EX ANTE EVALUATION OF DIGITALISATION OF SOCIETY MEASURES FOR 2021-2027

Summary of the Final Report

Vilnius
2020-04-17

Evaluation goal and objectives

The evaluation was ordered by the Ministry of Economy and Innovation, following contract No. 8-88 signed on the 31ᵗᵗ of July, 2019. The evaluation was co-financed from the European Social Fund and the national budget. Cover picture: Ferdinand Stöhr, *Unsplash*.

The goal of the evaluation was to present suggestions for the use of 2021-2027 European Structural and Investment Funds for public sector digitisation measures. The **objectives** of the evaluation were:

- Evaluate and substantiate potential 2021-2027 European Structural and Investment Funds interventions in the area of public sector digitisation, as defined in the ERDF/CF Regulation
- Provide recommendations for guidelines on digitalisation of society during the upcoming 2021-2027 EU programming period
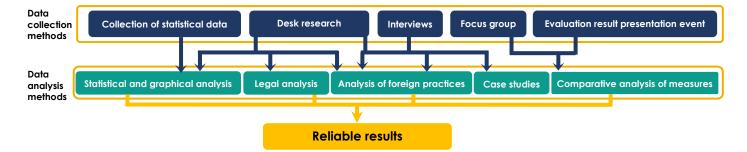
The evaluation satisfies two broad **needs** of the Ministry of Economy and Innovation:

- To take stock of the experience of digitalisation of society measures implemented by other institutions during prior EU investment programming periods.
- To design an ambitious programme for digitalisation of Lithuania for 2021-2030.

The following **data and knowledge** were collected in order to satisfy the above-mentioned needs:

- An inventory of digitalisation measures during 2007-2013 and 2014-2020 EU programming periods, assessing their likely relevance and impact. Within this exercise, a total of 20 measures on promotion of information society were evaluated (Priority Axis 2.3 during 2007-2013 programming period and Priority Axis 2 during 2014-2020 programming period). This is the first attempt to systematically review these measures, therefore, this exercise was the main focus of the evaluation.
- Assess and substantiate potential 2021-2027 European Structural and Investment Funds interventions in the area of digitalisation, as defined in the ERDF/CF Regulation
- Define potential priorities for digitalisation of society in accordance to current national and EU-level strategic and legal documents.

Methods

Data collection methods: Collection of statistical data | Desk research | Interviews | Focus group | Evaluation result presentation event

Data analysis methods: Statistical and graphical analysis | Legal analysis | Analysis of foreign practices | Case studies | Comparative analysis of measures

Reliable results

Data collection methods	Data analysis methods
Statistical data collected from: (1) EU structural support information system (SFMIS) and (2) Eurostat, Lithuanian department of statistics and other official sources.	**Statistical and graphical analysis** enabled a comparison of the products and results of EU-supported projects, concentration of investment by sector, progress of projects. 209 questionnaires evaluating the quality of e-services planned for creation or modernisation were analysed (provided by CPVA). In addition, an analysis of the volumes of various e-documents provided to central e-health information system *esveikata.lt* was carried out.
Desk research covered: (1) previously conducted studies, evaluations and research in Lithuania and Europe; (2) academic literature; (3) EU and Lithuanian legal documents, other documents regulating the implementation of EU investment measures.	**Legal analysis** of EU and Lithuanian legal acts (laws, directives, regulations, communications, plans, etc.) was carried out in order to provide recommendations on guidelines on digitalisation of society in 2021-2027.
34 **interviews** were carried out: (1) exploratory interviews, (2) interviews with implementing authorities, (3) expert interviews.	**Analysis of foreign practices:** 8 specific good practices were integrated into the study report. In addition, an analysis of 2004-2020 EU investment into information society in Estonia was carried out.
A **focus group** with stakeholders was organised on the 4ᵗʰ of December, 2019. In addition, a workshop was organised with representatives from the Ministry of Culture, Ministry of Social Security and Labour, and Ministry of Health. Interim evaluation results were presented to public sector stakeholders twice (on 14ᵗʰ of January, 2020 and on 20ᵗʰ of February, 2020). An e-consultation with stakeholders was conducted during April 2020 to **present the evaluation results**.	**Case studies** of three interventions were carried out: consolidation of state information system infrastructure, open data, and e-health. Case studies helped to analyse in depth the products and results of projects implemented in these areas, as well as to explore the implementation of these projects.
	Comparative analysis of measures enabled a comparison of their design, implementation processes, achieved results.

Main constraints:
- Extensive scope of the evaluation. In order to manage the 'depth and breadth' issue, a qualitative evaluation strategy was chosen, focusing on taking stock of EU investment in the area of digitalisation.
- Due to unavailability of high-quality, comparable data on the use of government e-services it was not possible to provide an extensive assessment of government e-services most relevant for the public.
- Some stakeholders were unavailable for consultation during preparation of the final report due to heightened workloads caused by COVID-19 global pandemic.

DRIVERS OF DIGITAL TRANSFORMAT[ION]

Global tendencies and their implications

Digital transformation already affects and will continue affecting all economic sectors and spheres of governance. It will transform our daily lives and facilitate the emergence of new sectors and enterprises. Digitalisation trends reinforce one another. Big data enables corporations to predict moods and needs of consumers, while governments are enabled to predict citizens' behaviour or prevent potential threats. Technologies dramatically change competition and consumer behaviour. Enterprises compete in global markets, while digital companies continue to top the lists of world's most valuable corporations. COVID-19 global pandemic, which hit the world in 2020, created a shock to the public sector and the global economies, while also creating an impetus to **speed up digitalisation of both public and private sectors.** It is evident that those that embraced digital technologies in their daily practices thrive in the face of this crisis.

Practical implications of these tendencies are already materializing – restructuring economies, threats of mass unemployment in declining sectors, emerging cybersecurity threats, growing productivity pressures in both public and private sectors, as well as a push for more transparency. All of these trends present a **strategic opportunity** for countries lacking natural resources to boost the competitiveness of their economies. Lithuania in particular will face serious issues to its competitiveness in the near future as the structural changes here are too slow. Lithuania faces a 'middle income trap' as traditional sources of productivity growth are exhausted. Strategic use of the potential provided by digital technologies can become the main driver of Lithuania's economy and also help completely transform its public sector.

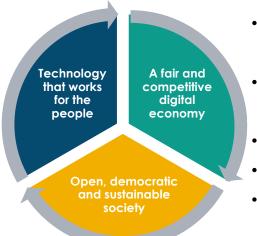### Holistic vision of Europe's digital future

Europe reacts to global digital tendencies and strengthens its focus on the following trends:

- *Data economy* – Europe aspires to boost its' data ecosystem. Enterprises, rather than the public sector, have become the main focus of attention as the main source of valuable data. Europe focuses its' attention on opening of business data, the exchange of data between businesses and transfer of privately-held data to the public sector (B2B and B2G data transfer).
- *Advanced digital technologies* – artificial intelligence, high-performance computing, cloud and edge computing, quantum technologies, blockchain, virtual and augmented reality, 5G, robotics and other key enabling technologies are at the core of all strategic EU documents. Synergies between digital and green technologies are also at the forefront as Europe aims to implement its Green Deal.
- *Security of digital infrastructures and content* – fostering a cybersecurity industry and public-private partnerships are a priority for a digital Europe.
- *Digital skills of the society and labour force* – Europe recognises that digital skills, once in demand in niche sectors only, are now a necessity for each citizen navigating a digital reality every day. Digital skills are comprised of much more than basic Internet usage skills – understanding artificial intelligence, Internet of Things and using devices that utilise said technologies becomes a necessary real-life skill.

Both EU and OECD support a **holistic vision to digitalisation of the society,** which comprises both the development and application of advanced digital technologies, and also promotion of cultural changes in enterprises, public sector institutions and communities across the board.

EU digital strategy

- Invest in digital competences for all Europeans
- Protect people from cyber threats (hacking, ransomware, identity theft)
- Ensure Artificial Intelligence is developed in ways that respect people's rights and earn their trust
- Accelerate the roll-out of ultra-fast broadband for homes, schools and hospitals throughout the EU
- Expand Europe's super-computing capacity to develop innovative solutions for medicine, transport and the environment

Technology that works for the people

A fair and competitive digital economy

Open, democratic and sustainable society

- Enable a vibrant community of innovative and fast-growing start-ups and SMEs to access finance and to expand
- Propose a Digital Services Act to strengthen the responsibility of online platforms and clarify rules for online services
- Make sure that EU rules are fit for purpose in the digital economy
- Ensure that all companies compete in Europe on fair terms
- Increase access to high-quality data while ensuring that personal and sensitive data is safeguarded

- Use technology to help Europe become climate-neutral by 2050
- Reduce the digital sector's carbon emissions
- Empower citizens with better control and protection of their data
- Create a European health data space to foster targeted research, diagnosis and treatment

Source: European Commission (2020). Shaping Europe's digital future

Lithuania already has several decades of experience in seeking digital transformation, yet remains **between digital moderates.** Therefore, it is imperative to identify remaining challenges, take stock of past achievements and learn from past experiences.

Weak digital skills of the Lithuanian people

The society is not taking full advantage of digital technologies. First, the Digital Economy and Society Index, World Digital Competitiveness rating, as well as multiple international and national studies identify **digital skills** as Lithuania's weak point:

- Citizens lack both skills and motivation to use digital technologies in their daily lives. In 2019, only two-thirds of all households had broadband installed in their homes.
- Citizens use digital technologies for more complex activities less than in other EU countries (e.g. usage of cloud services, using digital technologies to find a job or for learning purposes, or using social media for professional purposes)
- As many as 76 per cent of citizens avoid asking for help when encountering problems using digital technologies.

Lithuania has some experience in successfully boosting ICT usage by citizens. Within the project 'Connected Lithuania' (*Prisijungusi Lietuva*) along with traditional trainings, **targeted information campaigns** are currently used in order to attract people to participate in free trainings or to consult e-scouts that can help with practical issues arising when using digital technologies. Lithuania is on the right path when integrating the development of digital skills in all educational levels (including primary education), however, **development of digital skills should take place within all subjects.** A review of all education and training programmes has begun in March 2020 – this provides an opportunity to overhaul development of digital skills in schools before these programmes are rolled out in 2022/2023.

Second, even though employment in low and medium-low digital intensity sectors declined while employment in high and medium-high digital intensity sectors rose, **the labour force still lacks adequate digital skills:**

- A third of all workers and unemployed still lack basic digital skills.
- The number of ICT specialists is one of the lowest among EU Member States, in addition, enterprises do not invest enough into their employees' digital skills.
- Women's potential in the digital economy is underused – even though, on average, women are more frequent users of digital technologies than men, and more women than men have higher than basic digital skills, there are less women among ICT specialists.

EU-funded trainings under 2014-2020 OP measures have shown that in many cases there is a risk of crowding-out private investment. In addition, trainings had a positive impact only on short-term competitiveness of employees, yet did not help them obtain skills useful in the overall labour market. The design of future measures should reflect these lessons and differentiate trainings and their forms in order to account for both companies' need for specialized skills and larger labour market segments' needs for more general skills useful for adapting to the changing structure of the economy.

Inadequate private investment into digital technologies

Although public and private ICT infrastructure in Lithuania is well-developed, structural change of the economy is too slow and investment into modernisation is inadequate:

- Manufacturing and agriculture is dominated by low-tech and low-value-added SMEs. This hinders the demand for newest technologies and business-science cooperation.
- Business R&D investment is growing since 2012, albeit at a slow rate. Business R&D investment in ICT sectors – **creators of digital technologies** – in EU and OECD countries is on average tenfold as compared to Lithuania.
- Only a quarter of enterprises – **users of digital technologies** – plan to invest in application of Industry 4.0 technologies.
- Development of the high-tech sector is hindered by qualified labour force (i.e. programmers, engineers) shortages.

Lithuania has relatively successfully invested into fostering business R&D and SME competitiveness. Lithuania has already kick-started subsidies for digital transformation of SMEs – these measures should be carried over to 2021-2027 programming period. However, the system of incentives for digitalisation is fragmented, businesses lack easily accessible information about these measures as well as information about R&D services provided to businesses by research institutions. Therefore, digital innovation hubs are of high relevance to Lithuania. It is important to continue fostering the digital start-up ecosystem and, in particular, pay attention to start-ups at the idea stage, using the network of mentors, business angels and other measures supporting innovation.

Slow and fragmented digital transformation in the public sector

Lithuania invested heavily into e-services and e-health development and digitalisation of cultural and linguistic heritage during 2007-2020. 2014-2020 saw an increase in investment in consolidation of state information resources infrastructure. However, **digital transformation of the public sector is too slow, goals and actions are not ambitious enough.** Investment was poured into technical issues for a long time, neglecting institutional and political challenges, which in fact usually become the biggest hindrance to public sector digitalisation. Digitalisation has not yet reached the inner processes of public sector institutions. Public sector digitalisation projects are too large and rigid, which is a consequence of a high dependency on EU investment, which do not lend itself easily to flexible measures. Public sector lacks the culture of experimentation, which is a necessity for digital transformation. The potential of businesses to introduce innovation to the public sector remains underused.

The analysis carried out within this evaluation focused on 2007-2020 EU investment within six thematic areas. It allows us to take stock of our achievements and remaining gaps:

- Investment into *consolidation of state information resources infrastructure (SIRI) and its' cybersecurity* was relevant. EU investment kick-started SIRI reform, the aim of which is to introduce a government cloud infrastructure. However, 2014-2020 EU investment will not be sufficient to complete the reform. EU investment into state infrastructure cybersecurity will also give an initial impetus towards better public sector cybersecurity with the creation of a centralized solution to ensure SIRI cybersecurity, yet public institutions need to do more to ensure cybersecurity of their own IT infrastructure, as the centralized solution will not cover all infrastructures.
- EU investment sped up the implementation of *open data initiative* – a new Open data portal was created, along with methodological and legal documents supporting institutions opening their data. However, measures fostering the demand for open data have been lacking – businesses and citizens do not demonstrate an eager interest to use open data for creation of innovative digital solutions.
- *Lithuania is a pioneer in the EU in many areas related to government e-services.* However, 2007-2013 EU programming period resulted in an over-investment into niche services relevant to a small fraction of the society, coupled with low maturity of e-services, in particular within the areas of user-friendliness, digitalisation of the 'back-end' of e-services (i.e. processes taking place within the institution), cross-border availability of e-services. The potential for 'smart cities' is still unused, as investments were mostly focused on creating possibilities for citizens to order e-services online.
- Investment into *e-health* faced various issues – 2007-2013 EU investment exposed a lack of strategic vision for e-health development, inadequate coordination of various e-health initiatives, as well as significant shortcomings of technological solutions created and installed during EU-funded projects. Part of 2014-2020 EU investment is still dedicated to fixing the gaps and shortcomings of the central e-health information system, however, it is a necessity in order to channel 2021-2027 investment into development of advanced health solutions, especially using data stored in the central e-health information system.
- Investment into *digitalisation of cultural and linguistic heritage* was not entirely successful – it failed to foster major societal interest in this type of content. Future investment for preservation of cultural heritage and R&D in linguistic sciences should come from national budget, instead of channelling EU structural funds there and inaccurately treating such activities as e-service projects.

Digital progress is also hindered by **systemic issues.** Success factors for the transformation of the public sector are discussed in the section below.

DIGITAL TRANSFORMATION SUCCESS FACTORS

The public sector can either become a catalyst or a hindrance to digital transformation. Lithuania must strive for a cultural shift – the society must view the state as an enabler and not as an obstacle to their productive activity. Innovation in the public sector is primarily hindered by an inadequate legal basis, rigid organisational structures and weak motivation of civil servants. If the below-mentioned success factors are not in place, Lithuania will not achieve impact no matter the amount of financial and human resources.

Holistic approach to digitalisation

Digital transformation needs an overhaul of 'business-as-usual' processes, which are not limited to modernisation of IT systems. Lithuania has overemphasised the importance of modernising the front-end of e-services and neglected the inner processes ('back-end') within institutions that actually deliver the service. Not enough attention has been paid to the architecture of IT services and whether they are optimal or help transform the way day-to-day operations are carried out in public institutions. All future digitalisation initiatives will have to pay more attention to these issues – a stronger user-oriented approach in general would help to ensure that all necessary changes are being implemented when digitalising government.

Political leadership, strong governance and excellent competences

Lithuania is currently facing a window of opportunity to strengthen the political leadership and governance of digitalisation policy. The Ministry of Economy and Innovation should already start rallying institutions for a digital transformation by identifying key breakthrough areas, their 'owners' and contributing institutions, designing detailed action plans with specific responsibilities of institutions, leaders and civil servants. The Digital Agenda Council should be a

forum for discussion of innovative ideas rather than a body that merely approves administrative decisions. It is crucial to pool a critical mass within the public sector by strengthening cooperation between decision-makers and implementing bodies. Information Society Development Committee's (ISDC) role as a digital excellence centre should be significantly strengthened.

Motivated civil servants

Institutional resistance to change is one of the hardest barriers to digital transformation. A variety of factors contributes to this – fear of mistakes and subsequent job loss, wariness of radical transparency that allows tracing responsibility for failures to individuals, lack of innovative ideas among the leadership, inadequate or inexistent motivational system for adoption of innovative solutions, institutional barriers to policy experimentation. A motivational system is lacking in Lithuania, civil servants report lack of support for innovation from their superiors. Strengthening digital skills as well as creative thinking and problem-solving skills of civil servants and an overhaul of the civil servants' motivational system would help break down institutional barriers to change. The 'Digital Lithuania Academy' initiative could provide the necessary starting point for a wide-scale stock-taking of skill gaps among the civil servants, as well as for providing training to develop those skills.

Flexible technological solutions for the public sector

Lithuania's digitalisation legacy resembles a typical experience of public sector digitalisation – domination of monolithic systems comprising various components, such as data exchange and storage, user portals, user identification, payment for services, etc. Monolithic systems are difficult to modernise and integrate, they often 'lock' data within the system and prevent a smooth data exchange between different systems. Many researchers and practicians advocate a shift to a microservices architecture, which comprises small, reusable and loosely coupled independent services. A service-oriented architecture would enable a more agile and effective creation, modernisation and adaptation of systems and services to match user needs.

Business-science-state synergies and policy experimentation

'Traditional' business-science cooperation (via subsidies for joint R&D projects) for development of digital technologies is hindered by three main barriers:
- The concept of what constitutes R&D in the sector is not always clear, which in turn hinders access to government subsidies for fostering business R&D.
- Diminishing R&D human resources – the dropout rate in ICT-related programmes is among the highest in the country and the number of doctoral students is continuously decreasing.
- Limited access to finances – reported lack of instruments at the earliest stage (before progressing to accelerator programmes or applying for seed stage investments), long timeframes between calls for funding, lack of incentives for young ICT researchers to participate in research projects due to low daily rates.

A cultural shift in public sector institutions would significantly boost business-state synergies. The public sector desperately lacks creative problem-solving capacities. Policy experimentation tools present an opportunity to attract business to help solve public sector issues.

Alternative sources of financing

In the period of 2011-2017 Lithuania invested approx. 300m EUR in its digital policy, 84 per cent of which was comprised of EU structural funds. A strong dependence on EU investment is evident in the case of digital policy. The course of negotiations on 2021-2027 EU Cohesion Policy strongly suggest that as Lithuania strengthens its economy, EU investment will diminish. Therefore, it is imperative that both EU and national investment is concentrated in areas with the potential to reach the strongest impact possible. Lithuania must work hard to attract funding from alternative sources – especially from Digital Europe, Horizon Europe, InvestEU, CEF2 Digital programmes.

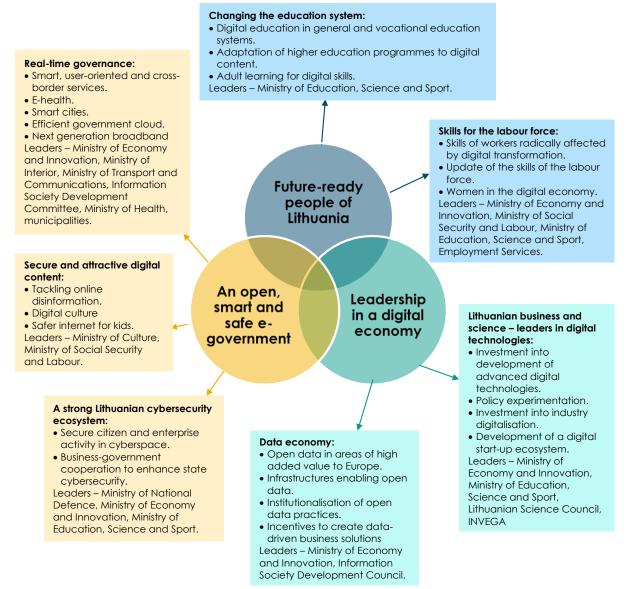## Digital-friendly regulation, focus on EU standards

Regulatory changes in Lithuania often follow technical solutions (which hinders their full deployment), thus better coordination between decision-makers and implementing bodies is imperative, as the latter do not have the necessary influence to achieve necessary legal changes. Developments at the EU level should also be closely followed, as the European Commission invests heavily in reusable specifications, software and services that form part of a wide variety of IT systems in the EU, for example, by creating building blocks within Connecting Europe Facility (CEF). Many EU directives and regulations in the area of digital policy also signal priority areas, technologies and standards where national investment should be concentrated. Lithuania should implement necessary legal changes in the following areas:
- Create a public service monitoring and analysis system and use its' data in order to achieve impeccable quality of e-services. Lithuania should focus its investment into e-services outlined in the EU Single Digital Gateway regulation.
- Currently the legal basis still does not set a duty for all institutions to assign open data responsibilities to their staff. The position of a Chief Data Officer is not yet created and filled. Forthcoming EU legal acts will create the duty to regulate B2B and B2G data exchange.
- Lithuania should look out for major EU legislation in the next 2-3 years in the following areas – digital service, regulation of artificial intelligence, 5G connectivity and broadband cost reduction, trust services and electronic

identification (revision of eIDAS regulation), review of EU competition law, regulation of digital finance, revision of cybersecurity regulation.

The Digital Agenda Council will draft the Lithuanian digitalisation development programme for 2021-2030. Digitalisation will impact all areas of our daily life, each and all economic sectors, enterprises, institutions, citizens. Therefore, a **holistic approach to digitalisation – creation of a digital Lithuania** – is necessary to kick-start a new driver of Lithuania's competitiveness. The programme should allow Lithuania's digital progress to leap towards European digital leaders – that is why the programme must be ambitious, tailored to solving remaining challenges, while at the same time align with European efforts to achieve global digital leadership. Suggestions presented below build on Lithuania's experience with implementing EU-funded measures during 2007-2020 programming periods, as well as on EU and Lithuania's strategic documents. This roadmap should serve as a starting point for the Council's work towards building a digital strategy for Lithuania.

Changing the education system:
- Digital education in general and vocational education systems.
- Adaptation of higher education programmes to digital content.
- Adult learning for digital skills.
Leaders – Ministry of Education, Science and Sport.

Real-time governance:
- Smart, user-oriented and cross-border services.
- E-health.
- Smart cities.
- Efficient government cloud.
- Next generation broadband
Leaders – Ministry of Economy and Innovation, Ministry of Interior, Ministry of Transport and Communications, Information Society Development Committee, Ministry of Health, municipalities.

Skills for the labour force:
- Skills of workers radically affected by digital transformation.
- Update of the skills of the labour force.
- Women in the digital economy.
Leaders – Ministry of Economy and Innovation, Ministry of Social Security and Labour, Ministry of Education, Science and Sport, Employment Services.

Secure and attractive digital content:
- Tackling online disinformation.
- Digital culture
- Safer internet for kids.
Leaders – Ministry of Culture, Ministry of Social Security and Labour.

Future-ready people of Lithuania

An open, smart and safe e-government

Leadership in a digital economy

Lithuanian business and science – leaders in digital technologies:
- Investment into development of advanced digital technologies.
- Policy experimentation.
- Investment into industry digitalisation.
- Development of a digital start-up ecosystem.
Leaders – Ministry of Economy and Innovation, Ministry of Education, Science and Sport, Lithuanian Science Council, INVEGA

A strong Lithuanian cybersecurity ecosystem:
- Secure citizen and enterprise activity in cyberspace.
- Business-government cooperation to enhance state cybersecurity.
Leaders – Ministry of National Defence, Ministry of Economy and Innovation, Ministry of Education, Science and Sport.

Data economy:
- Open data in areas of high added value to Europe.
- Infrastructures enabling open data.
- Institutionalisation of open data practices.
- Incentives to create data-driven business solutions
Leaders – Ministry of Economy and Innovation, Information Society Development Council.

The success of this digitalisation strategy will depend on implementation of the following horizontal actions:
- Adoption of a **holistic view** to digitalisation initiatives, in particular in the area of e-services (digital transformation should be all-encompassing, including an overhaul of institutional business-as-usual).
- A transformed **motivation system in the civil service,** coupled with investment in their digital skills.
- Ministry of Economy and Innovation takes **strong political leadership,** The Digital Agenda Council becomes a forum for active discussions, while the role and capacity of Information Society Development Council as **a centre for digital excellence** is strengthened.
- **Agile technological solutions** within the public sector are encouraged (e.g. microservice architecture is more widely embraced).
- **Policy experimentation and business-science-state synergies** are strengthened (using *GovTech Lab* to achieve a cultural breakthrough).
- **Alternative sources of funding** are embraced, direct EU funds in particular.
- **Legal changes** are implemented in a timely manner, **EU standards and good practices** are followed as a general rule.

USE OF 2021-2027 EU STRUCTURAL AND INVESTMENT

2021-2027 programming period in Lithuania will see decreasing EU investment and stricter requirements from the European Commission on evidence-based investment needs. **EU investment in digitalisation of society must clearly contribute to Policy Objective 1 'Smarter Lithuania' and foster an innovative and smart industrial transformation.** This implies that the benefits of EU investment must be reaped by citizens and companies (especially SMEs) first, and governments second. A simple 'carry-over' of measures from previous programming periods will not be allowed. Any proposed continuities for measures must be substantiated by clearly identified gaps that will not be filled with 2014-2020 EU investment. Lithuania's division into two NUTS 2 regions will also reduce the investment allocated to the Capital region. Experience from previous programming rounds show that most digitalisation projects were attributed to the Capital, where most central government institutions are based. These tendencies push Lithuania to program their EU investment as smart as possible – EU Structural and Investment Funds must be viewed as one of many possible sources of funding for measures to digitalise society.

In line with European Commission's Country Report, results from informal negotiations, achievements from past programming periods and Lithuania's strategic documents, **EU structural and investment funds for Specific Objective 1.2 are proposed to be concentrated in five areas,** all of which are in line with the proposals presented in the society digitalisation roadmap:

Specific Objectives under Policy Objective 1 'Smarter Lithuania'
1.1. Enhance research and innovation capacities and the uptake of advanced technologies,
1.2. Reap the benefits of digitalisation for citizens, companies and governments
1.3. Increase the growth and competitiveness of small and medium-sized enterprises
1.4. Develop skills for smart specialisation, industrial transition and entrepreneurship

European Commission investment guidance on Cohesion policy funding for digitalisation of society
- Increase ICT uptake in small and medium-sized enterprises, including supporting infrastructures and services;
- Promote the range, quality and interoperability of e-services provision and their uptake by citizens, with special focus on rural areas and the older population, and in a cross-border context;
- Upscale and accelerate open data, e-government.

1. **Investment in Digital Innovation Hubs,** ensuring that DIHs will not distort competition or increase fragmentation in the existing innovation system, and that their activities will add value.
2. **Fostering demand for open data** – innovative solutions based on open public sector data. Possible measures:
   - Prizes and/ or subsidies to businesses using open public sector data to create innovative products or services.
   - Subsidies to public sector institutions to run *GovTech Lab* and organise hackathons.
   - Technical assistance to municipalities in order to foster open data communities, assistance to institutions in order to determine the demand for as well as procedures of providing open data.
3. **Development of widespread digital services (incl. key enablers).** Possible measures:
   - Subsidies for application of data analytics solutions (esp. based on artificial intelligence) in the public sector.
   - Subsidies for development of services based on life/business events, including digitalisation of services' *back-end* (related processes within institutions). Investment should be primarily concentrated towards developing services of *strategic relevance to the EU and at the national level* (e.g. indicated in EU or national legal acts or with high cross-border relevance), services with a *high number of users*, and services with the *highest potential efficiency savings.*
   - Subsidies for e-health development: paperless personal health history, big data analytics (esp. based on artificial intelligence).
   - Subsidies for development of key enablers (e.g. State Information Resources Interoperability Platform (SIRIP), assistive technologies for people with disabilities).
4. **Development of government cloud** in order to enable real-time governance and open data, for example:
   - Subsidies for expansion of government cloud infrastructure in order to accommodate the majority of public sector information systems and registers.
   - Subsidies for migration of information systems and registers into government cloud. Priority investment needs should be determined on the basis of the following criteria: storage of *high-value datasets* (as defined in the Open Data Directive), most *technologically obsolete* systems, *most connections to other systems and registers,* highest costs to implement *technical solutions to open data.*
5. **Transformation of electronic identification and trust services framework** (only if the revision of eIDAS regulation would require an overhaul of the already-existing framework).

Success factors for the above-mentioned investment areas:

- **Digital Innovation Hubs** must be at the forefront of a cultural shift and spread awareness of the benefits of digitalisation, foster entrepreneurship within SMEs, and propose practical solutions best tailored to their clients.
- **Incentives aimed at fostering the demand for open data-based solutions** should be attractive to the entrepreneur community – related administrative burden should be reduced to a minimum; the community should have access to high-value datasets. In addition, remaining legal issues, e.g. regarding the duty to open data, issues with data linkages and compensation mechanism, should be solved. Opening of data should become a default practice in the public sector.
- **Development of digital services** must be driven by user needs. For this purpose, a well-functioning system for monitoring use, quality and satisfaction with government services must be established. In addition, advanced digital technologies (e.g. artificial intelligence) should be applied in order to strive for an exceptional service quality.
- **Government cloud infrastructure** will enable opening of data from many obsolete information systems and registers. Therefore, it is imperative that the reform also triggers a cultural shift and an internalisation of what is and is not considered to be data, data management systems, registers, etc.
- Investment in **electronic identification and trust services** should only be considered in case the revision of eIDAS regulation creates the need to significantly transform the framework currently applied in Lithuania (e.g. the need to introduce new technologies underpinning these services). If this is not the case, EU investment should not be used to cover routine operating costs of public sector institutions.

All Specific Objectives under Policy Objective 1 will also contribute to the implementation of digitalisation policy:

- **Investment under Specific Objectives 1.1. and 1.3. will significantly boost digital economy** by promoting prototypes based on advanced digital technologies (artificial intelligence, blockchain, supercomputers, etc.) and their widespread adoption. Even though the proposal for measures under Specific Objective 1.2. includes mainly subsidies for public sector institutions (although citizens and businesses will reap the benefits of solutions the public sector adopts), these measures will be coupled with financial instruments for digitalisation of businesses under Specific Objectives 1.1 and 1.3
- **Investment under Specific Objective 1.4.** will aim to fill the skill gaps for SMEs operating in Smart Specialisation areas. ICT is one out of seven Smart Specialization priorities in Lithuania. This priority encompasses artificial intelligence, big data, Internet of Things, data analysis, cybersecurity, fintech and blockchain. Investment will therefore be targeted to **supporting SMEs in attracting ICT specialists.**