

Digital study support for the subject: eGovernment

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Objective:

The aim of the course is to provide students with an overview of the digital economy, society and governance. Students will get acquainted with the main trends and technologies in the field of digitalization of the public sector. Students will also gain the skills to apply digital tools to communicate with public administration.

Annotation:

Digital transformation is one of the priorities of the European Union, which is reflected in its policies. Digital technologies are perceived as an important aspect, representing a huge growth potential for EU countries. The digital transformation is therefore primarily aimed at strengthening the capacity of EU countries in new digital technologies. This should lead to increased competitiveness as a whole, open up new opportunities for businesses and consumers, support the EU's green transformation and help it achieve climate neutrality by 2050 (covered by the Green Deal for Europe). Increasing the digital literacy of EU citizens, enhancing the digital skills of employees and promoting the digitisation of public services are also important areas of digital transformation in the EU.

Key words:

Digitalization, eServices, eParticipation, Smart City, public administration.

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1 Digital Transformation of the Economy, Society and Public Sector

The topic of [digital transformation](#) is currently in the forefront of interest of many authors and international organisations, such as OECD, World Bank or United Nations. Digitisation is a key issue also in the European Union (Małkowska, Urbaniec and Kosała, 2021), (Kraus et al., 2021), (OECD, 2019a), see *Chapter 1.2*. Digitalization is an important research topic, a number of studies have been created that deal with the topic of digitization of the economy and its importance for the future.

Nowadays, digitalisation refers to the process of introducing the use of digital technologies in various areas of production and social life. Digitalization is the process of converting analogue information, processes, and services into a digital form. This process involves the automation, digitalization, and computerization of activities and operations, see MPSV (2020).

Digitalization is an integral part of today's society, which significantly affects the functioning of the state, municipalities and public institutions and changes the requirements for the knowledge and skills of citizens.

(Veber et al., 2018) and (European Parliament, 2023)

Digitisation is a tool to make the public sector more efficient and transparent, and the results of digitisation are measured and evaluated at different levels of government and various eGovernment indices are monitored, see [E-Government Development Index \(EGDI\)](#), [eGovernment Benchmark](#), [Digital Economy and Society Index \(DESI\)](#). Digital technologies are also implemented as a part of business processes, together with labour, capital and knowledge capital assets, in order to drive performance (OECD, 2019a). The internet, social networks and mobile applications are becoming an indispensable part of every member of the digital society (European Commission, 2016)

1.1 Digitalization and Economic Theories

In the context of modern society and the economy, digitalization is of crucial importance. Here are some **key points** that illustrate the digitalization in various aspects:

1. Efficiency and productivity
2. Innovation
3. Access to Information and Services
4. Transformation of the labor market
5. Globalization

By connecting these points to economic theories, models, and influential economists, we can deepen our understanding of how digitalization fits to the broader framework of economic theory.

1.1.1 Efficiency and Productivity

Digitalization enables the automation of routine tasks, leading to greater efficiency and productivity in various sectors of the economy. For example, digitizing production processes can shorten time cycles and reduce costs (ECB, 2023), (Szalavetz, 2019).

From an economic perspective, the concept of efficiency is central to theories like neoclassical economics. Digitalization's role in automating tasks aligns with the neoclassical idea of maximizing efficiency through optimal resource allocation. This ties to the work of economists such as Adam Smith and his theory of the invisible hand, which suggests that individual self-interest in a competitive market leads to overall economic efficiency.

1.1.2 Innovation

Digitalization provides platforms for innovation and the development of new products and services. New technologies such as artificial intelligence, blockchain, or the Internet of Things can open up new possibilities for business and economic development.

The importance of innovation in economic growth is a key aspect of theories like endogenous growth theory, which posits that innovation is not just a result of economic growth but a driver of it. Economists like Joseph Schumpeter emphasized the role of entrepreneurship and technological innovation in fostering economic development. Digitalization, by providing platforms for innovation, aligns with Schumpeter's ideas of **creative destruction** driving economic progress (Schumpeter, 2004).

1.1.3 Access to Information and Services

Digitalization facilitates the dissemination of information and the provision of services more quickly and efficiently. People have easier access to information, goods, and services through the internet and digital platforms (OECD, 2021).

Information economics, pioneered by economists like George Akerlof and Joseph Stiglitz, highlights the role of information asymmetry in markets. Digitalization reduces information asymmetry by providing broader access to information and services, aligning with the idea that more transparent markets can lead to better outcomes for consumers and businesses alike.

1.1.4 Transformation of the Labour Market

Digitalization is changing the requirements of the labour force and the structure of the labour market. There is a greater emphasis on digital skills and abilities, while some traditional professions may be replaced by automation (ILO, 2022).

The impact of technological change on the labour market has been a subject of study in labour economics. The concept of technological unemployment, introduced by John Maynard

Keynes, suggests that technological advancements can lead to short-term job displacement. However, over the long term, new job opportunities often emerge as technology creates new industries and demands new skills, as outlined in the theory of structural transformation by economists like Wassily Leontief and Arthur Lewis.

1.1.5 Globalization

Digitalization enables companies and individuals to communicate and trade more quickly and easily on a global level. This contributes to the development of international trade and cooperation (OECD, 2023).

Globalization theory, influenced by economists such as David Ricardo and Paul Krugman, emphasizes the benefits of international trade and interconnectedness. Digitalization facilitates globalization by reducing barriers to trade, communication, and collaboration across borders, aligning with the idea that free trade can lead to greater economic prosperity for all involved parties.

1.2 The Importance of International Organisations in the Field of Digitisation

The digitisation of the economy and digital transformation is being addressed by a number of supranational and international institutions and organisations. The European Union, the OECD and the United Nations play the most important roles in terms of European perspective. These organisations issue a series of documents, strategies and recommendations to their member countries to promote digitisation, shape national policies and analyse results in this area.

1.2.1 European Union (EU)

The [European Union](#) is a political and economic supranational grouping that aims to improve cooperation in Europe; it is a **sui generis** entity that has some of the powers of an international organisation, but also of a single state. It is made up of 27 European states. The EU was created in 1993 under the [Treaty on European Union](#), better known as the [Maastricht Treaty](#).

The European Union seeks to support the digital transformation of the EU public sector and accelerate the deployment of secure cross-border data exchange and sharing solutions needed to deliver digital services to the state. [Digital Public Administration factsheets](#) are published for EU countries, focusing on all the matters related to digital public administration.

Europe's digital transformation is guided by the [Digital Decade policy agenda](#), which builds on the Europe 2030 Digital Compass and contains specific challenges and targets for the period up to 2030. A monitoring system based on the [Digital Economy and Society Index \(DESI\)](#) is used to measure progress towards the goals (European Commission, 2022).

For the period 2020-2027, the European funding programme [Digital Agenda for Europe \(DEP\)](#), which is part of the [Multiannual Financial Framework for the EU](#), has replaced the existing programmes.

1.2.2 Organisation for Economic Co-operation and Development (OECD)

[The Organisation for European Cooperation and Development](#) was founded in 1961 and is based in Paris. The OECD plays an important role in coordinating the economic and social policies of its members. Member countries respect the common principles of a market economy, pluralist democracy and respect for human rights. It currently has 34 members; the Czech Republic became a member in 1995 (OECD, 2019b).

OECD Committee on the Digital Economy (CDEP)

The Committee serves as an international expert exchange on information society in the areas of telecommunications, information economics, information security and indicators for measuring the information society. The Committee is responsible for promoting the policies and regulatory measures necessary for the development of the Internet, information and communication technologies and the exploitation of their potential, for the development of a secure and trustworthy digital economy. The Committee facilitates international cooperation between Member States and the coordination of their national policies.

The Committee issues evaluation reports and publications comparing the development, trends and current state of development of the digital economy in the member countries, see [Measuring the Digital Economy: A New Perspective](#), [Going Digital: Shaping Policies, Improving Lives](#) or [Measuring the Digital Transformation: A Roadmap for the Future](#). One of the reports is the [Digital Economy Outlook](#), which is published every two years and offers a comprehensive analysis of the digital economy. In five chapters, the publication describes the overall development of the internet economy and the impact of new trends; provides an analysis of the electronic communications market; addresses governance and transparency issues related to the digital economy; looks at key trends for the further development of the digital economy within society; and the economic and social impacts of the digital economy (OECD, 2020).

OECD E-leaders Working Group

The issue of digital transformation of public administration is dealt with by the thematic working group E-Leaders at the OECD. The members are senior government officials responsible for the digitalisation of public administration in OECD member and partner countries. Within this group, country representatives discuss important related issues at policy and strategic level, identify priorities and exchange experiences and best practices in the field of digital public administration.

Currently, the E-Leaders Working Group is focusing in particular on the emerging strategy document *The Digital Transformation of the Public Sector*, which aims to reflect the most

important trends leading to the digital transformation of the public sector and the main policy implications.

The E-Leaders Working Group falls under the OECD Public Governance Committee (PGC). The PGC has previously published [Recommendation on Digital Government Strategies](#). This is the OECD Council's recommendation on digital strategies at national level, which aims to bring public administration closer to citizens and businesses through 12 core principles. The Recommendation can enable a fundamental shift from citizen-centric approaches (government anticipating the needs of citizens and businesses) to citizen-driven approaches (citizens and businesses formulating and determining their needs **in partnership** with governments). It recognises that today's technology is not only a strategic driver for improving public sector efficiency, but can also support effectiveness of policies and create more open, transparent, innovative, participatory and trustworthy governments.

The Committee also supports the development of an implementation package, the [Digital Government Toolkit](#), which includes detailed recommendations on how Member States can put the 12 principles of Recommendation into practice. This set of guidelines also makes it possible to set measurable indicators for the digitisation of public administration and to share best practices from country to country for each of the principles adopted (OECD, 2014).

1.2.3 United Nations (UN)

The [United Nations](#) is an international organization founded in 1945. Currently made up of 193 Member States, the UN and its work are guided by the purposes and principles contained in its founding [Charter](#). The UN has evolved over the years to keep pace with a rapidly changing world.

The UN publishes the biennial [E-Government Development Index \(EGDI\)](#), which assesses the development of e-government at the national level. It is a composite index composed of three components:

1. adequate telecommunications infrastructure (Telecommunications Infrastructure Index, ITU),
2. human resource capacity to support and use ICT (Human Capital Index, UNESCO),
3. and availability of online services and content (Online Service Index, UNDESA)

The latest output of the EGDI is the [eGovernment Survey 2022](#). The United Nations E-Government Survey 2022 is the 12th edition of the United Nations' assessment of the digital government landscape across all 193 Member States. The E-Government Survey is informed by over two decades of longitudinal research, with a ranking of countries based on the United Nations E-Government Development Index (EGDI), a combination of primary data (collected and owned by the United Nations Department of Economic and Social Affairs) and secondary data from other UN agencies (UN, 2024).

1.3 Digitalization in the European Union

Digitisation is a key issue in the European Union (EU). The digital transformation is reflected in individual EU policies. Digital technologies are perceived as an important aspect, representing an immense growth potential for EU countries. The aim of the digital transformation is therefore primarily to strengthen the capacity of EU countries in the field of new digital technologies (Europa, 2023). This should lead to increased competitiveness as a whole, open up new opportunities for businesses and consumers, support the EU's green transformation and help it achieve climate neutrality by 2050 (covered by the [Green Deal for Europe](#)) (European Commission, 2019).

In 2010, the document [Digital Agenda for Europe](#) was presented, which for the first time set out the key role of information and communication technologies in achieving the European Union's objectives (European Commission, 2010a), (European Parliament, 2021). The Digital Agenda for Europe is one of the seven main initiatives of the [Europe 2020](#) strategy. Europe 2020 strategy from 2010 sets out a vision for achieving high levels of employment, productivity and social cohesion and a low-carbon economy (European Commission, 2010b).

In 2020, the second five-year digital strategy, [Shaping Europe's Digital Future](#), was presented, focusing on three key digital objectives:

- Technologies that work for people,
- a fair and competitive economy
- and an open, democratic and sustainable societies (European Commission, 2020).

This strategy was complemented by the strategic communication [A Digital Decade for Europe](#) and the adoption of a ten-year plan, the [Digital Compass: Europe's vision for the Digital Decade](#) in 2021, which pursues the European Union's digitalisation goals to 2030 (Europa, 2024).

The **Digital Compass** has drawn up a set of digital principles to guide European digital citizenship. The principles are based on fundamental rights and values and aim to help create a people-centred, safe and open digital environment. These include universal access to online services, a safe and trustworthy online environment, ethical principles for human-centred algorithms, protection of children in the online space and other objectives (European Commission, 2021).

Public sector such as state administration, local government, transport, health, education or culture are also significantly affected by digital transformation. The digitisation of public administration is therefore included among the key objectives of the **Digital Compass**, see Figure 1.

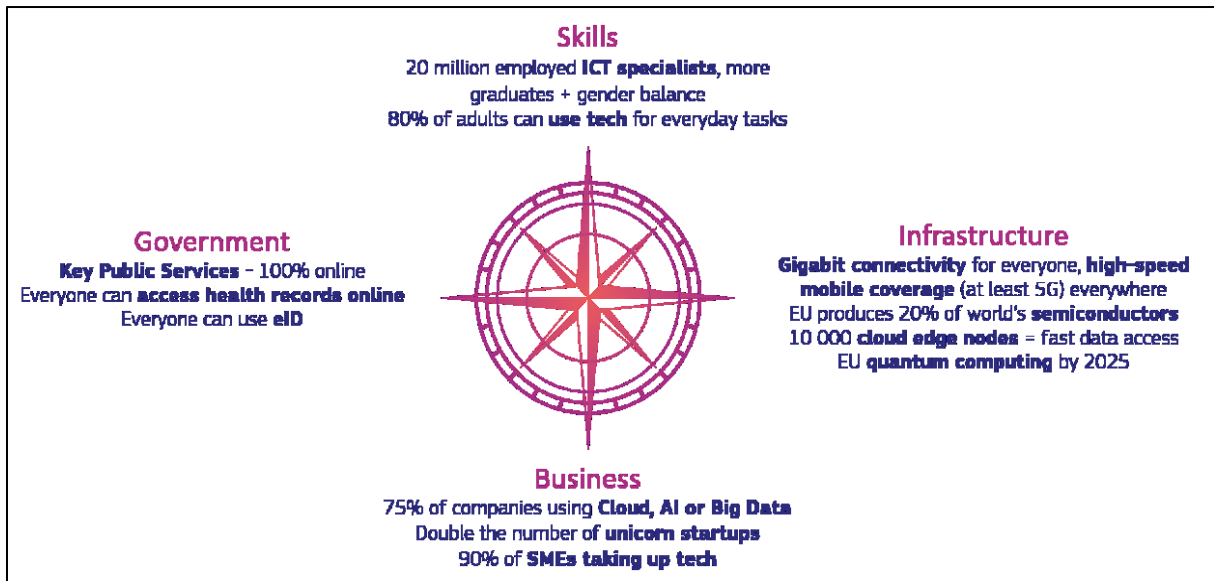


Figure 1 Digital Compass

Source: European Commission (2021)

Digital Compass focuses on four areas to determine the main targets:

1. *Digitally skilled population and highly skilled digital professionals.* By 2030, at least 80% of all adults should have basic digital skills, and there should be 20 million employed ICT specialists in the EU – while more women should take up such jobs.
2. *Secure and sustainable digital infrastructures.* By 2030, all EU households should have gigabit connectivity and all populated areas should be covered by 5G; the production of cutting-edge and sustainable semiconductors in Europe should be 20% of world production; 10,000 climate neutral highly secure edge nodes should be deployed in the EU; and Europe should have its first quantum computer.
3. *Digital transformation of businesses.* By 2030, three out of four companies should use cloud computing services, big data and Artificial Intelligence; more than 90% of SMEs should reach at least basic level of digital intensity; and the number of EU unicorns should double.
4. *Digitisation of public services.* In the field of **public services**, all key public services should be available online till 2030, all citizens should have access to their electronic health records and 80 % of citizens should use e-identity solutions (European Commission, 2021), (EU4Digital Union, 2024).

The Europe’s performance across the four dimensions of the Digital Decade policy programme: digital skills, digital infrastructure, digitalisation of business and digitalisation of public services is summarising a dashboard of indicators – [DESI 2023 dashboard for the Digital Decade](#) (European Commission, 2023b).

1.3.1 Digital Technologies and Digital Transformation in Public Sector

Digital technologies have a profound impact on the economy. Digitalization is a contemporary process of transformation of the economy and society, in which digital technologies are being introduced and used in various spheres of life, including the public, business and non-profit sectors (Veber et al., 2018), (Pilný, 2016) and (MPSV, 2023). This is a feature of the development of the global community that is characterized by quantitative growth, associated with the expansion of Internet users and software applications, and qualitative growth, associated with the development of qualitatively higher networks (G5) and new applications (Veber et al., 2018). The goal of implementing digitalization in the economic sphere is to strengthen the competitiveness of the respective economy at the micro level (competitiveness of the firm that implements the elements of digitalization) and at the macro level (strengthening international competitiveness).

Digital transformation represents the integration of digital technologies by companies and enterprises and includes the impact of these technologies on society. Above all, digital platforms, the Internet of Things, so-called cloud computing and artificial intelligence are among the technologies transforming people's lives and affecting a whole range of industries.

The process of implementing digitization to date has not been a leap, but rather a gradual and also largely asymmetric one. However, the digital transformation process is such an important aspect that it cannot be grasped by initiatives from below in the form of isolated business entities, but needs to be conceptualized, coordinated and supported from the level of national executives and transnational policies (Malodia et. al, 2021), (Veber, 2018).

EU countries are tasked with promoting digital transformation initiatives in their national environments to be able to harness the potential of the gradual digitalisation of society and face the challenges it brings. The main objective is therefore to develop policies and implement innovative solutions for public and private sector that give the economic subjects the confidence, competences and means to digitise and grow (European Parliament, 2023).

As part of the development of the digitisation of the public sector, the EU aims to fully digitise the provision of essential services to citizens by 2030 (life events listed in the [Commission decision C2023\(4288\)](#)). On average across EU countries, 77% of basic life events in relation to public administration could be completed online in 2022. The assumption for 2030 is that 100% of services will be available online, see European Commission (2023a).

Digital transformation in public administration will require certain demands on users of digital public administration services in the form of digital literacy of citizens. A key competence for the use of public and private digital services is the acquisition of **basic digital skills** that also includes the ability to communicate digitally with the state administration and use eGovernment services (MPSV, 2023). The European Commission has been addressing this for a long time. [European Skills Agenda](#) aims to achieve that 70% of 16-74 year olds have at least basic digital skills by 2025 and at least 80% of the population have basic digital skills by 2030. However, in 2021, 53.92 % of individuals in EU countries had at least basic digital skills (European Commission, 2023a).

To have at least basic overall digital skills, people must know how to do at least one activity in each of 5 different competence areas, see *Chapter 1.3.3*, for example searching information online, sending e-mails, protecting personal data or installing software.

The increasing involvement of digital technologies in the public sector will have an impact on the need for **experts and ICT specialists** who will be able to implement and manage these technologies. As ICT specialists are considered workers who have the ability to develop, operate and maintain ICT systems, and for whom ICT constitutes the main part of their job. A number of EU countries are already struggling with a shortage of ICT professionals, and this problem is even more acute in the public sector. Women should be more involved in ICT and encouraged to pursue education and careers in ICT. The Digital Compass (European Commission, 2021) sets a target of 20 million ICT professionals in the EU by 2030, with more women entering the workforce. In 2022, a total of about 9.4 million ICT professionals were available in the EU (European Commission, 2023a).

The importance of the policy is also demonstrated by the fact that the digital transformation is supported at EU level by a number of funding programmes such as the [Digital Europe Programme](#) with a total budget of €7.588 billion for the period 2021-2027.

The [DEP](#) aims to:

- build and strengthen the EU's high-performance computing;
- build and strengthen the core capabilities of artificial intelligence;
- improve the competitiveness of the sector by strengthening the EU's cybersecurity;
- ensure that the current and future workforce can easily acquire advanced digital skills;
- and expand the best use of digital capabilities in areas of public interest and society, including the deployment of interoperable solutions in areas of public interest.

This programme is supplemented by another investment programmes such as [Horizon Europe](#), the [Connecting Europe Facility](#) (CEF Digital) and the [Recovery and Resilience Facility](#) (RRF).

1. *Horizon Europe* aims to fund scientific research, innovation and support digital transformation. It will have a budget of €95 billion for the period 2021-2027.
2. *The Connecting Europe Facility (CEF)* is the EU's infrastructure programme. The digital part of the Connecting Europe Facility (CEF Digital) will support and accelerate public and private investment in digital connectivity infrastructures between 2021 and 2027.
3. *The Recovery and Resilience Facility* will finance reforms and investments in EU Member States from the start of the pandemic (February 2020) until 31 December 2026. In order to benefit from the facility, countries need to submit their own national recovery and resilience plan in the context of the economic recovery following the COVID-19 pandemic and allocate at least 20% of the recovery funds to projects that digitise their economies and societies and 37% to green measures.

These programmes aim to promote a more sustainable and resilient economy and society, ready for a green and digital transformation in line with EU priorities (European Commission, 2024).

The approach of individual EU countries to digitization also differs in the amount of financial resources spent. To set the same conditions for all EU countries, the European Commission for example defined the requirement of at least 20% of **Recovery and Resilience Plan** funding for the digital transformation in national economies. The countries that plan to invest the most in the area of human resources and eGovernment are for example Czechia, Slovakia, Hungary (digital re-skilling and up-skilling strategies) and Germany (eGovernment development). The least proportion of their RRP to the area of human resources is planning to invest Croatia, Lithuania and Estonia, in case of eGovernment measures are there countries as Hungary and Romania that are not planning to invest any important part of their RRP even though these countries have not yet achieved a necessary level in this area (Lacová and Šuplata, 2022).

1.3.2 Digital Skills, Digital Competences and Digital Education

Technological change requires people and businesses to acquire new **digital skills and competencies**. The EU has developed a number of policies and initiatives to improve citizens' digital skills as [*Digital Agenda for Europe*](#) or [*the Digital Single Market strategy*](#) (European Commission, 2023c).

The terms digital skills and digital competence are often used synonymously, but can have slightly different meanings depending on the context. **Digital skills** refer to the specific abilities and knowledge that an individual needs to successfully use digital technologies and tools. These can be basic skills such as working with a computer, using software, writing e-mails, searching for information on the Internet, etc. Digital skills are usually specific and measurable. **Digital competences** refer to a broader and more comprehensive set of skills and knowledge associated with the effective and critical use of digital technologies. It includes an understanding of the digital environment, the ability to communicate effectively, analyze information, solve problems and critically evaluate digital content. Digital competences focus more on the ability to apply digital skills in different contexts and at different levels.

Digital competences are understood as cross-cutting key competences, without which it is not possible to fully develop other key competences that are necessary for active employment in society and on the labour market

(NPI, 2024).

Digital literacy is a set of individual (digital) competences that an individual needs to use digital technologies safely, confidently, critically and creatively at work, in learning, in leisure and in their social life. However, the specific competences that make up digital literacy are not permanent, lasting competences. They change as the way and breadth of the use of digital technologies in society and in people's lives changes. However a digitally literate person should have the following skills:

- **Technical Skills:** Includes basic skills in using computers, mobile devices, internet browsers and various applications.
- **Information Skills:** Ability to search, filter and evaluate information from various sources on the Internet to be able to identify relevant and reliable information.

- **Communication Skills:** Ability to communicate effectively through digital media, including writing emails, using social networks, online chats, etc.
- **Critical Thinking:** Ability to critically evaluate digital content, distinguish between facts and misinformation, and be able to analyze and interpret information obtained online.
- **Security Skills:** Awareness of cyber threats, privacy and the ability to protect yourself and your digital devices from various forms of online attacks.
- **Legal and Ethical Aspects Skills:** Understanding the legal and ethical issues associated with the use of digital technologies such as copyright, intellectual property protection, online etiquette, etc.

Digital skills are at the forefront of the EU's concerns as they have a significant impact on shaping Europe's digital future. The covid-19 pandemic has shown how important digital skills are for work, but on the other hand, it has also highlighted gaps in digital education and skills (European Parliament, 2023). Eurostat statistics show that over 90% of people in the EU used the internet at least once a week in 2023. However, only 56% had basic or above basic digital skills (European Union, 2024), (Eurostat, 2024).

The EU is aware of the lack of digital skills among EU citizens and seeks to support projects and strategies to improve the level of digital skills in Europe. Digital skills are a key driver of EU competitiveness and innovation capacity. They are also a key factor for social cohesion and personal well-being. The [*Digital Competences Framework for Citizens*](#) defines so-called digital competences. Digital competences include *"the confident, critical and responsible use of digital technologies and their use for learning, work and participation in society"*. They are defined as a combination of knowledge, skills and attitudes (European Commission, 2016).

Core digital skills include:

- *Information and data literacy* - this area includes searching, accessing and navigating different types of digital content (files, websites, etc.).
- *Communication and collaboration* - this area involves using digital technologies to interact, communicate and collaborate with other people. This includes the use of public and private digital services and the ability to manage digital identity.
- *Digital content creation* - the skills needed to create and edit different types of digital content, including text and multimedia files.
- *Security* - the skills needed to protect equipment, content, personal data and privacy.
- *Problem solving* - the skills needed to identify needs and technical problems in the digital domain and then to choose appropriate technological solutions (Vuorikari, Kluzer and Punie, 2022).

The digital skills of employees are an important factor in strengthening Europe's competitiveness in the digital world. The European Commission is exploring the possibility of creating a European Digital Skills Certificate (EDSC), which would allow people to have their digital skills quickly and easily recognized by employers, training providers and others.

Ongoing digital and green transformations are bringing rapid economic restructuring that requires people to engage in lifelong learning. Moreover, these transformations require EU

countries to unlock their full potential in skills and innovation. This includes reforms aimed at improving the quality of education and training systems (European Parliament, 2023). The EU is investing in training programmes for EU citizens because digital skills are a springboard for employability and prosperity, see European Commission (2016).

1.4 Information Resources

Below is a list of recommended publications and information resources on the topic of Chapter 1 *Digital Transformation of the Economy, Society and Public Sector*.

1.4.1 Digital study materials

[eGovernment: Digitalizing Economy, Society and Governance](#)

[eGovernment: Digital Skills and Competences in the European Union](#)

1.4.2 Recommended literature

GIL-GARCIA, J. Ramon, DAWES, S. Sharon and Theresa A. PARDO (eds.). (2022). *Digital Government and Public Management. Generating Public Sector Innovation at the Crossroads of Research and Practice*. Routledge. ISBN 9781032193434.

NORTH, C. D. (1991). *Institutions, Institutional Change and Economic Performance*. Cambridge: Cambridge University press. ISBN 978-0521397346.

1.4.3 Documents and Strategies

[Commission decision C2023\(4288\)](#)

[eGovernment Survey 2022](#)

[European Skills Agenda](#)

[Digital Agenda for Europe](#)

[Digital Compass: Europe's vision for the Digital Decade](#)

[Digital Competences Framework for Citizens](#)

[Digital Decade Policy Programme](#)

[Digital Economy Outlook](#)

[Digital Europe Programme](#)

[Digital Single Market strategy](#)

[Europe 2020](#)

[Going Digital: Shaping Policies, Improving Lives](#)

[Green Deal for Europe](#)

[Measuring the Digital Economy: A New Perspective](#)

[Measuring the Digital Transformation: A Roadmap for the Future](#)

[Multiannual Financial Framework for the EU](#)

[Recommendation on Digital Government Strategies](#)

[Shaping Europe's Digital Future](#)

[Treaty on European Union](#)

[United Nations Charter](#)

1.4.4 Web Sites

[A Digital Decade for Europe](#)

[Connecting Europe Facility](#)

[DESI 2023 dashboard for the Digital Decade](#)

[Digital Economy and Society Index \(DESI\)](#)

[Digital Government Toolkit](#)

[Digital Public Administration factsheets](#)

[Digital Transformation](#)

[eGovernment Benchmark](#)

[E-Government Development Index \(EGDI\)](#)

[European Union](#)

[Horizon Europe](#)

[Maastricht Treaty](#)

[Organisation for European Cooperation and Development](#)

[Recovery and Resilience Facility](#)

[United Nations](#)

1.4.5 Tasks and test questions

Task 1: [Digital skills](#)

- ✓ Test your digital skills

Sources

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2 Effective Public Administration and eGovernment

Increasing of quality of public administration is considered as the key aspect in ensuring a country's long-term competitiveness and well-being. In the field of public affairs administration there is currently significantly promoted the concept of **Good Governance**.

The concept of Good Governance can include a group of requirements that aim to ensure the quality and proper functioning of public administration in the conditions and environment of a modern democratic legal state based on respect for the fundamental rights and freedoms of individuals. This concept is not legislatively defined at the national or international level. Documents dealing with this issue are usually defining Good Governance through its individual components; known as **principles of Good Governance**, see Potěšil (2008). Generally, Good Governance is the designation for high-quality and properly functioning public administration with an integrated element of subsidiarity, allowing for the participation of the citizens and respecting democratic values and the rule of contemporary modern state.

The concept of Good Governance emphasizes the ideas of democracy in the management of public affairs, together with the need to introduce and more encourage the participation of citizens in the decision-making processes on public affairs.

(World Bank, 2024)

The success of Good Governance concept implementation indices the quality of public administration functioning and overall maturity of public administration in individual countries (Kooiman, 2003). Good Governance is also discussed as the key factor of sustained growth in developed countries and one of the most important elements in the fight for poverty reduction and equitable economic growth in developing countries. The applying of the Good Governance concept is also promoted by international, multinational and national subjects such the World Bank (WB), United Nations (UN), International Monetary Fund (IMF), Organisation for Economic Co-Operation and Development (OECD), European Union (EU) or Council of Europe (CE).

2.1 Concept of Good Governance

With regard to the fact that the proper performance of administrative practice stands in the focus of interest of many multinational and international organizations, the concept of Good Governance is described in a number of important documents with international scope. Despite the fact that these acts in form of recommendations and resolutions are not legally binding, the countries have at least a political commitment to act in accordance with them.

The crucial role in shaping the concept of Good Governance has been played by the Council of Europe. Comprehensive look at the issue of Good Governance is available in the [CE Recommendation on good administration](#) from 2007. This act aims to define the basic right to good administration and to facilitate its effective implementation in practice.

Good Governance is defined here through **principles of Good Governance**:

- Principle of lawfulness,
- equality,
- impartiality,
- proportionality,
- legal certainty,
- principle of taking action within a reasonable time limit,
- participation,
- respect for privacy and transparency (Council of Europe, 2007).

The concept of Good Governance is not only one of the contemporary current trends of public administration modernization in EU but it is also an important subject of a number of research studies that pay attention e.g. to the public administration reform in EU member countries or the value of Good Governance. Benefit of evaluating the quality of public administration is that the quantification of governance and their individual dimensions may lead to improved understanding of the concept, towards its greater relevance to practice. More importantly, however, is that the measured results influence recommendations of political analysts in addressing public policy issues.

2.1.1 Approaches to Evaluating of Good Governance

The current public administration is interpreted in the broad sense in the context of theoretical works and referred to as **Governance**. Good Governance is an ideal state government, which is as a whole difficult to achieve, but it determines the quality of governance in individual countries (Agere, 2000). Although this is an area with a relatively short history, to the modern measuring of governance has been dedicated a large number of projects on which basis was created wide portfolio of governance indicators.

The beginnings of the application of the **governance indicators** are in the 80s of the 20th century, when the qualitative case studies were published emphasizing the importance of governance for socio-economic development (North, 1991). The main sponsor of these research projects were organizations such as USAID, International Monetary Fund, World Bank, United Nations or European Union.

Due to the important interdependence between the governance, human rights and democracy, and the fact that human rights and democracy are considered as key aspects of governance, many approaches to measuring Good Governance use the indicators of the aforementioned areas. However, over time the use of indicators was extended to empirical research (European Commission, 2014). The first impulse of empirical research in the area of Good Governance was an effort to find the relationship between political and legal institutions and economic growth. For this purpose were used indicators measuring human rights and freedoms, e.g. [Array of Freedom House](#), on which was inferred level of law (Rule of Law) or indicators assessing the degree of political stability, on the basis of which was exerted protection and enforcement of property rights, which are also regarded as an important aspect of Good Governance. Conjunction of standard rating scales and objective statistical

data allowed the emergence of specific approach aggregating these indicators into indices measuring the state of some aspect of governance (Potůček et al., 2007). Examples are two indexes comparing economic freedom: [Index of Economic Freedom](#) and [Economic Freedom of the World Index](#).

Indicators of Good Governance were established due to the inadequacy of indicators created for other purpose than for measuring of Good Governance. Approaches to evaluating of individual aspects of the governance focused on expert assessment panels that enabled comparisons among countries using a variety of indicators. The pioneers of this type of projects became private consulting firms already in the late 70s and 80s of the 20th century.

In academic research, the data for assessment of governance began to be used in recent years. Parallel to these commercial activities, gradually began to be promoted non-profit and academic projects of expert measurement of governance. The most famous is the [Corruption Perception Index of Transparency International](#). Other projects dealing with the evaluation of governance are e.g. Studies of the World Bank [World Enterprise Survey](#), an investigation of the University of the United Nations' [World Governance Survey](#) or the [Transformation Index](#) by Bertelsmann Foundation and [Global Governance Initiative](#) of the World Economic Forum (Court and Hyden, 2003).

Very important contribution to the development of Good Governance indicators is a project of the World Bank Institute [Aggregate Governance Indicators](#), see UN (2024) called *Worldwide Governance Indicators (WGI)*.

The WGI consists of six key components:

- Voice and Accountability,
- Political Stability and Absence of Violence,
- Government Effectiveness,
- Regulatory Quality,
- Rule of Law,
- Control of Corruption.

The WGI aggregate data from more than 30 think tanks, international organizations, nongovernmental organizations, and private firms across the world selected on the basis of **three key criteria:**

- 1) they are produced by credible organizations;
- 2) they provide comparable cross-country data;
- 3) they are regularly updated.

The data reflect the diverse views on governance of many stakeholders worldwide, including tens of thousands of survey respondents and experts.

Benefit of indicators of Good Governance lies primarily in the fact that they highlighted the key role of Good Governance for successful socio-economic development. Relationship between quality of governance and economic development gradually gained unquestioned nature, see UN (2024).

2.1.2 European Commission Initiatives in the Area of Good Governance

The European Union strongly supports the concept of Good Governance and supports the increase of quality of public administration. Good Governance is considered as the key aspect in ensuring a country's long-term competitiveness and well-being. Therefore the quality improving of public administration has been an important funding objective of the European structural investments in several member states (European Commission, 2014).

The application of Good Governance in European public administration systems is affected mainly due to effects of severe economic and financial factors, the application of the principles of strategic planning and the formulation of ideas about the goals of reform and ways of their implementation, and to some extent also due to efforts to develop the European Administrative Space (Lacina, 2010).

The European Union is actively engaged in the modernization of public administration not only of own institutional structure but also in EU member countries. Since the beginning of 2000 it is possible to record at European level a comprehensive attempt about the **Reform of European governance**. The aim of this reform is, inter alia, to ensure the efficient, clearer and more open government, especially in areas that are entrusted to the EU. The basic document formulating the principles of Good Governance is the [White Paper on European Governance](#) from 2001.

The basic principles of European Good Governance are:

- Openness - it involves transparency and accessibility of government actions and decisions to the public. Openness ensures that citizens have access to information about government policies, actions, and decisions.
- Participation - it highlights the importance of involving citizens in decision-making processes. A government that actively engages its citizens in policymaking benefits from diverse perspectives and improved decision quality.
- Accountability - it refers to the responsibility and answerability of government officials and institutions for their actions and decisions. Accountability mechanisms help ensure that those in power are answerable to the public.
- Efficiency – it stresses that effective governance positively impacts society and the economy, leading to stability and prosperity.
- Solidarity - it is reflected in various policies and actions of the European Union aimed at promoting social cohesion, mutual support, and cooperation among member states and their citizens (European Commission, 2001).

The European Commission has implemented **modern administration**, which is defined as management based on the principles of EU (Europa, 2024). In recent years, the Commission and its staff engaged in the task of redesigning the administrative systems and procedures, management of financial and human resources and way of planning their activities. This led to the most radical internal modernization since the establishment of the European Commission in 1958 (European Commission, 2010).

Among the **essential elements that contribute to the modernization of the administration of the Commission** were included:

- efficiency,
- transparency,
- ethics and conduct,
- equal opportunities,
- electronic Commission,
- environmentally friendly Commission
- and multilingualism, see European Commission (2014).

The successful implementation of Good Governance concept in the individual countries indices the quality of governance and overall maturity of public administration in the state.

2.2 eGovernance and eGovernment

With the development of inventions in the field of ICT, there have always been considerations about their practical use in public administration.

"the difficulties of a large number of people and their geographical spatial distribution must be overcome if possible, various modern means of communication help to a great extent"

(Tomáš Garrigue Masaryk, 1st President of Czechoslovakia)

Public administration until the mid-1980s is associated with insufficient functioning of public administration institutions, the term traditional administration or traditional bureaucracy is used. Such public administration is considered an outdated, rather dysfunctional way of managing the public sector (in terms of efficiency).

Just a few months after the landing of the first man on the moon, another important event in the history of mankind happened, the first data flowed through the **Internet**. This happened exactly more than fifty years ago, in 1969, and today this date is celebrated as Internet Day. But the nineties are considered to be the key period for its expansion. It is estimated that more than 3.7 billion people, or roughly half the planet, have access to the web today. With the development of the Internet, internal and external communication in public administration and the provision of eServices is becoming easier.

The use of modern information and communication technologies aims to optimize the activities of public administration and thus offer citizens and companies more professional, faster and more comprehensible service. A significant increase in the use of ICTs over the past few years, has had a great impact on different aspects of society and economic activities by making everyday procedures easier and more efficient.

Prerequisites for effective ICT involvement in public administration:

- sufficient equipment of public administration organizations with information technologies,
- making online services available to clients,
- a sufficient number of officials able to work with demanding information systems,
- the development of an information society where individuals and businesses have access to the Internet and use it.

ICTs are a priority element of the modernization of public administration, and their introduction is referred to as the electronicization of public administration.

Reform initiatives in the field of electronic public administration mainly include:

- converting communication from paper to electronic
- introducing new information and transaction services for citizens
- implementation of eDemocracy
- creation of new public administration management information systems.

2.2.1 Concepts and Definitions

Electronic governance, shortly known as **eGovernance** refers to the utilization of information and communication technology (ICT) for providing government services, disseminating information, communication activities, and incorporation of miscellaneous stand alone system and services between different models, processes and interaction within the overall structure.

eGovernance is a tool, that makes available various government services to citizens in a convenient way, such as:

- Better provision of government services
- Improved interaction with different groups
- Citizen empowerment through access to information
- Efficient government management

There are three main domains of eGovernance:

- E-administration: improving government processes
- E-services: connecting individual citizens with their government
- E-society: building interactions with and within civil society.

There are many definitions of the meaning of the term **eGovernment** and different definitions are used by different organizations.

eGovernment is the application of Information and Communication Technologies (ICTs) to government functions and procedures with the purpose of increasing efficiency, transparency and citizen participation.

(European Union, 2015)

eGovernment may be defined as the integration of information and communication technology, in public administration, i.e. to various government processes, operations, and structures with the purpose of enhancing transparency, efficiency, accountability and citizen participation. The implementation of eGovernment usually aims to reduce costs and to increase efficiency in public administration.

eGovernment:

- Facilitates greater level of efficiency and effectiveness in government activities and process,
- Enhances quality of public services,
- Simplifies administrative processes,
- Improves access to information,
- Increases communication between various government agencies,
- Strengthen support to public policy,
- Enables seamless government.

Public administration, using the possibilities of information and communication technologies (ICT) as well as artificial intelligence, contributes to more effective communication between the state, citizens and businesses. The intention of the digitization of public administration is therefore to limit the need for personal visits to offices and paperwork and to increase the availability and efficiency of public administration services, while accessibility and user friendliness are also an important element of appropriately implemented solutions (Pilný, 2016).

In terms of ties to communication partners, eGovernment is divided into four categories (Veber et al., 2018):

- G2C (Government to Citizens) – public administration to citizens,
- G2B/G2NP (Government to Business/ Government to Non-profit) – public administration to entrepreneurs, non-profit organizations,
- G2G (Government to Government) – public administration to public administration,
- G2E (Government to Employees) – public administration to employees.

Despite the above-mentioned trend of digital transformation in the field of public administration, it is always necessary to think about public administration services being available to all groups of the population, and therefore to preserve the possibility of personal contact of the citizen with the office for disadvantaged groups without sufficient digital literacy, through contact points public administration (Veber et al., 2018).

2.3 Participation and Digital Participation

The term **participation** comes from the Latin "partem capere", which means to participate in something, to have a share in something. Good political decisions cannot be made without listening to citizens and without their participation. **Participatory administration** is a specific direction of public administration that is oriented towards cooperation with the public. The key point of this concept is cooperation and partnership between public administration and the public in decision-making.

Participatory governance represents a management approach in which decision-makers, whether primary or delegated, undertake to satisfactorily involve stakeholders in governance. It is based on citizens having a voice in the formulation and implementation of policy that affects or directly affects them.

MyGov (2024)

Emphasis on the use of **participatory processes** is contained in a number of international commitments accepted by international organizations and states. As part of European legislation, requirements to ensure citizen participation are also enshrined in the *Treaty of Lisbon* and the *Charter of Fundamental Rights of the EU*. The EU intends, through civil society and their organizations, to strengthen participatory democracy, its legitimacy and a better perception by its citizens. The EU calls for the implementation of certain participatory methods of governance and dialogue with citizens also at regional and local levels, within the so-called municipal policies of individual member states.

The main goal of participation is the involvement of the public in the planned and decision-making processes of the city, in the sense of the involvement of various groups of actors.

(Nevima et al., 2023).

According to participation, the public can be divided into general, organized or professional. Participation can not only ensure citizens' demands, but also help them understand the reasons for some of the city's decisions. Another task of participation is to bring feedback to the city management from those who are affected by the proposed plans and decisions.

eDemocracy is also known as digital democracy or Internet democracy. eDemocracy is the use of information and communication technology (ICT) in political and governance processes.

(Agere, 2000).

The term **digital participation** refers to the active involvement in digital society through the use of modern information and communication technology, such as the Internet. This participation includes access to not only the Internet but also various online services and content.

The active use of technologies supporting participatory processes is a matter of the last two decades. Participatory processes bring new opportunities for online participation in debates, active involvement in decision-making, and in some cases even in the resolution of public affairs itself. The concept of Good Governance, which emphasizes the transparency of public administration and the participation of citizens in the discussion of public policies, is a support for the ever-wider integration of these processes into society (Agere, 2000).

2.3.1 eParticipation in the Context of Smart Cities

Smart City is a dynamic and constantly evolving public policy development process. It significantly applies the principles of sustainable development within the organization of the city and relies on the use of innovative modern technologies with the aim of improving the quality of life of citizens and making the administration of public affairs more efficient (Nevima et al., 2023).

This concept finds its widest application in the field of energy and transport, which can be solved more effectively by deploying appropriate information and communication technologies. However, the Smart City concept does not only include the two areas mentioned above, it can also be applied to others, e.g. water management, waste management, eGovernment or crisis management. Smart technologies are used both in buildings and in the urban environment (parks, city streets, etc.).

We can consider a city to be intelligent "smart" if:

- uses a participatory governance model,
- invests in the development of human resources,
- invests in social capital,
- and builds traditional and modern infrastructures.

Using these aspects, Smart City achieves sustainable economic growth, high quality of life and efficient use of natural resources (Caragliu, Del and Nijkamp, 2011).

The Smart Cities strategy is reflected in key EU strategic documents such as the [Europe 2020 Strategy](#) (EUR-Lex, 2024). This generally stipulates support in practically all sectoral policies that can be supported within the Smart Cities concept. Already in 2007, however, the Smart City concept appeared as part of the [Strategic European Technology Plan](#) (SET-Plan).

In the European environment, information and communication technologies are viewed as the primary technological stimulus for city development. Information and communication technologies are a key enabler for cities to address current challenges “smartly” (Manville et al., 2014).

Among the most used technologies in urban conditions are mainly:

- Internet of Things (IoT),
- Big data,
- Open data,
- Cloud computing,
- Artificial Intelligence,
- Virtual reality,
- Mobile applications etc. (OECD, 2011).

Information and communication technologies connect and enhance networks of people, businesses, infrastructures, resources, energy and spaces and provide intelligent organizational and management tools (Manville et al., 2014).

The natural spread of innovations from cities to their hinterland and further into rural areas, and above all the need to develop places that are not up to the pace of big cities, is the reason for the concept's expansion to a wider area as well. The use of smart elements in rural development is now called a **Smart Village** and the conceptual development of an integrated region is then called a **Smart Region** (SMART JMK, 2024), see Figure 2.



Figure 2 Smart Region

Source: SMART JMK (2024)

One way to define this dynamic system is to focus on the process of formation, which is similar across different cities, not only on the result, i.e. specific initiatives and services (Kopáčková a Komárková, 2020). The process of forming smart cities can be divided into individual phases. As part of the first phase, a concept is drawn up, which should be based on the city's characteristics. It includes the preparation of specific programs and projects that count on the involvement of citizens. The second phase is the actual implementation of the concept in the form of specific programs and projects. Both phases should accept the basic **SMART principles** on which the concept of a smart city is built.

The first type of principles focuses on the general principles of smart city development, i.e. **creativity** and **sustainability** (Nevima et al., 2023). From this point of view, creativity means a change of thinking when designing new services, solving old problems with new methods, or finding new ways of engaging citizens. Support for creativity and the transfer of knowledge at the level of citizens and businesses can also be included here. Examples of such activities can be research centers, innovation incubators, various forms of public-private partnerships, and communication platforms for citizen engagement. In summary, creativity means creating something new.

The term sustainability cannot be understood only as the preservation of the natural environment and the saving of energy and water, but also the preservation of cultural heritage. It is a behavior that leads to maintaining the balance between man and the ecosystem.

Sustainability without innovation means stagnation, on the contrary, unlimited creativity can have negative consequences in the future.

(Nevima et al., 2023).

The second type of principles are **management principles**, focused on the process of creating smart cities. This is smart public sector management that requires the city to have strong leadership with the vision, support and ability to make this change happen.

Smart administration has three basic pillars:

- 3E management,
- transparency and
- participation.

3E management can be defined as the concept of transforming inputs into expected results from the perspective of three criteria. They are:

- Economy - means the lowest possible expenses,
- effectiveness - expresses the degree of fulfillment of goals
- efficiency - achieving the maximum expected outputs for the minimum amount of money.

These are criteria for smart management of public funds (smart governance).

The **transparency** pillar is closely related to 3E management. All activities, especially the expenditure of public funds, should be clear and transparent. With the development of information technology, cities have become the owners of a large amount of data that can be freely available to all without copyright, patent or other control mechanisms. Therefore, another subject of interest, namely data openness, becomes an integral part of this pillar. A transparent public administration enables citizens to access this data, thereby enabling effective public supervision of the administration of the city, municipality or region.

The third pillar, **participation**, means that citizens, businesses, non-governmental organizations and other parties can participate in the process of shaping smart cities. With respect to the level of public involvement in the city's events, participation has different goals and different degrees of effectiveness. For each type of project and its phase, it is necessary to select an appropriate level of public involvement.

It can be:

- *one-way transmission of information* - timely and comprehensible information about events in the city
- *consultation* - communication with the public about projects that can affect their quality of life (electronic voting, web forum, questionnaires, public discussion, discussions)
- *involvement* - here the public is already directly involved in the plans of the city project, so that they reflect their interests and expectations (workshops, competitions, joint meetings over the map - documentation, outdoor events)
- *cooperation* - this is a higher form of public involvement in decision-making during the entire project management process
- *management by citizens* - this is the highest degree of participation, where the city management is only in the role of implementers. The entire management of the

project is taken over by the public, rather professional or organized (Nevima et al., 2023).

Civic participation plays a key role in promoting democracy, the rule of law, social inclusion (reducing inequalities and social conflicts) and equitable economic development.

2.3.2 eParticipation and the Spread of Participatory Technologies

Smart City is defined as a municipality that pays particular attention to the quality of life, and where **citizens are actively involved in the management of public affairs**, i.e. they decide, among other things, on the need for and choice of specific public goods. (Nevima et al., 2023).

The task of a Smart City is to create suitable living conditions for its residents. The quality of life in the city must be such that the existing population wants to live in the city, and at the same time, so that the city is also attractive to potential residents, entrepreneurs, investors and tourists (Nevima et al., 2023). The purpose of smart cities is, with the help of the public, private and non-profit sectors, to implement such projects, initiatives and activities that have a positive effect on the quality of life in the city and its development (Manville et al., 2014).

Important elements of the attractiveness of living conditions are, for example, the quality of health services, education including lifelong learning, personal and cyber security, quality of housing, self-realization in free time, quality of cultural facilities and tourist attractiveness. In a smart city, citizens have access to a comfortable, healthy, clean, safe and active lifestyle, which includes several aspects such as cheap energy source, convenient public transport, quality education, faster public services, clean water sources and air, low crime rate and access to various entertainment and cultural experiences (Bibri, 2018, p. 16).

A key role in terms of the Smart Cities concept is played by the authority, which must be prepared legislatively, methodically and technically in order to meet the high demands placed on it in the era of smart cities and regions.

The basic demands placed on local administration are:

- Transparency
- Interactivity
- Openness
- IoT readiness
- Security
- Stability
- User friendliness

The municipal office can be divided into a part called the *front office* (communication with the citizen) and the *back office* (internal administration). For the front office, it is necessary to focus primarily on online interaction with the citizen and with surrounding legal entities, as well as on online transparency, i.e. the published outputs of the office's routine activities (e.g. financial results, contracts) and, last but not least, on the opening of data for the possibility of their further use, i.e. in machine-readable form. For the back office part, it is necessary to

connect and secure the office's systems and ensure their full and correct use by the office's employees (Svítek et al., 2018).

Technological innovations in the public sector contribute to smarter governance, more effective communication, faster response and closer access to the citizen. Digital technologies can contribute, for example, to reducing input resources, improving the quality of life of the population and to the sustainable development of the competitiveness of the economy.

Information and communication technologies connect and enhance networks of people, businesses, infrastructures, resources, energy and spaces and provide intelligent organizational and management tools.

(Manville et al., 2014).

Currently, the active use of modern technologies brings new possibilities supporting participatory processes in the form of online participation of citizens in decision-making in public administration. In the area of citizen participation, a number of tools are available to facilitate it. The Covid -19 pandemic has shown that digital tools are a useful helper, however, they will not by themselves lead to greater citizen involvement, nor is the ambition to replace personal forms of participation that are beneficial. Digital tools will help especially where personal participation is difficult or help to expand the number of respondents. An effective combination of digital and traditional tools is particularly suitable.

The common features of most definitions of eParticipation are the use of ICT, creating space, addressing or involving citizens.

(Bokša, 2019).

eParticipation is carried out using ICT tools, blogs, chats, websites, eSurveys, etc. Similar to the previous breakdown of eGovernment, we distinguish three types of technology according to who is the recipient and who is the provider (Linders, 2012):

- G2C (government to citizen)
- C2G (citizen to government)
- C2C (citizen to citizen)

In the case of G2C technologies, it is about the availability of open data, which creates conditions for free processing by any entity and thereby supports participation and transparency. Within C2G technology, three levels of active public involvement are distinguished:

- Communication and consultation (applications and tools enabling discussion, collection of ideas, voting)
- Active involvement (tools enabling involvement in planning and the very solution of project proposals)
- Monitoring (applications for service level assessment, defect reporting, mapping of dangerous places)

C2C technology uses tools that give citizens the opportunity to organize themselves in virtual space without the necessary participation of public administration (Nevima et al., 2023).

Examples of eParticipation tools:

- In consultation phase: eRulemaking, IdeaScale, eDemocracy Party
- In engagement phase: CrisisCommons, Challenge.gov, PeerToPatent)
- In the monitoring phase: SeeClickFix, FixMyStreet

The successful implementation of electronic technologies in city administration depends primarily on the acceptance of companies. This means that the public administration will implement and manage the new tools and that the citizens will accept and use them. Promotion using various marketing tools is appropriate.

2.4 Information Resources

Below is a list of recommended publications and information resources on the topic of Chapter 2 *Effective Public Administration and eGovernment*.

2.4.1 Digital study materials

[eGovernment: Concept of Good Governance](#)

2.4.2 Recommended literature

AGERE, S. (2000). *Promoting Good Governance: Principles, Practices and Perspectives*. London: Commonwealth Secretariat. ISBN 978-0850926293

BIBRI, Simon Elias. *Smart sustainable cities of the future*. New York, NY: Springer Berlin Heidelberg. ISBN 9783319739809.

KOOIMAN, J. (2003). *Governing as Governance*. London: Sage. ISBN 9781446215012

PAULIN, Alois (2018). *Smart City Governance*. Elsevier. ISBN 9780128162248.

2.4.3 Documents and Strategies

[CE Recommendation on good administration](#)

[Charter of Fundamental Rights of the EU](#)

[Europe 2020 Strategy](#)

[Strategic European Technology Plan](#)

[Treaty of Lisbon](#)

[White Paper on European Governance](#)

2.4.4 Web Sites

[Array of Freedom House](#)

[Corruption Perception Index of Transparency International](#)

[Economic Freedom of the World Index](#)

[Global Governance Initiative](#)

[Index of Economic Freedom](#)

[Transformation Index](#)

[World Enterprise Survey](#)

[World Governance Survey](#)

[Worldwide Governance Indicators](#)

2.4.5 Tasks and test questions

Task 1: [WGI - Aggregate indicators of World Bank](#)

- ✓ Check Governance indicators of your country

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3 European Digital Identity

For the successful creation of a [Digital single market](#), it is essential to have electronic public administration in place. It is a very important prerequisite for the functioning of the digital single market, as eGovernment enables citizens to work, study, live and receive pensions anywhere in the European Union and also enables entrepreneurs to set up and run a business anywhere in the European Union. One of the key aspects of digital public services is ensuring a secure digital identity. [Digital identity](#) is an electronic means of identifying persons (European Commission, 2024).

Recently, the digitization of a large number of public and private services has been implemented within the countries of the European Union, which is related to the digital transformation of the economies of the countries of Europe. Such fundamental changes in the functioning of society require the existence of safe and reliable digital identification systems (European Parliament, 2023).

3.1 Digital Single Market

Digital Single Market is one of the main priorities of the 2010 *Digital Agenda for Europe* strategy, where for the first time, the key role of information and communication technologies in achieving European goals was established. The 2015 [Digital Single Market Strategy](#) further developed the Digital Agenda, bringing concrete provisions based on three pillars to ensure a fair, open and secure digital environment:

- ensuring better access for consumers and businesses to digital goods and services across Europe, for example by removing barriers to cross-border e-commerce and access to online content while increasing consumer protection,
- creating appropriate conditions for the growth of digital networks and services, by providing high-speed, secure and trustworthy infrastructures and services supported by the right regulatory conditions,
- and maximizing the growth potential of the digital economy so that every European can fully enjoy its benefits – notably by enhancing digital skills, which are essential for an inclusive digital society.

The aim of this strategy is to remove obstacles and create a single digital market within the European Union. It is a set of policies and measures aimed at supporting the digital economy, innovation and growth in the EU.

The Digital Single Market is one of the sectors of the European Single Market. It covers digital marketing, electronic commerce and telecommunication. The Digital Single Market means removing national barriers to transactions that take place online.

In order to keep pace with digital technologies, business models and services that are changing at an unprecedented speed, the Commission presented an update of the EU legal framework.

The new rules aim to improve the governance of the digital space and digital services, including social media platforms (European Parliament, 2023).

1. [Regulation on digital services](#) - the aim is to create a safer digital space for users and companies and to protect basic rights in the digital environment. Digital companies in the EU will be responsible for the content published on their platforms. The Council adopted the Digital Services Act on 4 October 2022. The new rules apply from 17 February 2024.

2. [Digital Markets Act](#) - aims to ensure a level playing field for all digital companies to guarantee a competitive and fair digital sector while fostering growth and innovation. It sets clear rules for large platforms to ensure that they do not abuse their position. The Council adopted the Digital Markets Act on 18 July 2022, it entered into force on 2 May 2023.

3.1.1 Electronic Identification

Secure electronic identification is a fundamental aspect of everyday life in the digital world and is one of the tools to ensure secure access to online services and to conduct electronic transactions more securely.

(European Commission, 2024)

Electronic identification can guarantee the unique identification of a person and ensure that the correct service is delivered to the person who is actually entitled to it. Among the most significant European legislation regarding digitization is [Regulation No. 910/2014 of the European Parliament and of the Council on electronic identification and trust services for electronic transactions in the internal market](#), from 2014, which is more commonly known under the abbreviated name **eIDAS**.

The regulation deals with electronic signatures, digital certificates and other methods of verification, which are essential for the identification of parties in electronic transactions and communications. The eIDAS regulation requires EU member states to establish national electronic identification systems that meet certain technical and security standards. These national systems are then linked, allowing citizens to use their national eID to access online services in other EU countries (European Parliament, 2023).

Thus, a fundamental obstacle to the single market, consisting in the mutual non-recognition of electronic identification systems between member states, was removed. From 28 September 2018, Member States enabled online access to public sector services through means of electronic identification, including notified foreign electronic identification systems (ePravo, 2023). On the basis of the eIDAS regulation, for example, an Austrian citizen can log in to the Czech portal MY TAXES via ID Austria.

The eIDAS regulation in practice:

- ensures that people and businesses can use their own **national electronic identification systems** to access public services available online in other EU countries;

- creates a **European internal market for trust-building services** by ensuring that these services operate cross-border and have the same legal status as their traditional paper-based equivalents.

Through the eIDAS system, the EU has succeeded in laying the foundations and a clear legal framework for citizens, companies and public administration bodies for secure access to services and conducting online transactions.

The introduction of the eIDAS system represents higher security and greater convenience for online activities, such as:

- submitting tax returns,
- registration at a foreign university,
- remote opening of a bank account,
- establishment of a company in another member state,
- verification of payments on the Internet,
- submission of offers online and others (Europa, 2023).

According to the eIDAS regulation, member states are also obliged to compile, maintain and publish **trusted lists of qualified trusted service providers** and the services provided by them. Lists must be published in a secure manner, electronically signed or sealed in a format suitable for automated processing. In order to allow access to the trusted lists of all Member States, the Commission shall make the trusted lists notified by the Member States available to the public through a secure channel to an authenticated web server, in a signed or sealed form suitable for automated processing. All trusted service providers who have obtained a qualified status in accordance with the eIDAS regulation can use the so-called [EU trust mark](#).

The EU Trustmark provides assurance that providers of electronic trust-building services and the trust-building services they offer are qualified and comply with the rules set out in the eIDAS Regulation. This ensures a high quality of trusted services that are regulated throughout the EU (European Commission, 2024).

3.1.2 European Digital Identity Wallet

The **European digital identity** enables cross-border mutual recognition of national electronic identification systems. Thanks to it, citizens of the European Union can identify and authenticate themselves online, thus providing citizens with access to online services of other member states of the European Union using their national electronic identity card. The most fundamental innovation for the area of digital identity contained in [the proposed revision of the eIDAS regulation](#) is the [European Digital Identity Wallet](#), which will supplement the currently available means for electronic identification.

The European digital identity wallet will not only be a means of electronic identification, but will also have other functions, allowing for example:

- storing electronic attributes (for example, university diploma, driver's license, vaccination certificate, etc.);
- creation of qualified electronic signatures and seals.

All EU citizens, residents and businesses will have the right to own an EU digital identity wallet that will be accepted in all member states. The European Digital Identity Wallet will be issued under the announced electronic identification system with a high level of assurance. It will be possible to use it for public and private cross-border services (ePravo, 2023).

Among the biggest benefits are time savings in administrative processes, during identity verification, simpler and standardized communication with the authorities, lower risk of loss and theft of documents and increased security and improved protection of personal data, reduced barriers to access to the domestic and foreign labor market, and strengthening of the global trade. The European digital identity wallet should be introduced in all EU states by 2024 at the latest (European Commission, 2024).

3.2 Digital Identity and Electronic Services of the Authorities in the Czech Republic

A prerequisite for effective communication between public administration and communication partners is the digitization of internal public administration activities (digitization of agendas and automation of routine activities) and the internal connectivity of state offices, but above all the digitization of external activities in the form of a sufficient offer of online eGovernment services, for their possible use by entrepreneurs, citizens, non-profit organizations and other entities (Veber et al., 2018). In doing so, the emphasis is on making public services available to all entities online, without the need for, or at least minimizing, visits to the office.

Public administration institutions should also apply the *once only* principle, i.e. they should obtain information from citizens, entrepreneurs and companies only once. Subsequently, they would be stored in the relevant register and a secure communication infrastructure would allow their sharing by various public administration institutions (Veber et al., 2018). This is a "state where data circulates, not citizens", as stated by the Ministry of the Interior of the Czech Republic, see (Office of the Government of the Czech Republic, 2023).

Since 2012, this system in the Czech Republic has been ensured by the so-called Basic Public Administration Registers. There are four basic registers (CZ.NIC, 2023):

- ROB - Register of Residents (for citizens of the Czech Republic and foreigners with a residence permit),
- ROS - Register of Persons (for natural and legal persons and public authorities),
- RÚIAN - Register of Territorial Identification and Real Estate (for addresses, parcels and buildings),
- RPPO - Register of Rights and Obligations (for information to control access to other registers).

The Information System of Basic Registers (ISZR) then ensures communication between the registers and the individual bodies of state administration and self-government.

Electronic services of the authorities in the Czech Republic can be accessed (among other) by [IIG – International ID Gateway \(eIDAS\)](#), it means by usage of some of electronic identity

established at EU country. It is an international gateway that is used to log in to Czech services with means of electronic identification issued in other countries. Electronic identification takes place through electronic identification tools (e.g. electronic identity cards). The intention is to recognize electronic identification tools across the entire EU.

The [National Point for Identification and Authentication](#) is a public administration information system operated by the Czech state supporting the process of electronic identification and authentication through a qualified system. It was put into operation on 1 July 2018 in connection with the entry into force of the [Act on Electronic Identification](#).

Logging in to eGovernment services in the Czech Republic takes place mainly through the [Citizen Portal](#).

3.2.1 Electronic Identity in the Czech Republic for Foreigners

For usage of the electronic services of the authorities in the Czech Republic the person must be provided electronic identity by:

- DSFO (Data Box of a natural person)
- Or NIA ID (Username, Password, SMS)
- Or Mobile eGovernment key (MEG)
- Or BankID

[DSFO \(Data Box of a natural person\)](#) is a tool for submitting and delivering documents primarily to state institutions, which can also serve as a means of electronic identification in relation to several selected systems. It can also be issued to a natural person who does not have the citizenship of the Czech Republic, if he submits documents about his name or names, surname, maiden name, date of birth, place and country of birth and nationality.

The [Digital and Information Agency](#) will establish a data box for a natural person free of charge at the request of any natural person who is fully capable of legal acts, within 3 working days from the date of submission of the request. Each natural person is entitled to obtain one natural person data box.

The requirements for an application for the establishment of a data box of a natural person are:

- name or names, surname and any changes thereof,
- birth name,
- day, month and year of birth,
- place of birth and country of birth
- citizenship.

If the request for a natural person's data box meets the above requirements, the DIA will establish a natural person's data box, otherwise it will notify the natural person that a natural person's data box cannot be established after a previous unsuccessful request to eliminate application deficiencies.

Establishment of DSFO:

1. in person - at the contact point of the [Czech POINT](#) public administration, where the applicant presents a valid identity document (citizen card, passport) or a residence permit as a separate document containing a data carrier with biometric data (ePKP)),
2. in writing with an officially verified signature (and an officially verified translation of the document) to the address of DIA Czech Republic:

Digitální a informační agentura, odbor eGovernmentu
náměstí Hrdinů 1634/3
140 21 Praha 4

When preparing the official signature verification by foreign authorities, it is necessary to verify the conditions under which the signature verification is recognized by the Czech Republic, for example in the form of a so-called Apostille followed by an officially verified translation of the document, etc.

For the obtaining [NIA ID](#) and [MEG](#) it is needed the identification document issued in the Czech Republic.

To get started it is needed to have:

- a valid residence permit issued by the Czech Republic, e.g. a permanent residence permit,
- a long-term residence permit (including an employee's card),
- a visa issued for more than 90 days,
- a valid certificate of temporary residence (this applies to EU citizens only).

Establishment of NIA ID and MEG:

1. in person - at the contact point of the Czech POINT public administration
2. in person - at embassies of the Czech Republic abroad

By usage of NIA ID, it is possible to use all electronic services of the public administration, it is even possible to log into the data box of the above-mentioned natural person.

[Bank ID](#) is a method of digital verification of the identity. Thanks to it, it is possible to securely log in to the portals of various companies and state administration, as easily as in internet banking. It's free of charge.

3.2.2 Communication with Citizens Using a Data Box

The use of [data mailboxes](#) and the expansion of the number of data mailbox holders for the purpose of communication with public administration bodies is considered a preferred direction for the intensification of digital public administration in the Czech Republic. Facilitating and speeding up communication with public administration bodies, reducing delivery costs and reducing the environmental burden are considered to be the advantages of data boxes (DIA, 2023).

The data box is a state-guaranteed electronic communication tool. It serves mainly for communication with public authorities. The authorities are obliged to use data boxes in communication with everyone who has a data box set up. The data mailbox information system has been operating since July 1, 2009.

The data boxes were established and managed by the Ministry of the Interior of the Czech Republic. From 1 April 2023, the Information System of data boxes and with it all administrative activities in the agenda of data boxes came under the management of the Digital and Information Agency (DIA). This new central administrative office was created by an amendment to [Act No. 12/2020 Coll., on the right to digital services](#) (Matejka and Mates, 2022). The operator of the **Data Box Information System** is the postal license holder, i.e. [Česká pošta, s.p. \(Czech Post\)](#)

Four basic types of data boxes are established:

- Data box of public authorities,
- data box for legal entities,
- data box for natural persons doing business
- data box for natural persons.

The integrated data mailbox system delivers information from the sender's mailbox to the recipient's mailbox in the form of data messages (Lapáček, 2012). Communication with public authorities is free via the data box.

A data box is an electronic storage that is intended for:

- delivery by public authorities,
- performing actions towards public authorities, i.e. submitting submissions and proposals to public authorities in electronic form,
- delivery of documents of natural persons, entrepreneurial natural persons and legal entities.

For data messages, the so-called **fiction of delivery** is applied. This means that a message that is not delivered by any other means will be considered delivered 10 days after it is delivered to the mailbox. This feature is intended to prevent evasion of delivery of court and other decisions and must be taken into account especially in the case where legal deadlines arise from the moment of delivery. Another aspect of delivery fiction is the fact that all delivered

messages are considered delivered the moment the user logs into their mailbox. Therefore, it is not necessary for the message itself to be opened. To avoid problems related to fake delivery, the mailbox system allows you to activate notifications of new messages by e-mail or SMS.

The most common ways to log in to the data box:

- *By name and password* – this method enables standard login using a user name and access password,
- *Citizen identity* – allows you to log in using a qualified means, for example using the eGovernment Mobile Key or Bank Identity,
- *Mobile key* – logging in by scanning the QR code using the eGovernment Mobile Key application from a mobile device.

In case of loss or unavailability of login data to the data box, it is possible to obtain new access data to the data box at the contact points of the Czech POINT public administration. The current map of Czech POINT contact points is available at the address of the [CzechPOINT](#) project. There are currently a total of 7,373 CzechPOINT branches available, most of which are located in municipal offices and Czech Post (CzechPOINT, 2023).

3.2.3 Use of Data Box Identity

Using the data mailbox identity, it is possible to prove identity not only in the data mailbox service, but also in other eGovernment applications. The most frequently used web applications are [Citizen Portal](#) the [MY TAX Portal](#) and the [ePortal of the Czech Social Security Administration](#) (Tuláček, 2020). It is also possible to request extracts from public administration registers through the data box.

The [Citizen Portal](#) provides access to available online services of the state and, for example, the following information and services:

- Establishment of a data box (natural persons or entrepreneurial natural persons)
- Certificate of study
- Statement of the driver's point rating
- Criminal record
- Extract from the trade register
- Information from the real estate cadastre
- Information from the road vehicle register
- Information from the driver's register
- Information from the trade register

The [online financial office](#) provides a number of functionalities. The so-called **Tax Information Box (DIS)** is available here. A tax subject can use the tax information box to obtain information collected in the file kept by the Financial Administration of the Czech Republic and on a personal tax account.

The online tax office also offers to make submissions using electronic forms, i.e. saving and sending them using the Electronic Submissions for the Financial Administration (EPO) application or via the Tax Information Box (DIS+) (Finanční správa, 2023).

The [ePortal](#) offers online services that can be used to communicate with the Czech Social Security Administration (ČSSZ) and district social security administrations. It allows you to view the data recorded in the CSSZ databases and at the same time use interactive forms.

Login is enabled using various types of Citizen Identity login means (e.g. NIA ID, bank identity, etc.). There is no need to use data boxes to make a submission.

By submitting, you can submit an overview of the income and expenses of the self-employed for the year, make a request for an informative personal pension insurance sheet, make a query, for example, about the Informative calculation of the old-age pension or a preview of the pension insurance registration sheets (CSSZ, 2023).

The login data for the CSSZ ePortal match the username and password that the owner of the data box fills in on the login page of the Data Box Information System.

Data boxes are not only used to receive messages from public administration bodies or to submit applications. It is also possible to use them to obtain various types of statements that are normally available through the Czech POINT (Czech filing, verification and information national terminal). Citizens can thus obtain, for example, an **Extract from the criminal record of natural persons** or an **Extract from the driver's points assessment from their data box**.

[CzechPOINT@home](#) is a service of Czech POINT, intended for holders of data mailboxes, who can use the forms located on the Public Administration Portal to obtain an electronic version of statements from the Public Administration Information Systems (ISVS) in their data mailbox - that is, remotely, without having to visit the Czech workplace POINT. CzechPOINT@home is intended for entrepreneurial natural persons, legal entities and natural persons. Statements via CzechPOINT@home are sent to the data box free of charge (CzechPOINT, 2023).

CzechPOINT@home offers electronic statements from:

- public register
- insolvency register
- criminal record of legal entities
- trade register
- list of qualified suppliers (MVČR, 2023).

3.2.4 Additional Services to Data Boxes

In connection with data boxes, additional services are offered, which are not paid for by the state budget, but directly by their users. Additional services are mainly offered by Česká pošta, s.p., which as the operator had the most time to prepare them.

Messages are only kept in the mailbox system for a limited period of 90 days from delivery. Messages cannot be deleted before it expires. In order to archive messages after ninety days, it is then possible to use the **Data Vault** service of the Czech Post, which ensures the storage of delivered and sent data messages in the data box for a period longer than 90 days.

Due to delivery fiction, data messages are considered delivered no later than 10 days after they arrive in the data mailbox. The notification of the delivered data message can prevent a situation where the addressee does not know that he has received a data message. In addition to the option of setting a notification for a delivered data message in the form of an email (e-mail notification is free), you can use a notification in the form of an SMS. The sending of informative SMS can be ordered directly in the mailbox settings (activation of the SMS notification service) and can only be used on phone numbers (SIM cards) of Czech mobile operators. The service is then activated for 300 SMS. After 290 SMS have been used up, a free informational SMS message is sent with a warning about the approaching expiration of the service. To continue, you need to send an SMS with the text YES BOXES to the phone number 90211 and the service will be activated for another 300 SMS. The price of the service is CZK 3 including VAT for one SMS message sent. Payment for incoming SMS will be part of the mobile operator's monthly bill or deducted directly from the credit of the data box.

3.2.5 Authorized Conversion of Documents

In the case of authorized conversion, a document is completely converted from a paper form into an electronic one, or an electronic document is completely converted into a paper form. **The document that resulted from the conversion has the same legal effects as the document from which the output was converted** (Lechner, 2013). The conversion is carried out at any Czech POINT contact point. The service is subject to a fee.

The conversion from electronic (a document in PDF format or an entire data report in ZFO format containing an attachment in PDF format) to a paper form takes place by uploading the PDF/ZFO file to the Czech POINT Depository in one of two ways:

1. by uploading directly from the data box by choosing "Convert"
2. by uploading a file in PDF or ZFO format on the website of the electronic [Úschovna Czech POINT](#) (for a maximum period of one month). In this case, you need to bring a printed confirmation of depositing the document in the Depository with you to the Czech POINT.

Conversion can be done for a PDF document with a valid qualified electronic signature, mark or seal. On the website of the Czech POINT project, a free "Verification of document before conversion" service is freely available, which reliably evaluates whether the conversion can be carried out. This service can be used to verify whether a specific PDF document, or a data report containing a PDF attachment meets the conditions for conversion from electronic to paper form.

Conversion from hard copy (max. up to 150 pages) to electronic form takes place at public administration contact points. Due to time constraints, it is not possible to perform the conversion of a larger document at the contact points, but it is possible to use a specialized workplace of the Czech Post, which is equipped for these needs. The converted document in electronic form will be handed over to the customer by uploading it to the Czech POINT electronic depository. The customer will be given a confirmation of the document's deposit in the Czech POINT electronic depository, either printed or by sending it to a data box.

3.3 Information Resources

Below is a list of recommended publications and information resources on the topic of Chapter 3 *European Digital Identity*.

3.3.1 Digital study materials

[eGovernment: International Digital Identity](#)

[eGovernment: International Digital Identity – video manual 1](#)

[eGovernment: International Digital Identity – video manual 2](#)

3.3.2 Recommended literature

CROPF, Robert A. (2017). *E-government for public managers: administering the virtual public sphere*. Lanham, Maryland: Rowman & Littlefield. ISBN 9781442261907.

MILAKOVICH, E. Michael. (2022). *Digital Governance. Applying Advanced Technologies to Improve Public Service*. Routledge. ISBN 9781032104911.

3.3.3 Documents and Regulations

[Act on Electronic Identification](#)

[Act on the Right to Digital Services](#)

[Digital Markets Act](#)

[Digital Single Market strategy](#)

[Regulation on Digital Services](#)

[Regulation on Electronic Identification](#)

[Revision of the eIDAS Regulation](#)

3.3.4 Web Sites

[Bank ID](#)

[Citizen Portal](#)

[CzechPOINT](#)

[Czech Post](#)

[Data Mailboxes](#)

[Digital and Information Agency](#)

[Digital Identity](#)

[Digital Single Market](#)

[Electronic Identification](#)

[ePortal of the Czech Social Security Administration](#)

[European Digital Identity Wallet](#)

[EU Trust Mark](#)

[IIG – International ID Gateway \(eIDAS\)](#)

[National Point for Identification and Authentication](#)

3.3.5 Tasks and test questions

Task 1: Establish your [Electronic Identification](#)

- ✓ Compare options in your home country and the Czech Republic

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List of Abbreviations

BankID	Bank Identity
CE	Council of Europe
CEF	Connecting Europe Facility
DEP	Digital Europe Programme
DIA	Digital and Information Agency
DSFO	Data Box of a Natural Person
ECB	European Central Bank
EDSC	European Digital Skills Certificate
EU	European Union
G2B	Government to Business
G2C	Government to Citizens
G2G	Government to Government
G2E	Government to Employees
G2NP	Government to Non-profit
ICT	Information and Communication Technology
IIG	International ID Gateway
ILO	International Labour Organization
IMF	International Monetary Fund
IoT	Internet of Things
ISVS	Public Administration Information Systems
ISZR	Information System of Basic Registers
MEG	Mobile eGovernment Key
MPSV	Ministry of Labour and Social Affairs
MVČR	Ministry of the Interior of the Czech Republic

NIA	National Identity Authority
NPI	National Pedagogical Institute of the Czech Republic
OECD	Organisation for Economic Co-operation and Development
OGCR	Office of the Government of the Czech Republic
ROB	Register of Residents
ROS	Register of Persons
RPPO	Register of Rights and Obligations
RRF	Recovery and Resilience Facility
RÚIAN	Register of Territorial Identification and Real Estate
SET-Plan	Strategic European Technology Plan
UN	United Nations
USAID	U.S. Agency for International Development
WB	World Bank
WGI	Worldwide Governance Indicators



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