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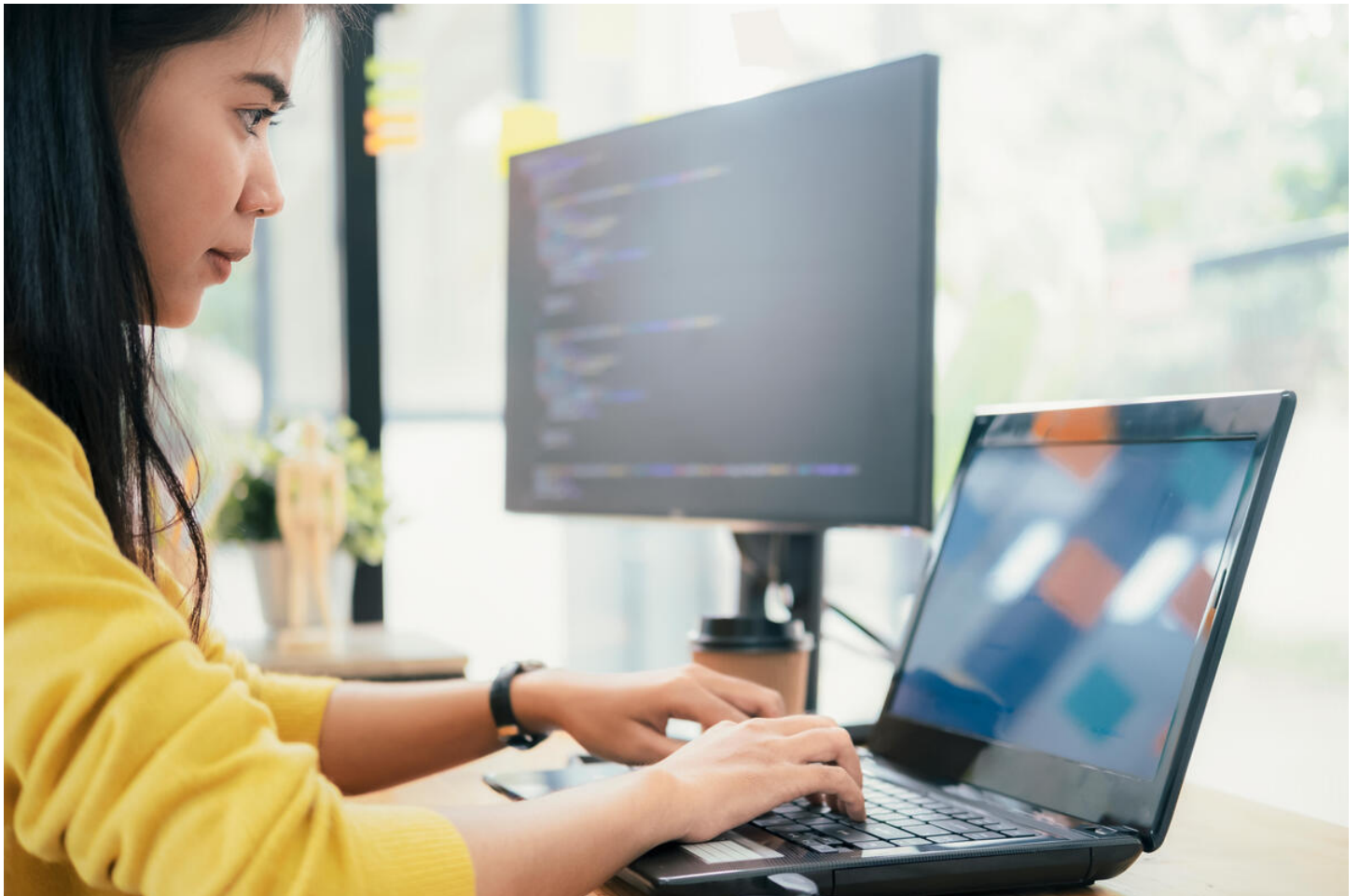📄 **MUST READ:** Programming languages: Python's new developer in residence and their 'make-it-or-break-it' role

Open-source software: Is it about free, or is it about freedom?

Open-source developers could change the balance of power in tech, if they want to seize the opportunity.

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By Daphne Leprince-Ringuet | September 8, 2021 -- 11:41 GMT (12:41 BST) | Topic: Open Source

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Open source, and specifically open-source software, refers to code that is designed to be publicly available, meaning that anyone can see, modify and distribute the code as they see fit.

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Open-source software is not only a global pool of free code available for creative programmers to build upon: take it to the geo-political level, and it is also a tool that countries can leverage to achieve independence from the growing monopoly of foreign tech giants.

That's according to a new report commissioned by the EU (https://digital-strategy.ec.europa.eu/en/library/study-about-impact-open-source-software-and-hardware-technological-independence-competitiveness-and) and carried out by non-profit organization OpenForum Europe, which found that the impact that open source could have on the bloc's digital independence is such that the technology can be seen as a "public good".

OPEN SOURCE

Linux Foundation announces new open-source software signing service (https://www.zdnet.com/article/linux-foundation-announces-new-open-source-software-signing-service/)

Top open source, tech-smart, board-ready women executives (https://www.zdnet.com/article/top-open-source-tech-smart-board-ready-women-executives/)

Red Hat's survey results on the state of enterprise open-source software (https://www.zdnet.com/article/red-hats-survey-results-on-the-state-of-enterprise-open-source-software/)

The open-source RISC-V is prompting chip technology breakthroughs (ZDNet YouTube) (https://www.youtube.com/watch?v=c8F7v1YnVeI)

Top five open source Linux server distributions (TechRepublic) (https://www.techrepublic.com/resource-library/whitepapers/top-five-open-source-linux-server-distributions/?ftag=CMG-01-10aaa1b)

Digital independence, autonomy or technological sovereignty: the concept has taken on many names, but always refers to a long-standing goal of EU leaders. It consists of developing technology in line with standards defined by European institutions themselves — and often comes with imperatives such as transparency, trustworthiness or the protection of privacy.

SEE: Linux turns 30: Linus Torvalds on his "just a hobby" operating system

(https://www.zdnet.com/article/linus-torvalds-on-linuxs-30th-birthday/)

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"It's important for Europe to be able to have some power over their jurisdiction and around the goals it sets for privacy and other things like that," Sachiko Muto, the CEO of OpenForum Europe, tells ZDNet. "Open source is part of being able to deliver on innovation and at the same time retain control to protect those goals."

Open source, and specifically open-source software, refers to code that is designed to be publicly available, meaning that anyone can see, modify and distribute the code as they see fit.

Contrary to buying an off-the-shelf service, building a service on top of open-source software provides better access to the source code, meaning that it is easier to keep control of and audit the technology. In short, everything happens in the open, falling in line with principles of transparency that are so strongly defended by EU leaders.

This is important as critical services — and particularly public services such as healthcare — digitize at pace in Europe. At the same time, a handful of tech giants are increasingly taking on the bulk of this digitization; the fear is that this means external service providers can dictate their own terms.

Calls for digital sovereignty have become louder in Europe in recent years as those two trends converged and vendor lock-in became top of mind. "Open source has the potential to change the balance of power," says Muto. "It's not necessarily saying that the big companies are bad, but it's about taking back control. The user should have control regardless of where the company comes from."

One example is cloud services, which are dominated by Amazon's AWS, Microsoft's Azure and Google Cloud. The EU's near-total reliance on the trio has been problematic for a number of years: for example, an EU privacy watchdog recently launched an investigation to examine whether the bloc's top institutions and agencies were able to effectively protect citizens' personal information when using AWS and Azure (https://www.zdnet.com/article/gdpr-eu-privacy-watchdog-probing-the-use-of-aws-and-azure-cloud-services/).

Even outside of the EU, the dominance of US-based hyperscalers is raising concerns. The Bank of England recently admitted that financial institutions' over-reliance on a handful of cloud providers for key banking services came with a degree of risk (https://www.zdnet.com/article/banks-now-rely-on-a-few-cloud-computing-giants-thats-creating-some-unexpected-new-risks/) — because those providers have the power to dictate their own terms, sometimes a[Cookie Settings]ansparency.

According to OpenForum Europe's new report, open-source software has the potential to change this, because building technology on top of publicly available source code gives adopters complete control of the end service. Users are not subjected to the terms and conditions of one owner of proprietary software, who could easily change the underlying technology, increase prices or even withdraw the service from the market altogether.

For example, UK-based startup Element has created an open-source project named Matrix that [provides developers with the infrastructure, tools and protocols to build their own communication platforms](https://www.zdnet.com/article/open-source-is-behind-this-massive-messaging-and-collaboration-project-for-500000-people/).

The concept has found favour in the EU: the French government is now using a Matrix-based app called Tchap for internal communications, and the startup recently signed a contract with the German education system to provide new collaboration tools in the states of Schlesweig-Holstein and Hamburg.

SEE: [Python certification deal: Learn to be a Python programmer for just $30](https://www.zdnet.com/article/python-certification-deal-learn-to-be-a-python-programmer-for-just-30/)

[(https://www.zdnet.com/article/python-certification-deal-learn-to-be-a-python-programmer-for-just-30/)](https://www.zdnet.com/article/python-certification-deal-learn-to-be-a-python-programmer-for-just-30/)

European countries, therefore, are increasingly looking at open-source technologies to build key digital infrastructure. The bloc recently kicked off work for a homegrown cloud-computing platform called GAIA-X, for instance – a marketplace of cloud suppliers that [all have to adhere to certain European principles](https://www.zdnet.com/article/how-much-are-open-)

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source-developers-really-worth-hundreds-of-billions-of-dollars-say-economists/), among which openness and transparency are key.

And according to the new report, there is no want of open-source developers in the bloc. In 2018, found OpenForum Europe, there were 260,000 individual contributors to open-source projects in the EU, which represents 8% of employees in the computer programming sector. Together, they contributed 30 million commits in that year, which equals almost €1 billion ($1.18 billion) in investment.

Still, argues Muto, while open-source technologies are widely adopted by the private sector in other countries like the US, where deep-pocketed companies like Google or Microsoft can fund a thriving ecosystem, Europe is in contrast seriously lagging behind.

"The open-source movement in Europe has suffered from being seen as the free version of software. The feeling was that open source only enabled cost saving," says Muto.

But open-source technologies' benefits go much further than that. It's not only about digital sovereignty: by encouraging developers to re-purpose code for different use cases, open-source software fosters innovation. Ultimately, bouncing off each other's ideas in a shared community improves the quality of services that are built, and their impact on the economy.

OpenForum Europe's economists even carried out an estimate of the economic impact of open-source technologies. In 2018, says the report, the EU's 30 million contributions to open source resulted in an impact of between €65 and €95 billion ($76-$112 billion) on the European economy (https://www.zdnet.com/article/how-much-are-open-source-developers-really-worth-hundreds-of-billions-of-dollars-say-economists/). Increasing contributions by only 10%, said the economists, could generate up to 600 additional ICT startups in the bloc.

Amanda Brock, the CEO of OpenUK, an organization that promotes open technologies, and who did not participate in the report, says that the research only confirms that open source is the way to go when building digital infrastructure.

"There is an inevitability that goes with open source and infrastructure today," Brock tells ZDNet, pointing to the UK's National Health Service's latest digital strategy, which places open data and open-source software at the fore (https://www.gov.uk/government/publications/data-saves-lives-reshaping-health-and-social-care-with-data-draft/data-saves-lives-reshaping-health-and-social-care-with-data-draft), as a way to improve transparency and avoid vendor lock-in.

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SEE: [Linux turns 30: Linus Torvalds on his "just a hobby" operating system](https://www.zdnet.com/article/linus-torvalds-on-linuxs-30th-birthday/)

Potential isn't lacking in Europe, continues Brock, but the bloc needs to invest more aggressively to raise awareness of what open source can do. "Part of this is skills," says Brock. "A lot of skills around open-source development are in the Bay Area. It's almost impossible to find a start-up in the Bay Area that's not built on open source now. There hasn't been enough focus across Europe on those kind of skills."

Brock aligns with OpenForum Europe's report, which recommends, among other things, providing more funding for open-source projects and startups to create a culture of openness.

Businesses and government organizations alike need to realize, therefore, that they don't have to rely on off-the-shelf services that they hold no control over. Initiatives like GAIA-X or Matrix are only examples of what can be done to create a future where technology is open.

DEVELOPER

The most popular programming languages and where to learn them [(https://www.zdnet.com/article/best-programming-language/)](https://www.zdnet.com/article/best-programming-language/)

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What is low-code and no-code? A guide to development platforms [(https://www.zdnet.com/article/special-report-what-is-low-code-no-code-a-guide-to-development-platforms/)](https://www.zdnet.com/article/special-report-what-is-low-code-no-code-a-guide-to-development-platforms/)

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