DG DIGIT

Unit.D2 (Interoperability Unit)

Open Source Software Country Intelligence Report

United Kingdom

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WAVESTONE

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Executive Summary

The UK government has a strong history of promoting the use of open source software (OSS), first establishing relevant policies about 10 years ago. The Government Digital Service (GDS), a part of the UK Government's Cabinet Office, maintains open standards chosen for use in government and requires equal consideration to be given to OSS and proprietary software in procurement. Point 3 of the UK government's Technology Code of Practice necessitates that public administrations 'be open and use open'. The Crown Commercial Service (CCS), an executive agency sponsored by the Cabinet Office, manages and implements the UK Government's OSS 'GOV.UK' policy.

The UK has no specific legislative framework directed at OSS; however, it does maintain a policy position calling for a level playing field for OSS in procurement.

The G-Cloud procurement system (which covers a number of digital services, including both proprietary and open source) was introduced to the UK in 2012 following collaboration with an industry Cabinet Office Committee. The latest iteration is G-Cloud 12, which was released in early 2020. The devolved government in Scotland has its own procurement regime.

The UK government hosts a GitHub repository[1] of its OSS content and contribution guidelines[2]. It has launched several OSS initiatives, including the NHSX COVID-19 App described below. This initiative is just one example of what appears to be a thriving open source software scene in the UK.

Actors

This section presents the key governmental bodies that are responsible for setting OSS policies and the main strategic players that work together with the government at all levels to raise awareness on OSS.

Policy maker

- The Government Digital Service[3] is part of the Cabinet Office of the UK Government. It is the central team in the Cabinet Office in control of the overall user experience across all digital channels and reports to Secretary of State for Culture Media and Sport, Oliver Dowden[4]. The team's responsibilities include setting and enforcing standards for digital services, building platforms and services, supporting the use of emerging technologies in the public sector and

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[1] https://github.com/alphagov
[2] https://gds-operations.github.io/
[3] https://www.gov.uk/government/organisations/government-digital-service/about
[4] As reported in June 2020.

leading the Digital, Data and Technology function for the government. The Government Digital Service has published various guiding documents on OSS and its use.

- The Crown Commercial Service (CCS)[5] is an executive agency sponsored by the Cabinet Office. It manages and implements the UK Government's OSS 'GOV.UK' policy, and brings together policy, advice and direct buying, with the aim of providing commercial services to the public sector and saving money for the taxpayer, following the principle 'be open and use open'.

Strategic players

- OpenUK[6], a not-for-profit industry advocacy organisation, promotes the use of open technologies, including OSS, open source hardware, and open data. Its vision includes establishing UK leadership in Open technology and normalising its use for public services, education and academia, businesses, and individuals in the UK. OpenUK's Future Leaders Group is currently[7] undertaking a review of procurement terms and processes across the UK public sector, including the CCS, GDS and NHS. The group also provides online weekly training on OSS-related topics for its Future Leaders Group[8].

- The British Computer Society, Open Source Specialist Group[9] (BCS), aims to inform the wider audience about OSS and its implications. It also acts as a centre of expertise on OSS use. The BCS regularly organises talks, events, and meetups on the topic of OSS, including the use of OSS in the UK government[10].

Policy and legal framework

This section summarises the main OSS-related policies and legal acts of the last ten years, including the first known milestone in this domain. The list is presented in a chronological order, starting from the most recent milestone.

- As part of the Government Transformation Strategy 2017-2020[11] and the Local Digital Declaration[12], public administrations are required to demonstrate that they have considered the use of OSS solutions and the open publication of their code in order to comply with Point 3 of the Technology Code of Practice[13].

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[5]   https://www.crowncommercial.gov.uk/
[6]   https://openuk.uk/
[7]   As reported in June 2020.
[8]   https://openuk.uk/events/
[9]   https://ossg.bcs.org/
[10] https://ossg.bcs.org/blog/event/open-source-in-government/
[11] https://www.gov.uk/government/publications/government-transformation-strategy-2017-to-2020/government-transformation-strategy
[12] https://localdigital.gov.uk/declaration/
[13] https://www.gov.uk/government/publications/technology-code-of-practice/technology-code-of-practice

- The Open Standards Principles[14] policy document, published by the UK Government in 2012, aims to boost the use of open standards by the country's public administrations. The policy document outlines principles for the selection and specification of open standards that can be implemented in both open source and proprietary software solutions.

- The Government ICT Strategy[15], introduced by the Cabinet Office in 2011, aims to ensure the creation of a level playing field for OSS and the procurement of OSS solutions. The government established various groups that "aim[ed] to educate, promote and facilitate the technical and cultural change needed to increase the use of open source across government". These groups included the Open Source Implementation Group, the System Integrator Forum, and the Open Source Advisory Panel, but they are no longer active.[16]

- In 2011, the Cabinet Office, Efficiency and Reform Group, and the CCS jointly published a document on the procurement of open source IT.[17] The document states that, when purchasing ICT solutions, government departments should ensure that OSS is fairly considered.

- In 2010, the former Labour government published an open source strategy for government.[18] The strategy detailed the actions taken by the government in order to provide a level playing field between open source and proprietary software. Key objectives of the strategy included, amongst others, strengthening the skills of public servants and suppliers in OSS, as well as ensuring that open source, sharing, reuse and collaborative development are embedded in the culture of the government.

Open source software initiatives

This section presents an overview of some OSS-related initiatives in the United Kingdom. The list is presented in a chronological order, starting from the most recent initiative.

- NHSX, 2020[19]: NHSX lead in open source in the UK public sector and have a clear open sourcing policy and a Director of Open. They developed the UK's track and trace app with their first version, on a centralised database basis, testing rapidly before moving to a combined work done in utilising their front-end app with work done by others on similar apps. This demonstrates the UK public sector's ability to follow a 'fail fast' philosophy in software development, and pivot as necessary to deliver successful projects.

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14 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/78892/Open-Standards-Principles-FI-NAL.pdf

15 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/85968/uk-government-government-ict-strategy_0.pdf

16 https://www.whatdotheyknow.com/request/72114/response/189441/attach/3/Annex%20A%20Open%20Source%20Strategy%20Over-view.pdf?cookie_passthrough=1

17 https://www.gov.uk/government/publications/procurement-policy-note-8-11-procurement-of-open-source

18 https://www.gov.uk/government/publications/open-source-open-standards-and-re-use-government-action-plan

19 https://www.nhsx.nhs.uk/

- Local Government Drupal initiative, 2020[20]: A number of councils, including Croydon and Brighton, have developed a framework in accordance with the Local Digital Declaration to facilitate code sharing between public sector bodies.

- NELSON programme, 2019[21]: The UK's naval force, the Royal Navy, launched the NELSON programme as part of its digital transformation strategy. The programme uses Artificial Intelligence (AI) and data science to build a component to enable better decision-making procedures as part of the NELSON Standards Toolkit.[22] The toolkit, published on GitHub, features numerous OSS components and uses a range of open source technologies.

- Aperta, 2018[23]: Aperta is a web application platform for workflows to evaluate and review scientific outputs, especially papers. It is meant to handle the complete lifecycle of a paper, including submission, peer review, shipping of the manuscript, and production. Aperta's source code is available on GitHub.

- Apperta Foundation[24]: the Apperta Foundation was established in 2015 with the aim of promoting open systems and open standards in the context of clinical care. It is supported by NHS England, NHS Digital and others, and acts as the custodian of a number of projects, including Code4Health (see below).

- Migration to Open Document Format, 2018: The government established a policy to use Open Document Format (ODF) in various organisations.[25] The reasons for this include facilitating interoperability, lowering costs, lowering the risk of cyber-attacks, and making it easier to share and edit documents across government bodies. The Crown Commercial Service[26] and the Ministry of Housing, Communities & Local Government[27] have shared their strategy and their current use of OSS.

- HMRC Developer Hub, 2018[28]: The tax agency of the UK, HRMC, has started to switch to OSS solutions to improve their IT and reduce costs. In 2018, they launched the HMRC Developer Hub, which helps software developers to integrate their software with HMRC's APIs.

- NHS's Code4Health project, 2018[29]: The project is bringing together healthcare providers, developers and supporters to build OSS solutions. The project has 30 communities, covering many aspects of healthcare. Examples include Open Odonto[30], an OSS solution for dentistry,

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[20] https://croydon.digital/2019/07/15/croydon-council-is-sharing-a-publishing-platform-with-brighton-hove/
[21] https://joinup.ec.europa.eu/collection/open-source-observatory-osor/news/open-source-royal-navy
[22] https://docs.royalnavy.io/
[23] https://github.com/Aperta-project/Aperta/wiki
[24] https://apperta.org/
[25] https://www.gov.uk/guidance/using-open-document-formats-odf-in-your-organisation
[26] https://www.gov.uk/government/publications/the-crown-commercial-service-and-open-format-documents
[27] https://www.gov.uk/government/publications/open-source-software
[28] https://hmrcdigital.blog.gov.uk/category/open-source/
[29] https://code4health.org/
[30] http://openodonto.org/

openEobs[31], a project that helps clinicians and managers ensure patient safety, safer wards and safer hospitals, and OPENeP[32], a solution aiming to deliver a suite of medicines management applications.

- Healthwatch organisations, 2014[33]: England's Healthwatch organisation uses CiCRM, an open source solution for Customer Relationship Management (CRM). Healthwatch is a nationwide group of local-authority-financed operations. Using OSS allows them to customise and adapt the software to their own organisational requirements.

- PatientView, 2014[34]: PatientView is a web-based solution written in Java that displays laboratory results, medicinal information, explanations of test results, diagnosis and treatment. It is used by many of the UK's renal clinics and their patients.

- Spine2, 2013[35]: The NHS built a second-generation central database, Spine2, using open source components. Spine2 supports the IT infrastructure for health and social care in England, connecting 23,000 healthcare IT systems.

- G-Cloud procurement system introduced to the UK in 2012 following collaboration with an industry Cabinet Office Committee. The latest iteration is G-Cloud 12, which was released in early 2020. It is not specifically aimed at OSS solutions, but there are a number of OSS-based solutions listed on it.

- GOV.UK, 2012[36]: The UK Government's central services and information website (GOV.UK) was unveiled in 2012. It is built completely using open source technologies and partially on OSS.

- OpenEyes, 2011[37]: In 2011, an open source electronic patient record (EPR) system was rolled out in London's Moorfields Eye Hospital. The EPR helps deliver data-driven patient care. OpenEyes, the OSS itself, is owned by the community and is customisable to suit specific needs.

- Open source mailing system in Welsh schools, 2007[38]: Schools in Wales have opted for an open source email system since 2007. The Open Source Software is "secure, customisable and scalable". There are three different versions which vary according to age groups, starting with a simple interface for pupils in primary school. In addition, the Maesydderwen School runs the OSS solution, Debian GNU/Linux[39], on its servers.

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[31]   https://github.com/openeobs/openeobs
[32]   https://apperta.org/news/2017/09/19/NHS-Trust-ePMA.html
[33]   https://www.healthwatch.co.uk/
[34]   https://www.patientview.org/#/
[35]   https://digital.nhs.uk/services/spine
[36]   https://gds.blog.gov.uk/2012/10/12/coding-in-the-open/
[37]   https://openeyes.org.uk/index.html
[38]   https://www.siriusopensource.com/press-releases/welsh-schools-open-source-email-goes-live
[39]   https://joinup.ec.europa.eu/collection/open-source-observatory-osor/news/welsh-school-switches-open

- Bristol City Council, 2005[40]: Bristol City Council has been experimenting with OSS solutions since 2005. At the time, the Council switched to StarOffice/OpenOffice and a year later adopted the Open Document Format (ODF). Although it reverted to Microsoft Office in 2010 due to the lack of standards support, the Council nevertheless retained the ability to create and collaborate on ODF. LibreOffice is currently used alongside Microsoft.

- GCHQ on GitHub[41]: The British intelligence agency, GCHQ (Government Communications Headquarters), opened a GitHub account. GCHQ is using GitHub to publish Gaffer, a large-scale graph database system.

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[40]   http://www.bristolwireless.net/blog/2015/03/13/open-standards-at-bristol-city-council/
[41]   https://github.com/gchq