



## Case Study: Jobs and Skills

Helping citizens achieve their potential by providing access to jobs and training opportunities through the first natural language search facility in e-Government

**DWP** Department for  
Work and Pensions

Jobs and Skills (<http://jobseekers.direct.gov.uk>) is the UK's national jobs, learning and careers website and is presented through Directgov - the official government website for citizens. This cross-government service integrates access to existing information resources and aggregates it for use by citizens of working age looking for jobs, training courses and associated information. The UK is the first government to aggregate such information nationally and make it available on the web.



### The Challenge

Jobs and Skills is about breaking down barriers to work and enabling and empowering all sectors of the workforce, and especially disadvantaged groups, to be better able to find and exploit opportunities for employment and learning.

It is specifically tasked with drawing together disparate information sources and making them meaningful to citizens using everyday words and natural language. It addresses accessibility not only in the traditional sense but also by modifying its behaviour to match the user's input rather than requiring them to carry out a rigidly defined set of ordered tasks.

The project was undertaken in response to several drivers:

- to break down barriers to work for citizens
- to ensure equality of access to all
- to provide a search using "ordinary words"
- to make best use of existing resources
- to provide a cost effective and scalable solution

From a citizen's point of view, the goals were to provide a one-stop-shop for access to job vacancies, learning opportunities, childcare availability, careers information and voluntary work and to deliver this capability using technologies which could be accessed over the internet using assistive technologies and in simple straightforward words.

The business objectives were to achieve this by reusing existing information resources and to make the system available from the Directgov website.



### The solution

Steria was selected for its track record in delivery and innovation in software development, support and hosting services and because it continues to offer best value for money.

The heart of the service is a natural language interface that allows searches to be carried out using language familiar to our users with no requirement for them to understand the classification systems used by the data partners. The key element is a 1.6 million-entry thesaurus that resolves the users' input to search criteria comprehensible to the classification systems of the data providers. For example, if a user includes 'dinner lady' as part of their input the interface automatically resolves to a code for 'midday meal assistant' to populate the search interface with data partners. The interface is supported by a parser to identify the subject (type of job), location and objective (job, training etc search). The end result is a user-friendly search mechanism, demonstrating true joined up government.



Natural language searching now allows people to search a database of over 100,000 jobs and over 600,000 learning opportunities using their own words - a first for a government e-service. Feedback from users confirms that the new site is simple to use, provides relevant information and responds more quickly to queries. Quantitative research shows that average search times improve by between 25% and 50%. Since going live, Jobs and Skills has been one of the top five most used government websites, attracting up to 19 million page requests a day. Other metrics also demonstrate a high degree of success – Jobs and Skills has been rated the number one performing central government website in the Sitemorse table since 2008.

### The benefits

The benefits to users are that they are able to find related information from different systems using natural language; a user entering the query "I want checkout work in Nottingham" will get a list of relevant jobs in Nottingham and the surrounding area in a single go rather than having to select first "job" from a list, then specify a location, and finally navigate a subject hierarchy. The list of results is related to the idea of "checkout operator", but does not necessarily include those actual words.

Users find results up to 50% faster using this approach than traditional approaches and do not need to guess where "checkout operator" is classified within a job list. They are also presented with links to related training, childcare and careers information without restating the search.

The benefits for accessibility are that the site is highly useable by users of assistive technologies.

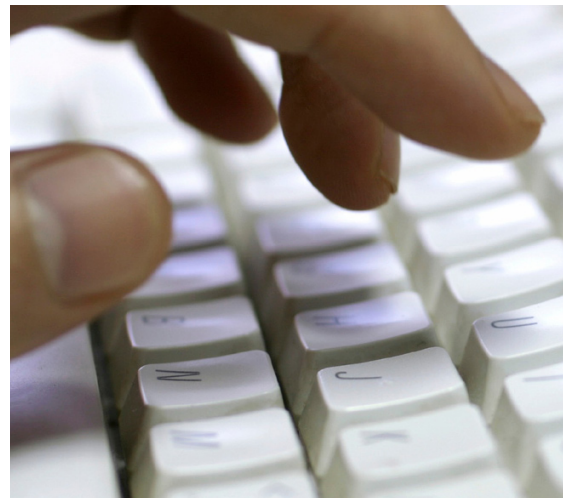
The benefits to the organisation are that this innovative functionality can be delivered in many forms and branding utilising the same underlying functionality at low cost. The investment made in developing the 'natural language' search is being reused in a number of guises that increases the Department's penetration into the jobseeker market. Increasing market penetration potentially reduces the footfall in Jobcentre Plus offices to allow staff to concentrate on the hardest-to-help citizens whilst reducing costs. This has been extended to a range of partners in the private sector and the wider public sector such as interactive DTV and kiosk providers with the objective of increasing the access to jobs and related information to everyone including those without Internet access. This work will also contribute to the Department's responsibility for the management of the UK labour market.

### Evolution

Natural language searching now allows people to search a database of over 100,000 jobs and over 600,000 learning opportunities using their own words - a first for a government e-service. To support this, Steria has developed a unique fuzzy-matching search engine which returns not only exact matches but also good or likely matches for user searches, which are visible in order of the quality of their match. This allows users to specify a search using a postcode for example and get results in the surrounding area, or find related jobs which might also interest them, showing 'pipe fitter' for example, when they actually searched for 'plumber'. This fuzzy matching greatly reduces the probability of a demoralizing 'no results were found' response

### Award winning

The site has won several awards, including Government Computing's "Best Partnership Project in the Public Service", a British Computer Society Award for Innovation and e-GIF Supplier of the Year.



**Steria has played a pivotal role in the creation of an innovative new e-government service that is driving improved citizen engagement on a significant scale."**

Graham Jack, Programme Manager, Department for Work and Pensions



### About Steria

Steria delivers IT enabled business services which help organisations in the public and private sectors

operate more efficiently and profitably. By combining in depth understanding of our clients' businesses with expertise in IT and business process outsourcing, we take on our clients' challenges and develop innovative solutions to address them. Through our highly collaborative consulting style, we work with our clients to transform their business, enabling them to focus on what they do best. Our 18,300 people, working across 16 countries, support the systems, services and processes that make today's world turn, touching the lives of millions around the globe each day.

Founded in 1969, Steria has offices in Europe, India, North Africa and SE Asia and a 2009 revenue of €1.63 billion. 19.3% of Steria's capital is owned by its employees. Headquartered in Paris, Steria is listed on the Euronext Paris market.



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