

D I G I T

A L E U

R O P E

DATA & DEMOCRACY:
How the democratic model of society
can survive in the digital era

2 0 3 0

Alfred
Herrhausen
Gesellschaft



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BACK GROUND & MOTI VATION

THE WAY THAT WE EMBED DIGITAL TECHNOLOGIES
IN OUR SOCIETIES, ECONOMIES AND POLITICAL SYSTEMS
IS GOING TO HAVE A BIG IMPACT ON THE FUTURE OF
DEMOCRACY IN THE EUROPEAN UNION (EU).

So that we can successfully steer the digital transformation in the EU along a path aligned with democratic values, we need to come up with a shared vision of how we will engage with data in the future.

In late 2021, the Alfred Herrhausen Gesellschaft brought together another interdisciplinary group of experts to systematically design possible futures for the digital transformation of Europe, building on the success of the earlier scenario-building process 'The Public Sphere and Digital Sovereignty'. This second stage of the strategic foresight project Digital Europe 2030 focused on the role of data in the future of European democracies.

While mass commercial use of personal and public data is an integral part of the constantly expanding digital economy, what is far less clear is how data could be collected, analysed and used in the public interest. This issue touches on key aspects of how we live together as a society in the digital era.

Motivated by these considerations, the group developed a normative scenario for the digital Europe of 2030 across a series of workshops. Designing this kind of future scenario encourages a way of thinking that goes beyond mere prediction (which is often heavily based on the status quo) and helps to identify new possibilities. Unlike in the earlier exploratory process, which set out three different future trajectories, the aim was now to develop one plausible, desirable vision of Europe's digital future.

Specific options for action were then formulated based on the vision outlined by the group. The options derived from this desirable future scenario can help expand our thinking and inspire anyone interested to take action themselves. It addresses issues such as public access to data and infrastructure, the introduction of data-aided decision-making in government agencies, digitally facilitated civic participation and sustainable, climate-friendly digitalisation. At the end of the process, the project team worked with a sounding board to flesh out the preliminary results and rework them into the final version presented here.

This report does not detail all of the group's discussions and ideas, as certain nuances and more complex distinctions had to be left out. For instance, the focus on the relationship between data and democracy in Europe excludes geopolitics and international aspects of security, while the entrepreneurial initiatives described here are primarily considered in terms of their contribution to a democratic society and only secondarily with a view to economic growth. The success of the proposals outlined in this report will ultimately depend on various state, regional and local bodies, businesses and civil society organisations being able to work together effectively, even if not all of them are specifically mentioned here. ■

FIRST:
WHAT
WNEET
TAVOID

SO THAT WE CAN APPRECIATE THE SIGNIFICANCE OF OUR NORMATIVE FUTURE SCENARIO AND WHY IT IS NECESSARY TO ACTIVELY WORK TO BUILD THAT FUTURE, LET US BEGIN BY BRIEFLY IMAGINING A LESS DESIRABLE DIRECTION OF TRAVEL.

In a negative scenario, by 2030 many users and politicians still lack a basic understanding of the relationship between technology and power. They do not recognise the broad social impact of digital business models based on a creative use of technology. They also lack skills to protect themselves and others from harm in digital spaces. Teaching of digital literacy at schools and universities is inadequate. As a result, opportunities presented by digital technologies are not recognised and risks or negative impacts are underestimated or missed altogether.

Although the General Data Protection Regulation (GDPR) is still in force, alongside the Digital Services Act and Digital Markets Act that were passed in 2022, Brussels has failed to reform these instruments or implement other initiatives to regulate digital spaces.

Due to a lack of political will or ability to exert its influence, the EU has become a dysfunctional entity in the digital realm. As a result, the digital economy is largely unregulated and dominated by non-European monopolies. Users have no say in how their data is used, and there are no digital consumer protections. And if they want to switch to a different messaging platform, cloud service or network, their choice is limited as there are virtually no European alternatives. ■



*The Digital Services Act (DSA) and Digital Markets Act (DMA) aim to create a safer digital space where the fundamental rights of users are protected and to establish a level playing field for businesses.
bit.ly/DigitalEurope_01*

The European Commission unveiled draft legislation in 2020, and the acts are due to be passed in 2022.

In Europe, efforts to promote publicly accessible data and open-source technologies have failed. Although government bureaucracies

hold enormous volumes of data, users and businesses have minimal access to it, even in anonymised form. Often, this is due simply to the fact that access is technically difficult and the existence of many different interfaces and portals. Meanwhile, governments themselves are no better than they were at making use of their data to plan policy; instead, they rely on analysis and recommendations from external providers.

Digitalisation of administrative processes has only incrementally improved. For most government services and official procedures, people still need to go to their local government office in person rather than being able to deal with them on the computer. Although some decision-making processes by government bodies have been (semi-)automated, these decisions still lack transparency (how did the algorithm come to that result and who designed it that way?).

Finally, the EU has failed to have any influence on standards in infrastructure development, especially the development of technologies like artificial intelligence (AI), cloud systems and platforms. Users in Europe are forced to use non-European apps, cloud services and hardware because the standards are geared to the requirements of non-European businesses. ■



"The term open source describes software with licence agreements that include the following three characteristic features and cover the ten points of the open source definition: the software (i.e. the source text) is available in a form that can be read and understood by human users. It can be copied, distributed and used as many times as the users wish, as there are often no restrictions on use or the number of times it can be installed. Users are not often required to pay the licensor for copying and distributing open source software."
bit.ly/DigitalEurope_02, p. 109



SINCE MANY OF THE EU'S LOUDLY FANFARED DIGITAL PROJECTS HAVE FOUNDERED, POLITICAL AND SOCIAL APATHY HAS SET IN.

In all key technologies, existing asymmetries between the EU, China and the USA have been sharply reinforced, and the technological dependence of European digital businesses has grown. Since many of the EU's loudly fanfared digital projects have foundered, political and social apathy has set in. Dashed expectations of opportunities and processes for participation – including both participation through digital means and the ability to have an influence on digital spaces – have bred frustration, alienation and a sense of political impotence. As a result, many have lost faith in democratic institutions, and this problem extends far beyond digital policy.

To prevent this scenario from coming about, policymakers, and European societies, need to actively steer against the prevailing trend. We want to help by presenting a positive, tangible picture of a future in which Europe has adapted and updated its vibrant democracies to the digital era. We then set out concrete steps that could be taken to help make this vision a reality. ■



T H E
D E S I R
A B L E
F U T U R E
S C E N A R I O

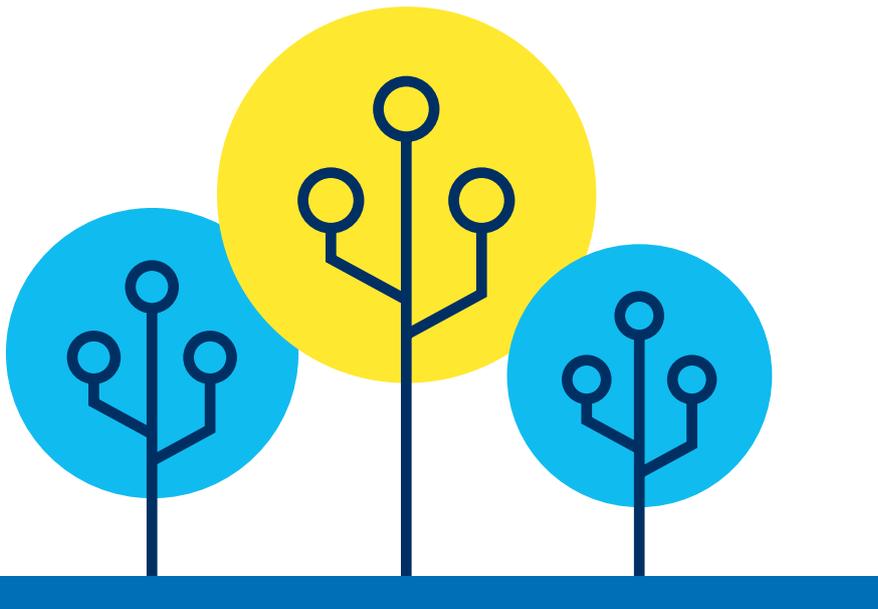
THE YEAR IS 2030. IN DIGITAL EUROPE, THE RELATIONSHIP BETWEEN DATA AND DEMOCRACY HAS DEVELOPED IN A VERY POSITIVE DIRECTION. BELOW, WE PRESENT A SNAPSHOT OF THE 2030 WE'D LIKE TO SEE.

The choice of the year 2030 for our future scenario was deliberate. On the one hand, eight years is enough time to instigate major changes, equivalent to around two legislative terms. It means our future scenario still lies within the horizons of long-term political planning and is not too far off the present. Eight years is also enough time for transformative strategies to bear fruit and take us closer to the desirable future scenario. On the other hand, our scenario does not include changes that we'd like to see but which would take far longer than eight years to achieve.

We've chosen to describe this scenario in textual form, which will necessarily have a beginning and an end. Unlike with a picture on the wall, readers can't get a rough idea of what the scenario entails at a glance and then scrutinise the interesting details more closely in whatever order they like. We present readers with one arrangement of fourteen sections, out of many possible ones. Almost all these sections are connected, not just those that come immediately before or after each other. Before we move on to the future scenario, we'd first like to set out a few basic assumptions that we've made: →

EIGHT YEARS IS ENOUGH TIME FOR
TRANSFORMATIVE STRATEGIES
TO BEAR FRUIT AND TAKE US CLOSER
TO THE DESIRABLE FUTURE SCENARIO.

BASIC ASSUMPTIONS



Complex interconnectivity

By 2030, both the wider political and social context of the data economy and the landscape of standard technologies have changed substantially. The era of the mobile device as the heart of users' digital lives has been largely supplanted by a complex interconnectivity of people and objects ('Internet of Things') mediated by voice assistants, cameras, wearables and implantables.

Openness, internationalism and scope of EU standards

The EU successfully facilitates exchange and cooperation with international partners and advocates multilateral solutions. Its standards are also binding on the big platforms based outside the single market/Europe.

Eco-friendly digitalisation

On top of that, a green digital transformation has taken place. The carbon footprint of data centres has been reduced by minimising the amount of data being processed, improving computing power and using renewable energy. Energy consumers also offset their climate impacts. Digitalisation has been achieved in a form compatible with sustainability targets.



"The term data economy is understood as a form of industry in which institutions, value creation chains, dynamics of competition and consumer behaviour on markets change through the growing use of digital technologies. The relationships between market participants (and/or institutions) are becoming increasingly data-based. This development is associated with the establishment of diverse platforms, data partnerships, data spaces and new value creation networks." bit.ly/DigitalEurope_02, p. 103

Wearables are items of computer technology worn on the body or head. Their purpose is usually to support a real-world activity, for instance by providing (additional) information, analysis and instructions. bit.ly/DigitalEurope_03

Implantables, by contrast, are devices that are implanted in the body rather than being worn. Until now, they have mainly been used in the medical sector.

THE FUTURE RESCE NARRIO

1

The EU regulations from the early 2020s have been successfully implemented and updated

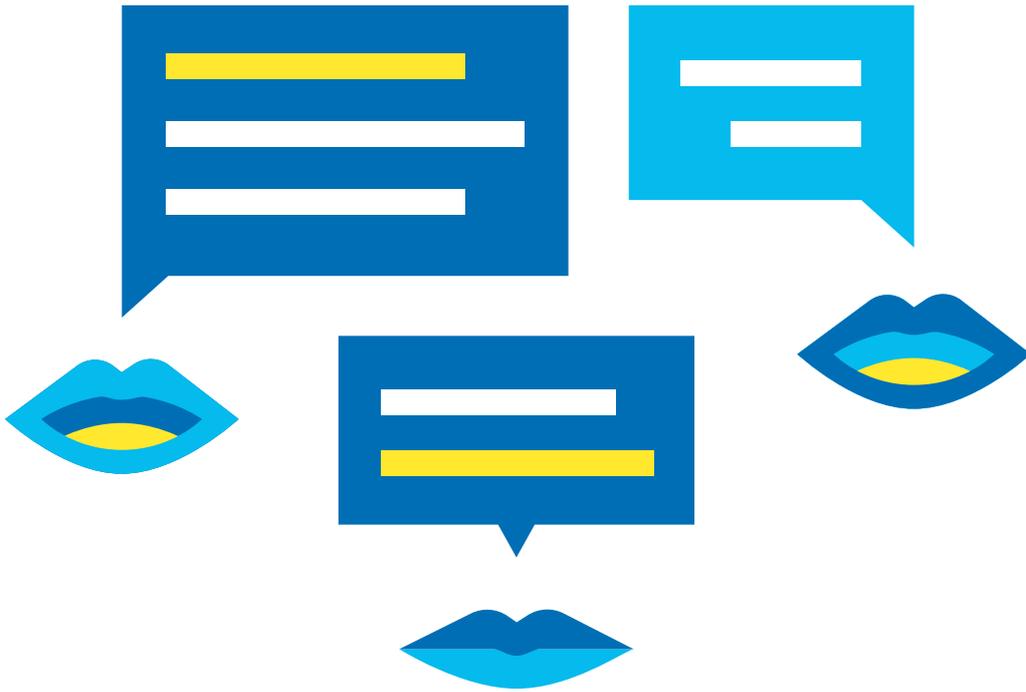
The EU's digital regulations have achieved their goals over the past decade: a functioning, diverse digital market operates within the framework of European legislation such as the DSA/DMA, which has been updated to reflect changing conditions. Instead of the market being dominated by a few big monopolies from a handful of countries, there is a wide range of market players from right across the world.

Data is able to move freely within the EU. Personal data is processed in line with various privacy standards, which have been amended with input from civil society and ordinary citizens. These include GDPR and EUid, a single sign-in system for EU citizens and businesses that each member state provides to its citizens. In 2030, data – and especially personal data – is managed differently; data trustees have become very common and only allow data to be used where it is in users' interests. Revenue models based on one-sided use of personal information, which often used to incentivise the collection of vast quantities of data, have been largely eliminated by the new constitution. ■

2 **Improved access to digital infrastructure**
 Almost all European citizens have broadband access. In any expansion of digital infrastructure, the focus is not just on economic/monetary indicators but also on social and political objectives such as equal access and security. This applies in particular to tenders for infrastructure projects. New forms of market failure in the digital age have been identified, and effective state interventions are used to keep them under control. Social security benefits are set at a level that allows for the cost of accessing digital infrastructure, including hardware and software. Regulations prohibit ISPs from discriminating against other providers' content. In sum, the first kind of digital inequality (access to digital technology) has been reduced. ■



3 **Wide range of training courses to strengthen digital and media literacy**
 Alongside national-level courses, there are also European/EU-funded digital literacy courses for people of all ages. These courses teach people how to use digital technology and provide them with contextual knowledge about (power) structures in the digital economy and sociopolitical aspects of the digital transformation. The education and training on offer ranges from new school subjects to courses at further education colleges to continuing professional development in the workplace. Some member states have amended their employment law to allow workers to take training leave, so that they can make effective use of the training opportunities. These measures have reduced the second kind of digital inequality (ability to use digital technology). ■



4 Pluralist media landscape and democratic public sphere

New media platforms are supported by the European Commission (for example through a dedicated fund) if they meet certain regulatory and technical standards. Funding is given to platforms whose algorithms do not encourage polarising content/discussions and the spread of disinformation, that respect privacy and that comply with interoperability standards. On these platforms, users can integrate content from different areas of interest.

By 2030, this decentralised approach has allowed multiple interoperable platforms to flourish as alternatives to the media platforms that used to dominate the market. Some media platforms have also undergone a process of internal democratisation; for instance, they have introduced or strengthened co-determination mechanisms.

Since in 2030 most people have access to digital technology (2), there is a high level of digital and media literacy (3) and there is a pluralist media landscape, a vibrant democratic public sphere has emerged. ■

*"Interoperability is the ability of various systems, organisations and technologies to work together."
bit.ly/DigitalEurope_02,
p. 107*

Increased interoperability could, for instance, open up previously closed-off communication networks and allow users of a messaging service like Signal to exchange messages with WhatsApp users.

5 High digital literacy in the civil service, equal public–private partnerships and encouragement of open-source software

The civil service has become much better at running tendering processes for digital services. It is able to take well-informed, considered decisions when selecting service providers, suppliers and consultants (particularly in the area of digital infrastructure). The civil service has developed its own digital capabilities and is less dependent on fully outsourcing services. By reorganising its internal structures and processes to facilitate greater collaboration, knowledge transfer and a modern leadership culture, the civil service has become an attractive employer that is popular with young, technically skilled workers.

The civil service also increasingly works with companies and other stakeholders on an equal footing in public–private partnerships (PPPs). The European GovTech and civic tech sector supports digitalisation processes in the civil service through training, experience transfer and collaboration on software development and prototyping.

All government agencies are required to transparently assess whether open-source software (OSS) could be used as an alternative to proprietary products. As a result, OSS is used in over 80 per cent of new projects, increasing transparency, oversight, quality and security. Moreover, OSS developed for one particular context can be relatively easily adapted to another, e.g. a different EU member state. There is a pan-European OSS Fund that finances development projects and maintains infrastructure components (including encryption technology, navigation systems and augmented/virtual reality). ■

GovTech (government technology) refers to technological and digital solutions provided by private and state investors and company founders for use in government, public administration and the public sector. bit.ly/DigitalEurope_04

Civic tech refers to citizens and civil society participating in research and policy via digital applications – apps, websites, platforms and more. The digital tools can create better access to information and facilitate communication and networking between citizens, organisations, communities, companies, politics and administration. This should enable more people to participate in political processes and, through more transparency, government action should be directly monitored and accountability strengthened. bit.ly/DigitalEurope_05

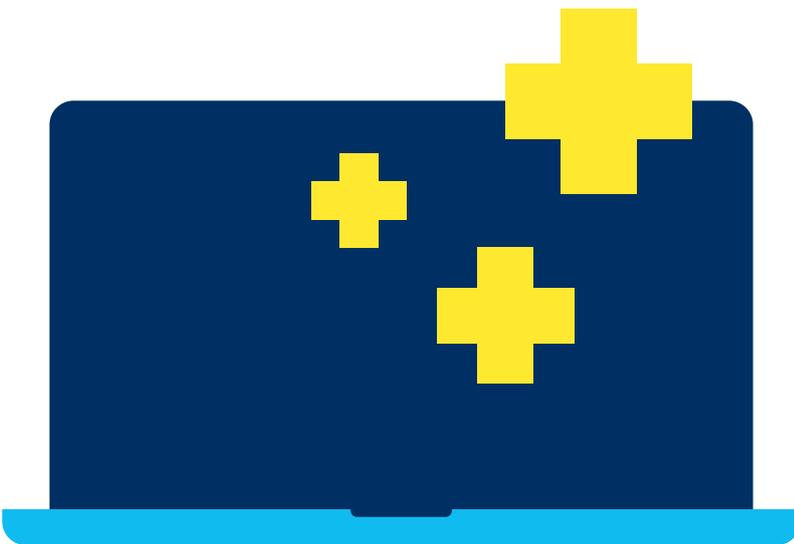


Virtual reality (VR) refers to a digital image of the real world that is created on a computer. VR glasses let users immerse themselves in an artificial world which seems remarkably real. (...) Augmented reality, by contrast, is based on the interaction of digital and analog worlds. This is usually achieved using glasses, but smartphone cameras can be used as well. Unlike the VR experience, users are never completely separated from their normal environment. Additional information about their environment is presented to users through their AR glasses or devices. For example, a warehouse worker can see where a specific spare part is stored on a shelf, or a mechanic can see helpful information on his smart glasses that can help him repair a particular component. bit.ly/DigitalEurope_06

6 Using digital technology to increase participation (particularly in healthcare, transport, culture, education)

Alongside improvements to digital infrastructure and digital literacy, European states are also increasingly using digital solutions to improve participation. Examples of this are especially prevalent in healthcare and transport. For instance, there is government funding for (electric) transport services in rural regions, which can be booked using a digital platform (co-)run by a public-sector provider. There is also a regulatory framework to enable and encourage the development of complementary digital healthcare services.

One example is the 'digital doctor's surgery' service that is used throughout Europe and ensures access to health services in areas with weak healthcare infrastructure that cannot be expanded in the near term; it is expressly not intended to replace analogue healthcare services. In the cultural sector, digital technology offers creators new opportunities to launch their own projects and develop new forms of virtual production, communication and education. All in all, digital solutions allow more inclusive, discrimination-free access to culture and education. ■



7 Giving citizens a greater say through digitally facilitated civic participation (citizens' assemblies)

In 2030, government agencies are digitally literate and the public is politically informed and active. Many randomly selected citizens' assemblies on key social and political issues have been established at EU, federal, state and local level. Depending on the powers assigned to them, they serve an advisory or decision-making function. In any case, the assemblies have an active, constructive influence on policymaking, as they are integrated into the subsequent decision-making process. Alongside assemblies that operate wholly online, there are still some (often locally organised) that meet in person, though

8 Expanded participation in EU digital policy

Processes for participating in EU digital policy have been extended. These processes help to create a political basis for democratically organised access to data and for innovative digital applications designed for the public good. This applies especially to regulations on interoperability standards and European data spaces (see section 10).

The participatory processes have improved trust between all digital policy stakeholders and led (in the view of both experts and the public) to better outcomes. The EU provides funding for these processes at national and local level. There is now also a large network in which policy-makers, civil society organisations and businesses regularly discuss issues around the use of and access to data. ■

even they make use of digital solutions: for instance, to select participants or to allow external experts to attend virtually (including AI-managed simultaneous interpreting). To make the process more transparent to the outside world, the meetings are streamed and there is the option to poll public opinion in real time.

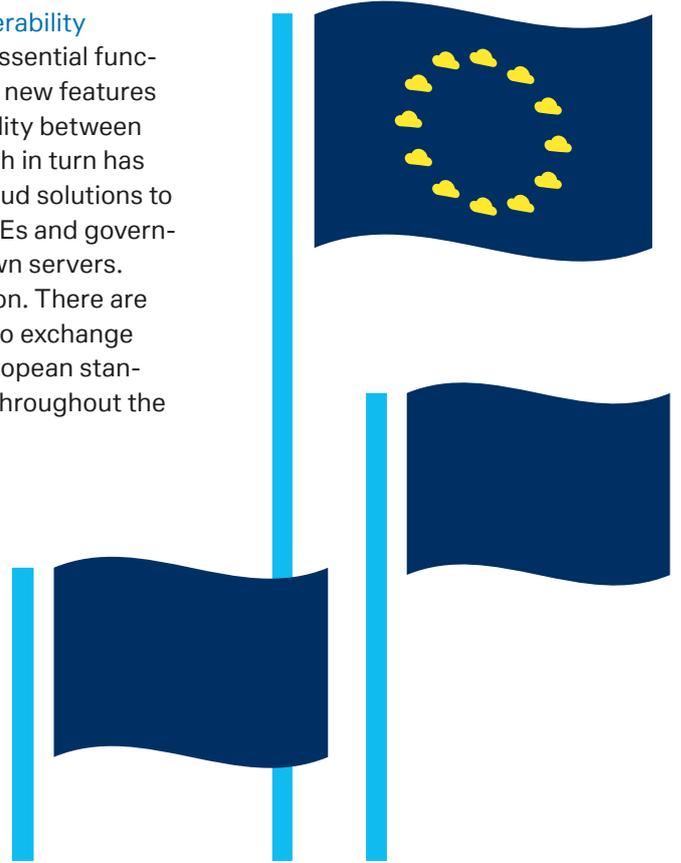
Civic participation is very high: over half of all EU residents have been involved in participatory processes at at least one level (EU, federal, state or local), and the vast majority of these in multiple processes at different levels. Citizens' assemblies play a key role in decisions on extending digital infrastructure, especially when it comes to weighing up different economic, environmental and social goals. ■



9

Improved technical and regulatory interoperability

A European cloud standard regulates the essential functions of cloud providers while also allowing new features to be developed. This ensures interoperability between different private and public providers, which in turn has allowed a diverse, innovative market for European cloud solutions to flourish, reducing barriers to cloud computing for SMEs and government agencies, which no longer need to build their own servers. The result has been a big leap forward for digitalisation. There are also interoperability regulations that make it simpler to exchange different types of data using specified interfaces. European standards for interoperability have fostered competition throughout the platform economy. ■



10

European data spaces have been created

In addition, regulations setting out targets and organisational principles have led to the creation of European data spaces. These spaces are open to the widest possible range of stakeholders (data holders, users, data subjects, service providers, etc.) and have security standards corresponding to the sensitivity of the data. For instance, there is a data space for transport that allows users to book transport services across national borders. Transport service providers offer structured data (timetables, availability of hire cars, other travellers' itineraries, traffic predictions, etc.) or an [API](#) in an [open-data format](#). Booking

services can use this data to generate booking suggestions for users using their own algorithm and interface and taking account of users' preferences (e.g. private vs public transport). This allows users to directly make 'end-to-end' bookings across national borders.

Another example:

A European healthcare data space facilitates international, public interest-based research on diabetes, which results in a better, more personalised selection of treatments.

European data spaces can promote innovation, growth and public welfare by enabling access to public goods. Besides a public funding system, this requires European venture capital so that these start-ups are able to flourish in the digital economy and are not dependent on funding from outside Europe. In addition, the improved competition in Europe resulting from successful regulatory efforts (1) prevents big companies from hogging the benefits of open data at the expense of smaller companies and public services. ■

11

Stronger role for cities and large towns in running data projects

One specific example of a data space can be found at the level of local government, which is a key area of political activity in 2030. There is a network of European cities that are running innovative data projects. Member states permit these 'experimental zones' and make use of the lessons learned from them.

Cities exchange data on the European Urban Data Platform. This platform links together numerous climate dashboards, which many European towns and cities now have. The dashboards compile relevant data on energy and water use, air quality, greenhouse gas emissions, transport (walking, cycling, driving, public transport) and potential environmental hazards. They make it easier to measure, compare and understand successful outcomes. Civil society organisations and businesses are actively involved too. Key political decisions are increasingly made based on this real-time data from participating cities. ■

12

Use of data-aided evaluation and decision systems in policymaking

Data is used to inform policy decisions on social issues (as distinct from administrative decisions by government agencies, see below). Cities and (large) towns and state/federal agencies use digital tools to help plan policy in a more consistent way. 'Bottom-up' data is increasingly used for early identification of areas where action is needed. These processes ensure that decision mechanisms and procedures are documented as transparently as possible, so as to permit legal challenges. Data-aided evaluation and monitoring systems are used in many areas of policy: social policy (pensions, unemployment insurance, etc.), health policy (health insurance benefits and contributions), environmental, transport and climate policy, customs policy and so on. ■



"A data space is a shared, trustworthy space for data transactions. A data space is based on shared standards (or values, technologies, interfaces) permitting or promoting data transactions, for example." bit.ly/DigitalEurope_02, p. 105

"An application programming interface (API) is an interface that facilitates access to a technical system (e. g. software or a device) and determines the conditions under which the system can be used. It normally enables the standardised exchange of various data and information between systems." bit.ly/DigitalEurope_02, p. 101

"The concept of open data is generally understood as data in a machine-readable open format that is used, reused and forwarded freely by all users. Often it does not involve a one-off release of a data record but rather an on-going process in which data is updated and users' queries relating to the data must be answered." bit.ly/DigitalEurope_02, p. 108

13

System for e-government services and (semi-)automating public

administration

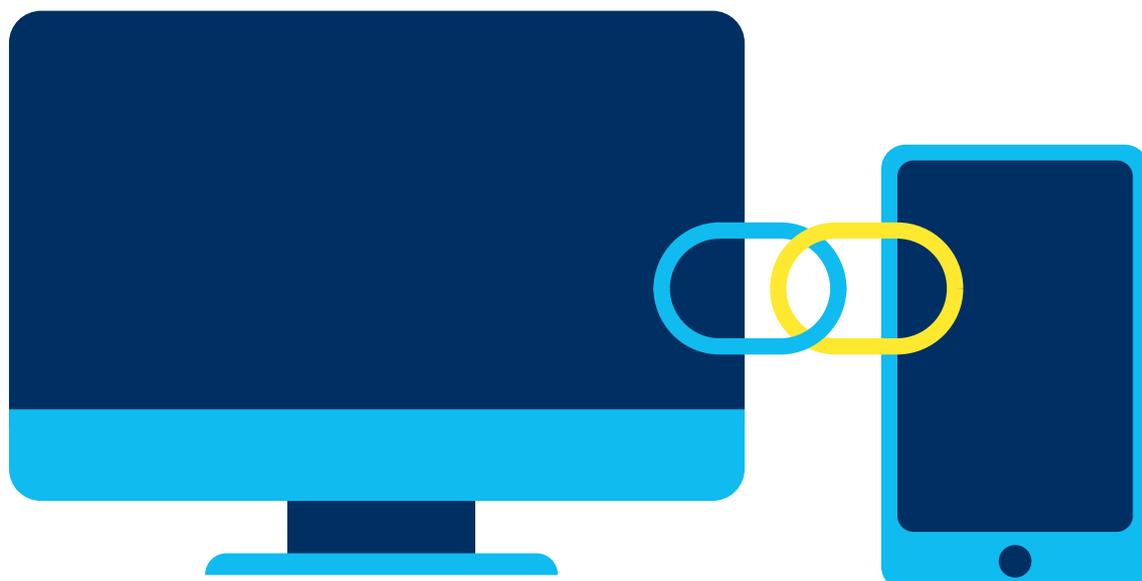
Interoperability standards and data spaces have helped to establish a European version of the Estonian X-Road. It brings together all technical, legal and regulatory conditions, so that in principle all EU member states can digitise their government files and records (legislative, judicial, administrative) in the coming years. EU citizens can access almost all European government services and official procedures on a readily accessible, user-friendly platform (the updated version of Your Europe)

without needing to attend an appointment in person (except for cases such as marriages or property purchases). These platforms have been very popular. By 2030, thanks in part to consistent use of OSS, the first European e-government applications have been fully digitised in line with data space regulations, including a digital European/international driver's licence and European education accounts for managing credits across multiple universities.

Digitalisation has cut red tape in many EU states and significantly sped up administrative processes by government agencies. Some benefits are proactively administered by the

state without citizens needing to apply. For instance, immediately after a child's birth certificate is issued the parents are sent a prefilled application for child support. Where decisions are (semi-)automated, the algorithms are transparent and all decisions can be appealed. Areas relating to fundamental rights (such as asylum applications) are excluded from (semi-)automated decision-making. ■





14

Emergence of cooperative technology ecosystems

Standardised interfaces have also allowed a rapid expansion of digital applications designed for the local government level. As well as the interconnected climate dashboards mentioned earlier, there is now for instance an app developed by a Prague PPP that allows road users to report dangerous traffic situations with a single click, and which the municipal authorities use to set priorities for infrastructure projects or to rapidly implement preventive measures where necessary. Since this app operates with universal interoperability standards, complies with European data space regulations and uses OSS, many other cities have introduced it too (and made a contribution to the development costs for the

GUI). In Groningen, a civic tech initiative in collaboration with local government and software companies are working on an upgrade that would allow the app to detect patterns in the stress indicators transmitted by users, which would mean that consenting users would no longer need to make reports manually. ■



A graphical user interface (GUI) is an interface between human and machine that displays a system's back-end code in the most user-friendly way possible, so as to simplify day-to-day work with that system. Symbols and images are of particular importance, because they allow a universal application not dependent on text. For instance, almost everyone knows what a Wi-Fi symbol looks like, while the word for it is very different in different languages.
bit.ly/DigitalEurope_07

T H E
G O A L S :
L I T E R A C Y ,
D I V E R S I T Y ,
P A R T I C I
P A T I O N

THE FUTURE SCENARIO
CAN BE SUMMED UP
IN TERMS OF FIVE
INTERRELATED GOALS:

1) **Improved access to digital infrastructure and better digital and media literacy among the general population** thanks to updated regulations, a wide range of training courses and improved participation in healthcare, transport, culture and education thanks to digital solutions.

2) **Creating a pluralist media landscape** by funding platforms whose algorithms do not encourage polarising content and the spread of disinformation, that respect privacy and that comply with interoperability standards.

3) **Raising digital literacy in the civil service to a par with the private sector**, digitalising all government services and official procedures in line with a single European standard and

introducing (semi-)automated administrative procedures in government agencies.

4) **Giving citizens a greater say with digitally facilitated civic participation** (e.g. citizens' assemblies), expanding participation in EU digital policy and introducing data-aided evaluation and decision systems in policymaking, with cities leading the way.

5) **Facilitating the creation of cooperative and sustainable digital ecosystems** by creating European data spaces and technical/regulatory interoperability standards while also developing and enforcing EU regulations in the digital sector (e.g. DSA, DMA, GDPR, EUid). ■

The options for action devised by the group focus mainly on the last three goals. In our view, they offer the greatest potential for innovative and effective policy options. The first two clusters of issues can be regarded as essential preconditions for achieving other goals. Moreover, they also featured prominently in the Alfred Herrhausen Gesellschaft's previous foresight project. ■

THE OP
TIONS
FOR
ACTION



T here are many possible routes to this desirable future scenario.

So where to begin?

We systematically developed a roadmap for each of the three priority goals. Each

roadmap sets out the various stages along the way to the solution, including obstacles and milestones. In this way, we came up with some specific ideas for first steps towards the long-term goal. Taken together, these steps make up

a strategy for actively achieving the desirable future scenario as a whole. Doing nothing wouldn't merely mean delaying that future, but would greatly increase the risk of drifting into the worst-case scenario described in the introduction. ■

1 Future incubators

The EU Commission and member states could bring together a range of stakeholders – journalists, foundations, think tanks, policymakers, government agencies, businesses – in future incubators, with the goal of helping to create digital ecosystems. The incubators would develop digital solutions to society's challenges that cut across sectoral divides. Individuals or teams could apply for funding and technical support for their idea in predefined categories (e.g. ageing society, environment). This would also strengthen civic participation in digital policy and the focus of its implementation. The necessary seed finance could be provided by the NextGenerationEU recovery fund. An improved European funding system for digital start-ups, like the Scale-up Europe initiative proposed by the French Presidency of the EU Council, is needed to ensure they receive enough venture capital in both the seed and growth phases. The goal of each incubator would be to use digital tech-

nology to identify quality of life deficits and devise long-term solutions ('Thinking in data spaces'). An incubator would pilot digital products and services geared towards the public good. Development up to market-readiness could be funded through sponsorship and collaborations, while fellowships could be awarded to individual participants. Spin-offs would be created to market digital products and services. The incubators' work could be overseen by panels of ordinary citizens, who would be involved not just in coming up with ideas but also in allocating the budget ('participatory budgeting'). ■

2

Improved interoperability

The digital single market cannot function without technical and regulatory interoperability. The EU Commission could therefore resolve to require greater interoperability for digital products and services in the single market. They could make interoperability standards a condition of new public-sector tenders or contract extensions, or offer financial incentives for private businesses to introduce them (for instance, through the NextGenerationEU fund's Digital Europe Programme or through tax relief).

They could also make the provision of public data conditional on interoperability and impose higher taxes on large digital companies that do not comply with interoperability criteria.



"Anonymisation is the process in which data is changed so that it no longer relates to an identified or identifiable individual or in which personal data is prepared in such a way that the data subject cannot be identified or can only be identified with a disproportionate amount of effort or by illegal means."
bit.ly/DigitalEurope_02, p. 101

At the same time, the EU could attempt to engage in dialogue with the USA through the Trade and Technology Council and bring the influence of European legislation to bear even on US companies based outside the EU (something known as the 'Brussels effect').

Building on the DMA/DSA's interoperability requirements and the GDPR principle of 'data agency', an EU-wide, multi-stakeholder digital council could make specific proposals on technical interoperability and harmonisation of data standards. The goal would be to break open proprietary systems by not merely allowing but enabling data transfer, and to make large quantities of public data available for use. The companies represented in the digital council would devise guidelines on what data could be stored, in what sectors, in which databases and who would be able to access it and how (for instance, transport data from cars and planes would be treated differently from personal health data). Applications of this kind are already possible, though they are not yet very widespread; the distinctive thing about this proposal would be the use of publicly available data via standards-compliant interfaces useable by any provider.

In the next stage, organisations with various kinds of collaborative structure (such as cooperatives, PPPs between businesses and local government bodies, not-for-profit companies) would be established, with the goal of providing accessible, competitive products and services that offer added value to commercial providers and consumers. For instance, health insurers could offer anonymised health data that could be used to develop health services, preventive treatments, nutrition advice, etc. Tourism providers could offer cooperative networks for regional products and services (customisable combinations of travel, hotels, activities, food, etc. instead of package holidays). PPPs between cities and transport providers (e.g. public transport operators, car or bike sharing schemes) could allow dynamic pricing for road/transport use (e.g. congestion charges or cheaper car sharing) to be displayed in real time, or could develop needs-tailored transport services for rural regions. This would make interoperability attractive to companies as a way to win customers, while still maintaining high privacy standards. ■

3

Alliance for European Exchange on Participation (AEEExP)

Working with civil society organisations, EU institutions, foundations and the private sector, the European cities network could set up the Alliance for European Exchange on Participation (AEEExP). The goal would be to exchange good examples of civic participation and develop new options for quick, effective participation that could be easily integrated into governmental processes right across Europe. Trailblazers of digital civic participation such as Spain (e.g. Barcelona's open data service), Estonia and Denmark (e.g. interfaces for accessing government services) bring a wealth of experience in dealing with technical complexity and diverse challenges that the whole EU could benefit from.

The AEEExP could be established by the European Parliament, given a mandate by the Council and provided with a suitable annual budget, allowing it to set up an office and run its own projects. A broad-based recruitment process would identify and hire people from a range of sectors (not just the civil service).

The AEEExP would hold a major annual conference in alternating European cities, where attendees could share their experiences, discuss new initiatives to improve participation and jointly develop technology projects, which could then be implemented with funding from the alliance. The technology projects funded by the AEEExP would use open-source software and open standards (either existing ones or ones specially developed for the project) to ensure Europe-wide compatibility. All projects would be constructively supervised by independent civil society panels, which for all participatory formats would consider issues such as diversity, sustainability, inclusivity and public welfare.

Alongside the annual conference, there could also be regular local conferences on specific themes, based on ongoing debates in the host city (e.g. infrastructure projects, budgetary questions, taking utilities back into public ownership). Where competing formats, standards or processes exist, the alliance could act as an intermediary and make recommendations to ensure interoperability between different solutions. The impact of these high-profile conferences could bolster acceptance of and support/enthusiasm for data-driven applications and participatory solutions in Europe.

Alongside the conferences, the alliance would publish an annual report and send it directly to the competent member of the EU Commission. It could include specific proposals for creating and updating interfaces for civic participation. ■

TRAILBLAZERS OF DIGITAL CIVIC PARTICIPATION SUCH AS SPAIN, ESTONIA AND DENMARK BRING A WEALTH OF EXPERIENCE IN DEALING WITH TECHNICAL COMPLEXITY AND DIVERSE CHALLENGES.

4

Digital
Green Deal

To promote sustainable digital ecosystems, the EU

Commission could formulate principles for a Digital Green Deal. These principles could set out clear rules and standards for environmentally sustainable data storage and analysis technology and other energy-intensive processes such as streaming. Recent regulatory initiatives (DSA, DMA, AI Act) could be supplemented with proposals for improved sustainability. Funding could also be provided for green data centres. To ensure transparency, the measures would need to be set out in a clear, measurable way. To prevent the proposals that are developed from being blocked by the EU Council, it

would need to be ensured that they directly contribute to achieving the emissions targets declared by the member states and do not exceed the agreed limits. Leading business associations could be invited to supplement and comment on the demands included in the proposals, so as to take commercial interests into account without diluting the core elements.

The civil society organisations involved in developing the measures could use professional PR campaigns to communicate their broad social relevance. They could also serve an oversight function during the consultation period and build public pressure if other organisations, such as the EU Council, attempt to water down the proposals. ■



The Commission announced its proposal for a regulation on artificial intelligence (AI Act) in April 2021. It aims 'to address risks of specific uses of AI, categorising them into four different levels: unacceptable risk, high risk, limited risk, and minimal risk. In doing so, the AI Regulation will make sure that Europeans can trust the AI they are using. The Regulation is also key to building an ecosystem of excellence in AI and strengthening the EU's ability to compete globally. bit.ly/DigitalEurope_08



TO ENSURE TRANSPARENCY,
THE MEASURES WOULD NEED
TO BE SET OUT IN A CLEAR,
MEASURABLE WAY.

5 **Civic Tech for Europe**
The EU Commission could set up the programme Civic Tech for Europe to increase digital literacy in member states' civil services. The programme could involve multiple strands.

The first could be an exchange programme between businesses and the civil service. Company employees would be seconded to the civil service for 12 to 24 months to work on relevant digitalisation projects, and civil servants would be transferred to the employees' companies for the same period. A common governance framework would set out cooperation formats, transparency requirements and anti-corruption measures (e.g. training sessions).

This programme would be financed through a fund, with contributions from the EU budget (funding from dedicated EU programmes), from savings on now-obsolete consultancy costs and from foundations. Applicants would be appointed according to professional expertise and experience, not formal educational qualifications. In this context, young professionals would be especially welcomed. The programme could include preparatory seminars and facilitation during the exchange, and diversity quotas could be implemented.

Companies would be incentivised to take part by the opportunity to act as good corporate citizens, which would also benefit their reputation. In addition, the participating employees would bring experience of working with the civil service back in-house.

The participants from the companies could be incentivised by work on tasks that give them a sense of purpose and fulfilment. For participants from the civil service, good training opportunities and a chance to work internationally could be attractive.

The second strand of the programme could be a voluntary EU Civic Tech Year. Primarily aimed at young people, participants would be able to spend a year applying their digital expertise (even if it only comes from being a member of the digital native generation) to specific digital projects at all levels of public administration in the EU. The programme could cater more effectively to the pressing need for digital expertise in the civil service than would be possible in the short term through demand-side reforms to recruitment and training. ■

O U R

W O R K

P R O

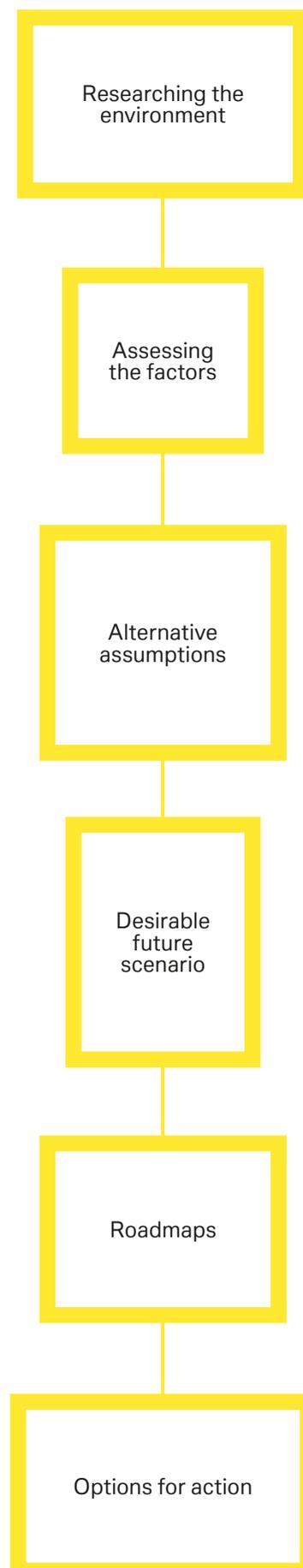
C E S S



In the first workshop, the group identified factors that have a direct influence (today and up to 2030) on digital Europe (environment scanning). The results of this structured brainstorming were compiled into a list of descriptors from a wide range of areas (business, politics, society, technology, etc.). Out of all these descriptors, the participants then picked six that were associated with particularly high levels of uncertainty, impact and malleability (factor assessment).

For each descriptor, a range of alternative assumptions (including best guess, worst case, best case) for their long-term development up to 2030 was formulated. In a moderated discussion, the group combined the various alternatives into a

desirable, slightly idealistic but nonetheless logically consistent cluster of assumptions. In small groups, the participants then expanded the still rather abstract clusters into a more holistic vision of a desirable future scenario. Finally, the small groups' scenarios were integrated into a single, collectively agreed scenario (desirable future scenario). After the workshop, the project team summarised the results of the group work in a detailed description of the future scenario, which was then fleshed out in several rounds with both the sounding board and the expert group – resulting in the version published here. In the second workshop, the participants prioritised certain aspects of the future scenario. Small groups then developed roadmaps for individual areas. Based on this work, the experts developed strategic options for action and proposed specific first steps that could be taken (options for action). ■



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The scenarios are based on the participants’ joint discussions and do not reflect their personal views or the opinions of their respective organisations.

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