OpenUK reveals that the UK is a world leader in open source software

ANALYST OPINION | 28 JUL 2023 | MICHAEL AZOFF

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Omdia view

Summary

OpenUK is a not-for-profit company founded in 2018 to support open technology within the UK. By open technology, the organization means open source software (OSS), open source hardware, open data, and most recently in 2023, open artificial intelligence (AI). It has published research that shows the UK is a world leader in OSS, highlighting the sheer (and surprising) scale of UK OSS activity. Given the exposure by OpenUK, the UK government could benefit from exploiting this national asset and making greater efforts to support the industry.

UK leads the world in open source software

OpenUK began publishing its research findings in 2021, and it has published three reports so far this year (see *Further reading* for links):

- A review of UK open technology in 2022 (and the beginning of 2023): *State of Open: The UK in 2023, Phase One: A Year in Review*

- A report on the economics of OSS: *State of Open: The UK in 2023, Phase Two, Part 1: Show us the Money – The Economics of Open Source Software*

- A report on open AI in the UK: *State of Open: The UK in 2023, Phase Two, Part 2: Show us the Money – AI Openness*

The *Phase One* report shows that the UK leads the world in terms of the percentage of the population that has a GitHub account (see **Figure 1**). GitHub is the largest repository of OSS (77%; others are GitLab at 11% and self-hosted at 12%), and hence its accounts act as a proxy for OSS software activity (note: all numbers quoted from OpenUK's *Phase One* report).

Figure 1: Percentage of population that have a GitHub account, selected countries

Country	Total number of 2021 accounts (thousands)	Increase to 2022 (in thousands)	Total number of 2022 accounts (in thousands)	Percentage of population that has a Github account
China	7,555	1,200	8,755	0.001%
India	7,211	2,500	9,711	4.07% (2021)
USA	13,552	No data	No data	1.53%
Brazil	2,369	924	3,293	1.79%
Russian Federation	1,981	582	2,564	2.84%
Germany	1,929	426	2,355	
France	1,541	373	1,914	2.82%
UK	2,277	488	2,765	4.1%

Source: OpenUK (data sources

The UK is not generally known as a major actor in OSS, although it is acknowledged that London is the leading technology city in the European region. A key reason why the UK does not show up in OSS business assessments is that the typical venture capital investing in UK OSS startups is based in the US. Successful startups are then often incorporated in Delaware (US), so the UK origins of such businesses are hidden. In terms of OSS contribution to UK GDP, using European Commission (EC) report methodology, OpenUK finds the UK gains £43bn per annum (pa). A surprising statistic by OpenUK is that 69% of UK small and medium-sized enterprises (SMEs) contribute to OSS, but this supports the positioning of the UK as a world leader in OSS.

With financial services (FS) contributing £174bn in 2021 (UK Parliament Report, September 1, 2022), the contribution of OSS to GDP is 25% of the FS amount. Given how much the UK government does to promote UK FS, the question is: What more can the government do to support OSS? Many possibilities come to mind. For example, the government could start by creating vocational educational options for students who may prefer an industry career over an academic one. Through this channel, computer programming and high technology could be addressed, raising the UK's role in technology to an even higher status than present. There is a mistaken view that computer science degrees address this function, but graduates from these courses are not industry ready; hence, the emphasis on vocational education over academic education for those who would like such a path. Currently, the government has appointed a minister for technology and digital economy—this is a step forward from a previous minister for culture, media, and technology.

OpenUK is currently working with Strathclyde University to offer a skill-based massive open online course (MOOC) on the business of OSS, which it says will help people understand what is involved in creating and running a sustainable open source business. The organization says it is looking to mentor early-stage developers who are in education or right at the start of their careers in contributing to OSS communities.

How to tame AI

OpenUK is not concerned with just software, but wider technology and the rise of AI have brought it under the organization's radar. There are legitimate concerns about bias, fairness, and preventing the unethical use of AI. As such, AI regulations are in the works, and this is welcome because simply doing nothing will not help users or the AI industry.

While the hysteria generated by fears of an AI apocalypse generates a lot of media noise, it is a relief to learn that political circles in the UK, EU, and US have a more sober approach to regulating the AI that exists today, rather than a hypothetical AI of a possible future. This approach is to focus on reducing harm, maintaining openness for public transparency, and prohibiting illegal activity and the generation of misinformation.

OpenUK's position on regulation is that it is necessary and inevitable, but the organization does not believe rules-based regulation is the right approach for this market because it could strangle startups before they can reach maturity. Furthermore, legislation that is difficult for businesses to comply with and is not flexible enough to deal with the evolution of AI technology will have that strangulation effect. With the EU AI Act in progress, it is Omdia's opinion that any criticism of the act should be aired to highlight what OpenUK is not happy with and, just as importantly, what the organization suggests amending it with.

OpenUK's Open AI initiative

OpenUK's Open AI initiative is based on the belief that an open approach to AI is preferable to a closed one. For example, the organization argues that having a small number of vendors with the resources to train the latest large models in AI with billions of parameters (read as connections between neurons)—but who then keep the technology hidden from users—is not helpful for society.

There is an open access movement in academic research, with papers published in preview on online archives and open to all. In particular, the AI community, which includes leading vendors in the field and academic institutions, has published code as well as research papers. This has accelerated progress in AI, so there is already a collaborative culture within the AI community. Other examples of open AI exist:

- Hugging Face hosts open source generative AI and large language model (LLM) applications on its cloud.

- Anthropic was created as a public benefit corporation (PBC) by former members of OpenAI who wanted to create an organization that had built-in ethical and safe AI systems as a core mission of the company.

OpenUK talks of a flexible, principles-based approach to AI regulation, and it is seeing the UK's Office of AI take such a legislative process. Omdia's analysts look forward to hearing more about this.

Open source software: Why it works

You work hard creating a "world beating" software application and then give it away for free. OSS can seem counterintuitive and baffling to the outsider new to the concept. You do not have to give it away for free, but many do. To understand this concept, it should be noted that

- OSS is often free of cost but does not have to be; there can be a price (not common, sometimes a donation is requested).

- There are many licenses available with which you can constrain, if you wish, what people do with your OSS. For example, you could prevent the development of a commercial product created from it or require that any software that includes your code is also made available as OSS.

- Software is "more like salad and less like gold," which means software dates fairly quickly for all manner of reasons. These include bug discovery, maintenance, and (even with the most perfect software) changes in the surrounding environment with which it communicates that impact the application and require some adjustments. There is a price associated with change, so the OSS has an ownership cost. Many OSS suppliers provide a paid support service—this is the most common business model supporting free OSS.

There are two additional crucial aspects to OSS. First, there is the cultural aspect of creating a work collaboratively. OSS projects invite participants openly from any organization or part of the world. This brings together many minds to produce a work, leading to a better product, and educates the participants who learn from each other.

The second aspect is that code transparency has many helpful dimensions:

- Makes it easier to discover bugs and improves the security of the application.

- Enables integration with other applications in a way that is not possible with closed software.

- Minimizes risk because if an OSS supplier disappears, a user organization can still maintain the software; this is not possible with closed software.

- Ensures there is no lock-in to a vendor.

Another benefit for enterprises choosing to work with OSS is that a ready community exists from which they can recruit. And this community can ease the major issue of hiring skills in technology.

Appendix

Further reading

State of Open: The UK in 2023, Phase One: A Year in Review, OpenUK (April 2023)

State of Open: The UK in 2023, Phase Two, Part 1: Show us the Money – The Economics of Open Source Software, OpenUK (July 2023)

State of Open: The UK in 2023, Phase Two, Part 2: Show us the Money – AI Openness, OpenUK (July 2023)

Reynold Xin, Wes McKinney, Alan Gates, and Chris McCubbin, *It Takes a Community: The Open-source Challenge: A discussion with Reynold Xin, Wes McKinney, Alan Gates, and Chris McCubbin*, ACM Queue Case Study (September–October 2021)

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