Digital by Default, Open by Design

Why Open Standards and Open Source for the Public Sector?

Challenges for the Public Sector

All levels of government within Australia today face some of the greatest challenges seen for a generation. Cost, demand, innovation, and the mainstream adoption of online self-service in most areas of economic and social activity, is speeding up the drive for a shift to digital platforms. A digital platform strategy brings scalability and radically lower transaction costs to services. The public sector will inevitably follow the private sector in placing as many services as possible in the online space, not only for economic but social and demand led reasons.

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Initiatives such as the Federal Digital Transformation Agenda are embracing this trend. The government's work to establish and embed open standards and common solutions is a vital part of helping the diverse and heterogeneous public sector take the necessary steps to realise the vision of a digital first and digital self-service future. Adoption of these principles will allow the collective buying and building power of the public sector, to shape a future where common services are created commonly and digital government as a platform can be fully realised.

Surge in Internet Use and Mobile Access

Increasingly, technically sophisticated customers and the exponential growth of the mobile web, mean that public demand for seamless, well-designed online services is growing.

In the Australian Communications and Media Authority report, 2013–14 series, *Australians' Digital Lives*[1] the conclusions are unambiguous:

> *We are more connected to the online world than ever before, with more than nine in 10 adult Australians (92 per cent) using the internet in the six months to May 2014.*[2] *We are increasingly using multiple devices to go online. Almost seven in 10 online Australians (68 per cent) used three or more devices to access the internet in the six months to May 2014. Almost a quarter (23 per cent) used five or more devices to go online.*

This increase in internet access coincides with a growing demand for mobile internet and digital systems, requiring all organisations and the public sector to pay attention to these factors when designing the digital experience for their customers and users. Gartner predicts that, by 2018, more than 50 percent of users will go to a tablet or smartphone first for all online activities:

> *The use pattern that has emerged for nearly all consumers, based on device accessibility, is the smartphone first as a device that is carried when mobile, followed by the tablet that is used for longer sessions, with the PC increasingly reserved for more-complex tasks.*[3]

At a minimum, any website needs to be mobile-optimised for mobile browsing and deliver a responsive site. When demand necessitates then the next-step is a dedicated site to ensure users see precisely what they need to on their device of choice.

1 www.acma.gov.au/~/media/Research%20and%20Analysis/Research/pdf/Australians%20digital%20livesFinal%20pdf.pdf
2 ACMA-commissioned survey, May 2014.
3 www.gartner.com/newsroom/id/2939217

Open Source Aligns with Open Standards

It is against this backdrop – a surge in internet and mobile use by citizens, tighter budget controls and ROI focus in the public sector – that co-designed and co-created services on a commonly supported platform are essential. In this space the fundamental principles of open source and its ally, open standards, become key elements in satisfying the demands of the user to have both a better experience and lower costs in delivery of services.

> **With open code, organisations can stand on the shoulders of others who have shared their work and achieve much more with much less, rapidly.**

The answer lies in common solution development for common service elements with a modularity that allows organisations to fit together the pieces which suit their needs and simply develop the extra elements required. This is not a 'one size fits all' approach, but rather, as organisations with common needs routinely share back-office systems – why not internal and external facing web services also?

The benefits are instantly recognisable. Not only is it be possible to re-use work already carried out by others, government departments can also pool resources to carry out pieces of work and offer them back to the rest of the public sector for re-use and recycling. Open standards go part of the way. Only with an open source approach can this be fully realised. Every organisation has its specific needs. Most will need to extend or alter these generic elements in some way.

For strictly common services open standards are the solution but for those elements that require integration with existing systems and services, some change will be necessary. Open source is the better option.

The Case for Open Source Software (OSS)

> *Open source is a development method for software that harnesses the power of distributed peer review and transparency of process. The promise of open source is better quality, higher reliability, more flexibility, lower cost, and an end to predatory vendor lock-in.*[4]

Today open source is adopted worldwide by large enterprises from multi-national financial institutions and retail giants to highly secure Government services like the US army, navy and air-force to institutions within Asia Pacific and the European Union. This is due to the emergence of Enterprise grade support from Open Source companies. Professionally supported, enterprise level open source software is now suitable for mission critical applications.

It coincides with governments around the world facing increasing constraints on budgets and demand from citizens for innovative services and online engagement. Open source and open standards are a natural choice for public sector organisations. Generally, open source offers a lower total cost of ownership (TCO), with costs the same or lower across all phases of the lifecycle most notably in acquisition and maintenance.[5]

By default open source offers a transparent, heterogeneous approach to software development as opposed to a homogenous, closed, proprietary one. By design it encourages re-use. Taking an open approach offers a cumulative, collaborative, model for effort across organisations that share common processes. For the public sector this offers extraordinary scope for creating and sharing customisable solutions to common problems and the ability to build on the achievements and investment of others.[6] Because of this, open source lends itself naturally to rapid iteration and agile development methods. Their open nature affords the opportunity to rapidly prototype systems and quickly determine a clear direction prior to development work.

4 Open Source Foundation http://opensource.org/osd
5 Impact of open source in the total cost of ownership, http://eu.conecta.it/paper/Impact_open_source_in.html
6 For an extensive comparison, see the Liferay whitepaper 'Open Source vs. Closed Source'

Global Trends in Open Source Adoption

In the 2015 9th Annual Future of Open Source Survey[7] sponsored by Black Duck and North Bridge, 78 percent of companies reported that they run part or all of their operations on open source, and only 3 percent said they don't use it in any way, and over the next 2-3 years, 88 percent are expected to increase contributions to open source projects.

> **Open Source solutions can offer better value, a lower total cost of ownership (TCO) and avoid supplier lock-in.**

Everyday around the world the number of government agencies adopting open source solutions and migrating their proprietary software to more flexible and competitive open source software platforms is growing.

7 www.blackducksoftware.com/future-of-open-source

Spotlight on the United Kingdom Public Sector

The progress that the UK government has made to adopt a Digital by Default Service Standard is a key reference point for the Australian government's own "Digital Service Standard" which borrows heavily from the "UK Government Digital Service Design Manual guide on Scope of the Standard" under the "Open Government Licence v2.0." In the UK at the end of 2010, Martha Lane Fox UK businesswoman and public servant reported to the UK government:

> *Shifting 30% of government service delivery contacts to digital channels would deliver gross annual savings of more than £1.3billion, rising to £2.2billion if 50% of contacts shifted to digital.*[8]

The report called for the development of a single front end for all government services, the mandating of open API development, establishing open standards, and the creation of a single domain and single digital team to develop it – all resulting in a 'shared, agile, cost effective suite of web technologies'.

This led directly to the formation of the Government Digital Service (GDS), the development of GOV.UK, and the Digital by Default Service Standard introduced for central government services from April 2014.

In the same year as the Lane Fox report, the UK Cabinet Office report 'Open Source, Open Standards and Re-Use: Government Action Plan'[9] set out a plan for the use of Open Source in public services:

> *The Government will use open standards in its procurement specifications and require solutions to comply with open standards. The Government will support the development of open standards and specifications.*

The plan noted significant growth in public sector use of open source and that the open source market had matured significantly in the UK since 2004. They particularly noted that 'robust and sustainable enterprise class business models' were available for 'the implementation and support of open source solutions'. Further, 'large enterprises, including Government departments, have started routinely to use open source components within large, mission critical systems'.

In tandem with the licensing advantages offered, the report concludes that open source solutions can offer better value, a lower total cost of ownership (TCO) and avoid supplier lock-in.

8 'Directgov 2010 and Beyond: revolution not evolution'
9 www.gov.uk/government/publications/open-source-open-standards-and-re-use-government-action-plan

Spotlight on the United States Public Sector

In the United States the scope to use open source continues to increase. For example procurement restrictions on the use of open source technology in the U.S. House of Representatives lifted in August 2015. It became possible for members, committees, and staff to use official resources to procure open source software, to participate in open source software communities, and to contribute software code developed with taxpayer dollars to the public, under an open source license. House members and staff now have a choice. They can opt for proprietary and technology, or choose open source solutions.[10]

Another program of the United States Federal Government is the Grants.gov initiative. Under the President's Management Agenda, the office was chartered to deliver a system that provides a centralised location for grant seekers to find and apply for federal funding opportunities. Today, the Grants.gov system vets grant applications for 26 federal grant-making agencies.

300,000 completed applications are submitted to Grants.gov annually and it houses information on over 1,000 grant programs managing over $410 billion annually in Federal grant-in-aid funds. It sends over 1 million email notifications at the public's request and receives over 4 million page views weekly.

10 www.ecommercetimes.com/story/82330.html

Open Source in Australia's Public Sector

In January 2011, the Australian Federal Government released a policy requiring agencies to consider open source software for all software procurements. The Open Source Software Policy applies to any ICT procurement activity initiated after 1 March 2011.

The Open Source Software Policy requires agencies to consider open source software in relation to any approach to market to acquire software and the Policy directs agencies to comply with three core principles.

- Principle 1: Australian Government ICT procurement processes must actively and fairly consider all types of available software.
- Principle 2: Suppliers must consider all types of available software when dealing with Australian Government agencies.
- Principle 3: Australian Government agencies will actively participate in open source software communities and contribute back where appropriate.

The Federal Government's Digital Transformation Office (DTO) has also reiterated the importance of sharing source code and solutions and making them reusable where appropriate in order to: reduce costs and effort, reduce risk, and increase collaboration.

Both the New South Wales and Victorian State Governments have been very determined in their push towards a Digital strategy with Open Data Policies to drive innovation but specific policies around open source software are yet to be specified.

A Compelling Case for Open Source in Government

In the past open source has been perceived as deploying less easily than proprietary solutions. However, the emergence of enterprise level support and the growing requirement for compliance with publically approved, open standards gives open source systems the edge. Their open architecture nature offers more compliant, flexible, malleable and easily extensible solutions than proprietary systems.

However, investing in the right technology is essential. A platform that can grow and adapt with your requirements, knowledge, context and understanding is vital. It must operate to open standards and be able to evolve. Finally, and perhaps most importantly, the right platform must be able to integrate with systems already

in place without significant development cost (CRM, ERP, mail servers, etc.). An open architecture model is best suited to this. By default it is designed to be open which makes adding, upgrading and swapping components straight forward.

When the public sector has well designed processes and services built on technology that is flexible and open to innovation and re-use it will enable quick and effective co-design and co-delivery in a way that has been difficult in the past. Sharing of knowledge and experience will lead to open, agile, and robust services that are of superior quality, lower cost and can evolve with need.

An open by design approach offers an economy of scale to develop quality solutions through common effort on common problems allowing for an improvement in public services while achieving the necessary cost savings.

Ensuring a Smooth Transition to Open Source

It is important to recognise that open source products and projects fare best when developed and supported by trustworthy companies and dedicated teams. While chosen for the significant cost savings and flexibility, the more established open source vendors also offer impressive levels of support and security. This relates not only to the product itself but also to support services, resourcing, and internal processes.

With vendor-provided Enterprise Support it is possible to "bridge the gap" between open source based software and the risk management, compliance requirements, and business continuity concerns of enterprise grade deployments.

While enterprise subscription and support packages add value to the software itself by providing access to unique capabilities and features demanded by enterprise users, of equal importance is direct access to experts from the organisation that has developed the software and manufacturer-certified product patches and fixes; this provides coverage if any challenges do arise.

Open source often offers much lower initial costs and ongoing costs. It also often offers access to cheaper – and more readily available – professional services, thanks to the accessibility of product information from documentation to code.

Open source software also curbs vendor lock-in and the significant costs of purchasing additional software in the future. Open source development is marked by an adherence to standards and as such the majority of OSS products are compatible with a multitude of other products abiding by similar industry standards, both open and closed source and regardless of vendor.

This is in contrast to closed source products, where compatibility with other products may be limited to technologies from the same vendor, potentially forcing customers into costly purchases of entire product suites. Understandably, this can lead to significant increases in the total cost of a project and limits organisations from the freedom to select products based on features, preferences, and performance.

Proven Benefits of Open Source

Low TCO	• Not tied to expensive proprietary stacks • Low barrier to entry – minimal license costs, subscription-based • Quick to implement and more readily available resources • Re-use existing technologies & frameworks
Built for innovation IT compatible	• Open source community fosters innovation • Use enterprise software and skills already available in-house
Ease of integration	• Designed for integration with enterprise systems & web-based resources

About Liferay

Liferay makes software that helps to create digital experiences on web, mobile, and connected devices. Gartner has recognised Liferay as a Leader in the Magic Quadrant for Digital Experience Platforms and Liferay is proud to be the only open source solution in the Leaders Quadrant.

The Liferay Digital Experience Platform began as an open source project in 2001 and today counts a community of more than 150,000 members and more than 500,000 deployments worldwide. Companies around the world rely on Liferay technology for its rapid development capabilities, impressive scalability, proven reliability and open source savings.

Liferay has many proven implementations locally and overseas within the public sector, including the Australian Bureau of Statistics, Department of Education NSW and WA and TAFE NSW.

If you would like to find out more about Liferay DXP for the public sector please get in touch at sales-au@liferay.com or call +61 9696-1226. Alternatively, please visit www.liferay.com for more information.

Liferay makes software that helps companies create digital experiences on web, mobile and connected devices. Our platform is open source, which makes it more reliable, innovative and secure. We try to leave a positive mark on the world through business and technology. Hundreds of organizations in financial services, healthcare, government, insurance, retail, manufacturing and multiple other industries use Liferay. Visit us at liferay.com.

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