
Open source in government: creating the conditions for success

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Executive summary

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About Public Digital

Public Digital is a disruptive global consultancy that helps organisations that matter to thrive in the internet era. Public Digital advises leaders in governments and large organisations around the world on how to meet the needs of their citizens/customers through use of the internet. The shorthand for this is digital transformation: how to use the culture, technology, processes, and operating models of the internet era to improve the services they deliver to people. We help governments:

- set up transformative digital institutions
- recruit and retain people to fill vital roles within them
- implement agile, iterative, user-centric policy and service design
- assess existing technology programmes and capabilities
- understand and emulate global best practice in digital government

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About this summary

This summary was released June 2021 under a Creative Commons Attribution-ShareAlike 4.0 license, and should be cited as: Public Digital, Open source in government: creating the conditions for success, executive summary, 2021. This summary and the longer report are available at <https://public.digital/research>

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Governments globally have sought to digitise their operations and services for many years. Covid-19 has made this an imperative: countries that have been able to serve their citizens remotely have seen the benefits of their digitisation efforts; those further behind have seen the gap more acutely.

Adoption of open source software is a powerful tool to accelerate digitisation; it allows governments to share and reuse solutions across borders; to quickly experiment and pilot services without complex and expensive procurement, and then scale at a lower marginal cost. In the best cases, a global community can be created and connected through an open source software project, will share ideas and best practices, and help to deliver more sustainable and flexible services.

Open source software can also be a powerful lever for change. It can:

- enable greater digital sovereignty by helping governments to move away from contracts where they are locked-in to specific vendors for decades at a time
- support the development of local or regional digital economies
- create competition thereby bringing down prices
- grant governments greater flexibility and control over how their services are delivered.

Open source software is rightly attracting interest from governments looking to further their nations' priorities in education, health, civil registration, and financial inclusion. All administrations need to register births, verify identity, track and manage education outcomes, and share data securely between ministries. Open source software offers common solutions to common needs.

To gain a deeper understanding of governments' experiences and needs when implementing open source software we conducted 19 interviews across 4 continents. We spoke to a mixture of government decision-makers, technical experts, funders and people delivering digital services to citizens.

We synthesised their experiences, and set out an **Open Source Capability Model for Governments** (see pages 7-10). It is intended to be a self-assessment tool, assisting governments to adopt open source practices and calibrate their current policy and technical environment. We hope it will help government leaders to identify where they may need additional investment, focus, and training to increase the likelihood of using open source software successfully and sustainably.

Invest in the conditions for success

Decision-makers should understand governments' open source capabilities, using this to prioritise investment in building open source knowledge, skills, and an enabling environment.

This is especially critical for leaders who want open source software to play a major role in their government's technology strategy, or those who are planning to use major open source platforms. Our capability model can help governments see where they need to invest in skills and capacity so they can strengthen an open source software implementation.

By investing in capability, and by creating a pathway for the sustainable use of open source software, countries will receive a range of direct and indirect benefits. They will enjoy more strategic control of technology, stronger capabilities for managing a government's technology stack, and ultimately, citizens will enjoy better outcomes and services.

The decision to use open source software, like any software choice, should be made in terms of the service and strategic outcomes a government intends to achieve.

¹ This model is inspired by – and designed to complement – the Harvard Maturity Model for Digital Services, which Public Digital contributed to. Eaves (2018)

Part 2: Proposing A Maturity Model for Digital Services. Available at <https://medium.com/digitalhks/part-2-proposing-a-maturity-model-for-digital-services-9b1d429699e7>

We have made a series of recommendations for governments to consider:

1. Policy environment

Build political consensus and support for open source software adoption, to strengthen long-term sustainability.

Publish and promote a technology strategy for use across government, including clear objectives for open source software.

2. In-house skills and capabilities

Make a central official or team responsible for setting open source standards and policy, to support and guide its use in government.

Find champions and develop the government's internal open source community.

Take steps to encourage reuse within government, including finding opportunities to release publicly-funded code in the open.

3. Open source vendor ecosystem

Review procurement policies and practices to ensure they aren't inadvertently blocking open source software.

In the longer term, develop a range of appropriate procurement options for buying software and related services.

Grow and support the local ecosystem of vendors, including promoting new business and delivery models built around open source software.

4. Sustainability

Evaluate the short and long term costs of open source software projects, using early experiments and pilots to understand the implementation, maintenance and support costs of the service.

Consider and evaluate what ownership and support model will be needed to support your implementation

Contribute to the open source community: share experiences in the open, support the development of local technical expertise and contribute practically by encouraging contributions to open source projects.

Many of these recommendations are good practices for all government technology, and will benefit the quality and sustainability of digital public services in general, not just those using open source.

Refer to our longer report, “**Open source in government: creating the conditions for success**” for a full and detailed explanation of the model. We hope these recommendations and our model can be a useful tool for decision-makers who plan to implement large scale open source platforms. We also hope that the insight and advice for governments will be helpful to funders and open source software providers when working with countries to implement new and better services for citizens through open source software.

The full report is available at <https://public.digital/research>

Open Source Capability Model

Policy environment

Area	Low	Medium	High
Political leadership and legislation	<p>Zero engagement with opportunities for using open source from political leadership.</p> <p>No mention of open source software in legislation and / or legislation impedes adoption of open source.</p>	<p>Increasing interest or support for open source software dependent on the government of the moment, or one or two leaders.</p>	<p>High political interest and support across all political parties. Seen as an accepted and expected approach to take when appropriate.</p> <p>Legislation encourages - or does not prevent - the use of open source software.</p>
Government standards and policy	<p>No mention of open source in government technology strategy, procurement policy etc.</p> <p>Current policies prevent the use of open source software.</p> <p>Myths about open source software are pervasive.</p>	<p>Government standards and/or policy in place, but it has no enforcement mechanisms and is not widely followed.</p>	<p>Comprehensive open source policy, integrated in government technology strategy, supported by procurement policies and other relevant guidelines and standards. Widely accepted and followed.</p>

Open Source Capability Model

In-house skills and capabilities

Area	Low	Medium	High
Open source leadership and coordination	<p>One or two individuals champion open source. There is no succession plan if they leave the team or government.</p> <p>Little wider understanding of open source software.</p>	<p>A small team promotes new ways of working, including open source but lacks the leverage to change other parts of government.</p> <p>Open source champions have been identified in different parts of government.</p>	<p>An empowered team exists within government that works across departments to promote and support the delivery of services using open source.</p> <p>Government has an active internal open source community.</p> <p>Teams have a clear strategy for using open source software, and they understand when its use is appropriate.</p>
Technical skills or experience in implementing open source software	<p>Little to no in-house technical skills. All software has been provided through large enterprise products and contracts.</p> <p>Little experience in using open source. Open source may have been used by vendors but it is not something the government is directly aware of.</p> <p>No culture of reuse.</p>	<p>Some technical skills or leadership, perhaps in one team, but experience is limited and dependent on a few individuals. Some experience of evaluating software outcomes.</p> <p>Some open source infrastructure software, some examples of code released in a public repository.</p>	<p>In-house technical skills embedded across government. Ability to evaluate an open source solution (for example, features, funding, codebase etc).</p> <p>Have moved from one-off use of small pieces of open source infrastructure to open source platforms.</p> <p>Common practice to make source code for public services available in a public repository.</p> <p>Reuse is encouraged.</p>

Open Source Capability Model

Open source vendor ecosystem

Area	Low	Medium	High
Open source procurement policy	<p>Procurement lacks flexibility. Government can't access open source vendors.</p> <p>There's little to no transparency or openness in procurement practices.</p>	<p>Government starts to open a range of procurement options which allows access to open source vendors, including small enterprises and start-ups.</p> <p>Some limited transparency in procurement practices.</p>	<p>Government has a range of procurement options which open the market to small enterprises and start-ups, and are able to procure outcomes rather than solutions.</p> <p>Open source software procurement is highly transparent and competitive.</p>
Ecosystem of vendors (national, regional or international)	<p>There are few, if any, vendors with expertise in open source software.</p>	<p>There is a small national and/or regional ecosystem of vendors with open source expertise.</p>	<p>There is a wide ecosystem of vendors (including SMEs and large vendors) both in-country and outside depending on need.</p>

Open Source Capability Model

Sustainability			
Area	Low	Medium	High
Sustainable funding	No plan for long term funding. There is a misunderstanding of open source (for example, that it is free). Teams struggle to find funding past the initial capital to implement a new service or tool.	There is some awareness and planning to secure funding for open source software beyond the initial implementation.	There is widespread awareness and long-term planning for sustainable funding of open source software.
Ability to manage and maintain software	Little to no in-house experience in managing or maintaining software.	The government sometimes considers maintenance and management in funding bids, RFPs, hiring plans.	Government is able to identify the level of support required based on the complexity of the software implementation. Have the capacity to develop open source software that they are the primary maintainer for with a dedicated team to support long term.
Engagement with the global open source software community	Little to no awareness of the global open source software community.	Aware and beginning to engage with the global open source software community.	Government is working to be a “good citizen” within the open source software community, making it easy for civil servants to contribute. Government is able to evidence its contributions, and secure funding for important open source projects, etc.

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