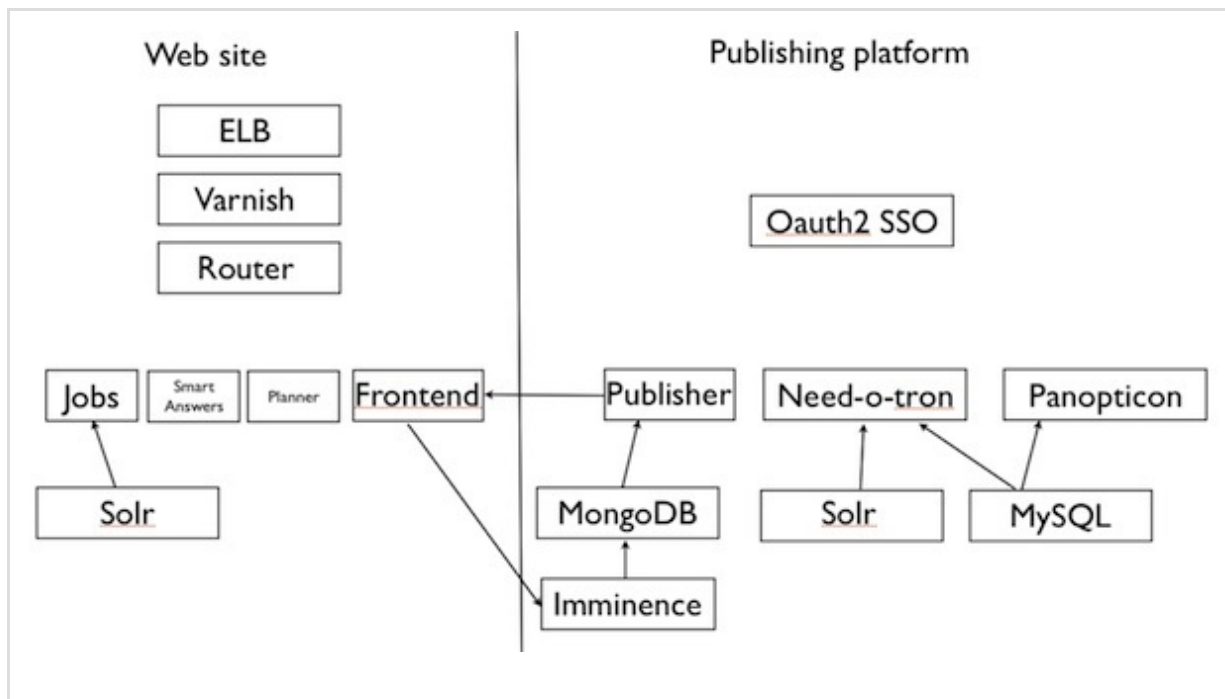
“Instead of locking in with a massive supplier, we need to be thinking of it the other way around. What do people need from government? Work from the outside in and redesign processes.”

In his comments, Maude emphasized the importance of citizen-centricity, with respect to interfaces. We don’t need to educate people on how to use a service, he said. We need to educate government on how to serve the citizen.

“Like U.S., the U.K. has a huge budget deficit,” he said. “The public expects to be able to transact with government in a cheap, easy way. This enables them to do it in a cheaper, easier way, with choices. It’s not about cutting 10 or 20% from the cost but how to do it for 10 or 20% of the *total* cost.”

The tech behind Gov.UK

James Stewart, who was the tech lead on the beta of GOV.UK, recently blogged about [and browser support](#). He emailed me the following breakdown of the rest of the technology behind GOV.UK.



Hosting and Infrastructure:

- DNS hosted by Dyn.com
- Servers are Amazon EC2 instances running Ubuntu 10.04LTS
- Email (internal alerts) sending via Amazon SES and Gmail
- Miscellaneous file storage on Amazon S3
- Jetty application server
- Nginx, Apache and mod_passenger
- Jenkins continuous integration server
- Caching by Varnish
- Configuration management using Puppet

Front end

- Javascript uses jQuery, jQuery UI, Chosen, and a variety of other plugins
- Gill Sans, provided by fonts.com
- Google web font loader

Languages, Frameworks and Plugins

“Most of the application code is written in Ruby, running on a mixture of Rails and Sinatra,” said Stewart. “Rails and Sinatra gave us the right balance of productivity and clean code, and were well known to the team we’ve assembled. We’ve used a range of gems along with these, full details of which can be found in the Gemfiles at [Github.com/alphagov](https://github.com/alphagov).”

The router for GOV.UK is written in Scala and uses Scalatra for its internal API, said Stewart. “The router distributes requests to the appropriate backend apps, allowing us

to keep individual apps very focused on a particular problem without exposing that to visitors,” said Stewart. “We did a bake-off between a ruby implementation and a Scala implementation and were convinced that the Scala version was better able to handle the high level of concurrency this app will require.”

Databases

- MongoDB. “We started out building everything using MySQL but moved to MongoDB as we realised how much of our content fitted its document-centric approach,” said Stewart. “Over time we’ve been more and more impressed with it and expect to increase our usage of it in the future.”
- MySQL, hosted using Amazon’s RDS platform. “Some of the data we need to store is still essentially relational and we use MySQL to store that,” said Stewart. “Amazon RDS takes away many of the scaling and resilience concerns we had with that, without requiring changes to our application code.”
- MaPit geocoding and information service from mySociety. “MaPit not only does conventional geocoding, ” said Stewart, in terms of determining what the given the longitude or latitude is for a postcode, but ” it also gives us details of all the local government areas a postcode is in, which lets us point visitors to relevant local services.”

Collaboration tools

gov.uk screenshot

- Campfire for team chat
- Google Apps
- MediaWiki
- Pivotal Tracker

- Many, many index cards.

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