

# Open source: helping to keep London moving



Red Hat, the open source vendor that provided the portal and application server for the Oyster card web channel redevelopment, has helped TfL achieve an 80% operational saving on the project

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**I**n conjunction with the recent policy publication focusing on Open Source, Open Standards and Re-Use, John Suffolk, the government's chief information officer, is encouraging vendors to play their part in increasing the adoption of open source technology in the public sector by publishing success stories to raise awareness. "Red Hat is an open source vendor that has taken up that challenge and has asked me and Ian Henderson to talk about a success story for Transport for London's (TfL) Oyster card system", says Sam Roddick, head of Deloitte's software engineering practice in the UK.

The project was "all about moving away from a high cost vendor solution, that TfL were locked into, to a much lower cost solution that was based on open standards and open source components", explains Roddick.

"The legacy solution that supported the web and telephone channels for the Oyster

card was quite old, fairly inflexible and carried a very high licence cost. It constrained TfL's ability to introduce new products in support of the evolving needs of their customers, and it would have been difficult to make it conform to current standards around security.

"What we discussed with TfL," Roddick outlines, "and what we implemented was a re-architected site that reused some of the code but moved away from a proprietary closed source and non-standard platform and onto an open source and standards based application server and the portal-based environment – both provided by JBoss. It took about four months to do and once complete achieved immediate operational savings of about 80%. The cost savings were made possible not only because licence cost was effectively eradicated but also because commodity hosting and infrastructure replaced the specialist

hosting and infrastructure required for the old solution. This is a real example of how conforming to open standards helps drive down cost.

"An open architecture with open standards also means that TfL has increased flexibility and can change as the market evolves. Vendor lock-in is pretty much removed. This allows them to take advantage of innovative new products and really stay up-to-date.

"The project has been successful not only in reducing cost but also in increasing functionality and improving performance. We can be far more responsive to TfL's needs since the project and have delivered functional enhancements in less time and for less cost than before. It is also possible to support increased demand simply and without dramatically increasing cost – if we need to scale then this can be achieved by adding another server into the application server clus-

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ter and without any additional licence cost.

“Finally, because the new solution is based on modern components, we are able to conform to the most recent security standards. For example, the solution has been certified to meet the Payment Card Industry Data Security Standards (PCI DSS), the current benchmark of secure websites.”

Red Hat are well aligned with recent government policy changes regarding the use of open source in IT projects, which was important to TfL. From a customer service point of view, TfL’s Ian Henderson says that the new system has delivered benefits in terms of innovation and additional functionality: “Certainly with Oyster card we knew that we needed to change the support systems, because what we had in place was quite expensive to run. But also we’re beginning to work with companies like Barclaycard to offer dual credit and Oyster card facilities on one card, and we knew that if we didn’t change our systems, then new initiatives like this were going to turn into quite an expensive and complicated piece of work.

“We looked in detail at the architecture of the Oyster systems themselves – everything functional that sits behind the web that you don’t actually see. What we had was constraining the development of the Oyster card; high quality services like auto top-up (where you arrange with your bank that when the value on your card falls below a certain amount to transfer funds from your account to top up the card to an agreed amount) and an efficient refund service will

now be available to our customers without TfL incurring unnecessary costs.”

It’s important that TfL’s customers can feel confident that their transactions are covered by the latest security regulations. “There’s a lot of sensitive data in all of these transactions,” Henderson explains. “It’s as sensitive as any other retail operation, and so we wanted to make sure that we complied with the very latest payment card industry regulations. We undertook – from the ground up – to be compliant with PCI regulations and data security standards. There are a lot of commercial organisations out there that are still working towards that.”

The new portal-based system provides both business and customer service benefits, Henderson says. “The new system reduces costs, it has improved the service we can give to the customer, and it is more reliable, more available and much quicker. It allows the customer to self-serve, which means they can do it at a time that suits them without having to wait to speak to an agent. And it’s delivered to us at a considerable operational saving.”

The systems that drive the customer-facing website are also the systems that TfL’s agents use. Previously, the interface for customers and for agents was identical, which meant that experienced customer service agents had to page through the step-by-step website intended for the public. Now, agents use “a professional version of the website and that allows the agent to handle the calls more quickly, because they are using a stripped down version with lots of shortcuts”.

“When we have compared what has happened when we’ve run the system for the last 12 months against what it used to be like, we’ve now not had any outages to that system in 12 months. That means that we’ve reduced what I call that unexpected variable.”

Henderson sees the technology used in this new system becoming ubiquitous in the future, driving even the most standard transactions. “Most people queuing at a ticket office just want to buy a ticket, or to load up something onto their Oyster card – the more we can allow them to do that over the web and on their mobile phone, then I can take that workload from the agents and allow them to handle more complex enquiries. The way the technology currently works is that if you just lost your season ticket, you’ll sit in a phone queue with people who might just want to know what the balance is on their Oyster card. So we’re working towards actually increasing that customer self-serve to as high a degree as possible. We want to be able to offer a 24 hour, flexible service, accessible by phone, PC and mobile internet.

“What have been important are the teams that we’ve worked with. It’s really important that the different teams get on well and that there’s a real focus on there being a common thing to deliver. It is something that’s often quite overlooked; being able to work with teams from different companies towards a common objective.” ●

Sam Roddick and Ian Henderson spoke to Maria Crossan

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