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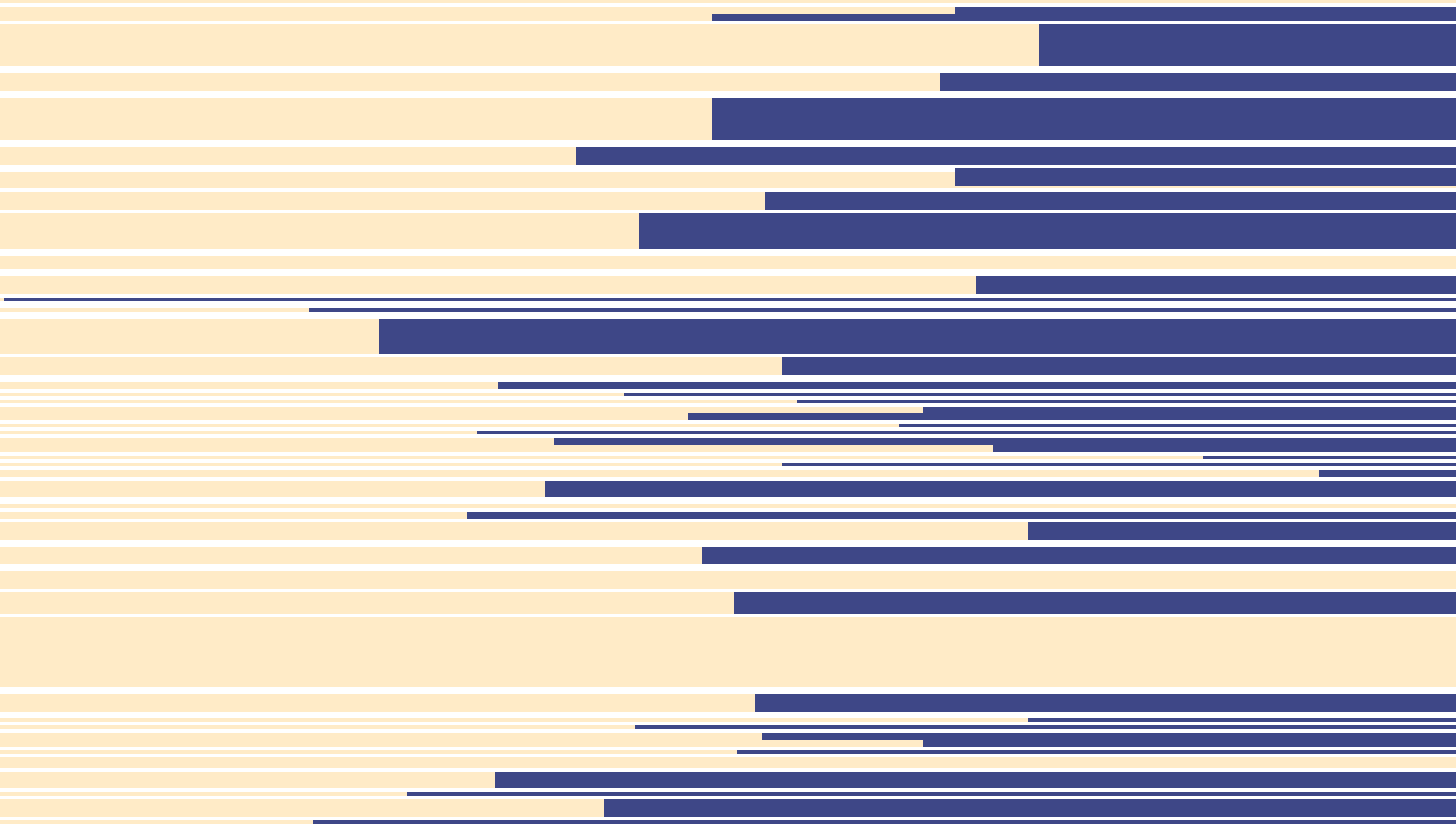
DIGITAL COMMONS

Sovereignty & Resilient Ecosystems



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Explainer #5

This document is the fifth one in a series of accessible Explainers about the Digital Commons. The Explainers series is part of our Digital Commons Transition Collaboratory, where we are building an active community of engaged experts, public officials and practitioners and explore a shared understanding of the Digital Commons and the role of government. Want to join the community? Sign up for the mailing list at digitalcommons@commonsnetwork.org and you will receive our monthly Digital Commons newsletter with updates about what happens in the Transition Collaboratory, events and announcements, and upcoming Explainers and other knowledge resources.

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Sovereignty & Resilient Ecosystems

The resilience of and sovereignty over digital infrastructure is under great pressure in the Netherlands and Europe. This also puts the economy and democracy at risk. These vulnerabilities are due to increasing cyber threats and rising geopolitical tensions, but mainly to a high dependence on digital infrastructure that is largely in the hands of a small number of dominant foreign market players. The practice and governance of Digital Commons offer a solution here.

Characteristics of Digital Commons include collective ownership (explainer #2), democratic governance (explainer #3), collaborative culture (#4) and diversity (this explainer). These characteristics contribute to the resilience of digital ecosystems, and to sovereignty over digital infrastructure.

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Digital commons are rooted in **diverse communities** at local, national or supranational levels - mostly in the civil domain, sometimes partly in the private or public domain. Importantly, that diversity is reflected in the technologies they develop and manage. A diverse and decentralized digital infrastructure is less dependent on dominant players and technologies and reduces the risk of system failure. The lower the number of *single points of failure*, the less likely a weak link will take down the entire network. The recent CrowdStrike failure in the Windows operating system clearly showed the risks of digital homogeneity and dependence on a few major platforms.

Diversity and decentrality go hand in hand with interoperability. It means connecting different communities and technologies in a digital ecosystem, supported by open standards and protocols. It has long been proven that different (and competitive) technologies and networks can cooperate or “interoperate” with each other in a federated network, think of e-mail or mobile telephony.

Digital Commons are not black boxes. Their openness and transparency ensure that we know how technology works, and that everyone can watch and contribute solutions. Diversity and transparency together, backed by interoperability, are the mainstays of a **resilient ecosystem.**

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Proton: independent and secure e-mail from Switzerland

Proton is a company, community and foundation all in one. It started in 2015 with a successful crowd-funding campaign with over 10,000 donors who wanted to contribute to the launch of a privacy-first email provider. Today, in addition to Proton Mail, there is also Proton VPN, Calendar, Wallet, Drive and Password Manager.

All of Proton's products are encrypted with high-quality encryption standards and are developed open source, including the standards themselves. Proton has no access to personal data and does not sell advertisements. The main shareholder of the Proton company is the Proton foundation; both are registered in Switzerland. This organizational model allows for profitable activities, but ensures that social goals are always at the forefront of major decisions.

Proton guarantees the digital sovereignty of its users through full transparency of Proton technology, through high privacy standards and through the communal roots of the project.

The resilience of the digital ecosystem depends on the diversity and transparency of the network, not just on the practices of a single player like Proton. Therefore, it is good to look not only at Proton Mail, but also, for example, at other European open source mail clients such as Germany's Posteo, Norway's Runbox or the Netherlands-based StartMail.

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Self-Determination and Digital Sovereignty

Self-organization, collective ownership and democratic practice, where users, producers and the various communities to which they belong, shape the design, development or management of a particular digital tool or platform, ensures a degree of self-determination for the users and community around the technology. Self-determination lays the foundation for digital sovereignty.

Sovereignty originally refers to states having complete control over their territory and thus exercising a certain control over their citizens. Digital sovereignty today is mostly associated with a country with a strong tech industry and large domestic tech companies, without great dependence on foreign (market) parties.

This view of digital sovereignty has major limitations. Domestic companies seeking capital investment typically easily give up (part of their) ownership to foreign investors and shareholders, who may be located in the jurisdictions of hostile or authoritarian governments. Without changing the organizational model and without collective and democratic practice, a strong domestic tech industry will not lead to long-term digital sovereignty of a country or community.

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Digital sovereignty also depends on the ease of switching from one technology to another and, thus, on the degree of interoperability and data portability between those technologies. It can even apply to an individual organization or person, in which case it refers to his or her control over personal data, to the ability to see, understand and help shape technologies or networks, and to privacy.

Digital self-determination and sovereignty are also strongly related to the term strategic autonomy, which emphasizes the strategic capacity of a country or government to determine and control the vital components of its digital infrastructure, and minimize risky dependencies on other foreign parties (e.g., dominant platforms, authoritarian governments).

Autonomy in this context, of course, does not mean independence. For both governments and Digital Commons, dependencies in the digital domain are inevitable and cooperation, especially in Europe, is often the most effective and sustainable strategy.

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Gaia-X: Europe's cloud made possible by Silicon Valley

Gaia-X is a 2019 initiative by former French and German Economy Ministers Bruno le Mair and Peter Altmaier to develop a secure, federated data infrastructure for Europe. The initiative could thereby reduce dependence on companies such as Google, Amazon and Microsoft.

Users - companies, governments and individuals - of the "European cloud" would retain control over access to and use of their data, ensuring European "data sovereignty". The first implementation of Gaia-X began in early 2022 with the launch of the first data spaces such as the Mobility Data Space.

There has been much criticism of the project. Major European telecom companies have had a lot of influence from the start and in 2021 Google, Microsoft, IBM and Amazon - and even Huawei and Alibaba as "conference sponsors" - also become partners. This degree of foreign influence and corporate capture poses risks to Gaia X's original mission, putting digital sovereignty and self-determination, two core principles of the project, at risk.

A European ecosystem of European cloud solutions such as OpenNebula and Rapid Space already exists and is growing every day, but has so far received little attention in the Gaia-X project. Scalaway, a French cloud provider and partner of NextCloud, left the project for the aforementioned foreign interference.

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Digital Public Infrastructure

Digital Commons are inherently associated with self-determination. This aligns them with fundamental democratic and public values such as participation, transparency, accountability, and political and economic equality. This makes Digital Commons ideally suited as part of a *digital public infrastructure.*

Digital infrastructure differs greatly from physical infrastructure in terms of cost, planning and flexibility. Planning and building a new bridge, for example, easily takes 20 years. In contrast, MySQL, the second most popular (and open source available) database in the world, was developed in less than two years. Developing a physical infrastructure must be done with no mistakes, whereas a digital technology can easily be modified, debugged or simply replaced.

European countries are, for the most part, not digitally sovereign but dependent on foreign players. They do not, in other words, own or control a European or national digital infrastructure: a basic infrastructure of vital technologies such as communication networks, platforms, storage and identity services, and underlying protocols and standards.

To be considered public, digital infrastructure, and the technologies it consists of, must be transparent and open, widely (if not universally) accessible, and primarily under common or public management.

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Robust Digital Public Infrastructure is lacking in almost all layers of the Dutch “Internet stack,” from hardware to network technologies to cloud solutions to office software. This dependence carries many risks, especially from a sovereignty perspective; citizens are exposed to data mining and manipulation, and democratic processes suffer from geopolitical interference, exacerbated by unequal political-economic power relations.

The development and use of Digital Commons can strengthen the resilience of digital public infrastructure to these types of dependencies and threats. When Digital Commons are widely used and by serve a vital function in a country’s digital infrastructure, we can count them as Digital Public Infrastructure. Governments can collaborate and invest in such projects, or take an exemplary role by implementing the technology themselves at an early stage.

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Data Commons in the Amsterdam metropolitan region

One of the effects of market forces in Dutch healthcare is strong fragmentation between healthcare providers and a lack of sharing of digital healthcare data between hospitals, general practitioners, health insurers and other healthcare institutions. Research shows that 10,000 people die annually as a direct result of these "data silos".

The data-commons model can be a way to responsibly share healthcare data for the benefit of more effective healthcare delivery, without data falling prey to large tech companies and opening the door to surveillance and manipulation.

An example of such a public data platform for sharing healthcare data already appears to be emerging in the Amsterdam metropolitan region, where in March 2024, three hospitals (Antoni van Leeuwenhoek, Amsterdam UMC and OLVG) signed a letter of intent to set up "a new regional platform for healthcare data exchange". Technical and semantic standards and the anonymization of patient data are key components of the design of the project.

The proposed platform has the potential to develop a data commons where different parties with a shared public interest organize and manage the patient data and the platforms' organisation collectively and democratically. The Health Data Space is a great opportunity to reduce dependence on commercial, foreign platforms and strengthen the digital data sovereignty of the Netherlands.

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In cooperation with the Dutch Ministry of Interior Relations

September 2024