### Estonian Association of Information Technology and Telecommunications – Vision for Information Society in 2035

SMART ESTONIA

Estonian Association of Information Technology and Telecommunications Edited by Miltton New Nordics

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#### Foreword

You are reading "Smart Estonia", the updated long-term vision document produced by the Estonian Association of Information Technology and Telecommunications (ITL). Four years ago, as we began drafting the vision with our team, we could never have foreseen many of the changes that have now begun to affect not only our sector but society as a whole (such as the green transition). We operate in a sector that by its nature strives to be ahead of its time and that places a certain obligation on us to lead the way. With this in mind, we found it necessary to analyse the changing conditions and reformulate the common goals.

In viewing our vision for an information society, it's fair to say that we are moving in the right direction overall. The impact of the information and communication technology (ICT) sector on the economy has grown. In 2021, it accounted for nearly 10% of GDP and contributed 9.4% of total labour taxes. Our vision has also helped to bring public attention to the need to develop the innovation and R&D capabilities of companies. The ICT sector itself has made significant progress and worked hard in this regard. We have also made significant progress in terms of digitalisation of the economy, moving from 19th position to 9th among all EU member states in terms of private sector digitalisation.

Although we are on the right track, it must be acknowledged that if we continue as we have done to date, Estonia's added value will only catch up with the EU average by 2046. Therefore, a meaningful shared contribution and cooperation between the private and public sector is necessary in order to advance at a steadier pace. For example, we need to find a solution on how to ensure the accessibility and quality of our e-state services in the context of a decreasing population, and discuss the role of digitalisation in implementing the green transition. Ensuring a qualified workforce remains a concern and we must consider the fact that we will be competing in the global labour market. In creating our vision, our goal is to show the steps that can be taken to ensure a sustainable and competitive living environment even a decade from now – an environment that is efficiently managed and where people are not afraid to make bold decisions. The road to achieving these goals is not easy and the demands that we have set for ourselves may seem unachievable. However, let us not forget that Estonia has already launched some initiatives that have tested the limits of the current system and traditions. We have created a digital state that is unique worldwide and have emerged as pioneers in regulating and utilising artificial intelligence at national level. This document presents ITL's vision on how to strive for brave and bold changes in Estonian society.

#### Doris Põld,

CEO of the Estonian Association of Information Technology and Telecommunications

#### Summary

The development of the information and communication technology sector depends on various factors ranging from the business environment and education policy to state governance. On the one hand, the share of value added by the ICT sector in the economy as a whole has greatly increased, the distribution of e-services has improved at state level, and significant investments have been made in the development of digital skills. On the other hand, the low level of digitalisation in the private sector and the growing shortage of qualified labour are causes for concern.

In order to make a new leap in development, some bold changes must be made. The long-term vision document of the Estonian Association of Information Technology and Telecommunications describes how bold changes can create better opportunities for everyone in Estonia.

According to ITL's vision, by 2035 Estonia will have reached the forefront in digitalisation in both the private and public sectors, and serve as a model for others in this field. The vision is supported by three pillars: innovative and sustainable economy, smart people, and a bold state with a vision.

The innovative and sustainable economy in 2035 is oriented towards collaboration; it is the world's most flexible implementer of new solutions and R&D results, and an exporter of this experience. The foundation of an innovative and sustainable economy is primarily based on research and development, and our goal is to achieve higher added value through productisation, servitisation and the bold implementation of research and development activities. Second, we need to participate in global high-value production chains through better harnessing of cooperation and the export potential of companies. The third component of an innovative and sustainable economy is moving towards a real-time functioning economy, for which the Estonian private sector must take a leap towards digitalisation and automation. In order for Estonia to have the world's most automated and secure digital business environment that functions in real time, we must create new opportunities for data collection and usage.

We are **smart people** due to the technology applied in all fields of life and the development of a smart workforce. By 2035, Estonian people will stand out in the world with their technological knowledge and skills, as the acquisition of technology-related knowledge and skills is an organic part of every educational level and field. The prerequisites for this are acknowledging the work of our teachers by increasing their wages, as well as supporting teaching staff with new educational technology solutions. The labour shortage can be overcome with solutions such as using a smart workforce in Estonia and abroad, introducing cross-border workforce solutions, and creating an environment that supports the inclusion of foreign talents. In addition, Estonia will set an example worldwide by creating and implementing flexible employment relationships.

As a **bold state with a vision**, Estonia will stand out with its most user-friendly business and living environment, and most effective governance. By 2035, Estonia will have a business environment where the state focuses clearly on promoting innovation and makes decisions accordingly. Estonia will not be a low-wage country, and this is also reflected in smart foreign investments. Governance is not based on the presumption that a small state is expensive to maintain. The state only gets involved in the event of market failures.

E-services offer a comfortable user experience, and rule-based tasks and processes are automated using modern technologies, which boost overall efficiency and create an effective state. Estonia will be characterised by a stable tax environment where revenues grow steadily through increased productivity, not through tax increases or introducing new taxes. The living environment in 2035 will be comfortable, safe and sustainable. Estonia will be known for its notably user-friendly and accessible e-government services, and the activities that support the green transition take into consideration the interests of the business community and Estonian citizens.

This is smart Estonia.

## ITL's vision of an information society in 2035 SMART ESTONIA

By 2035, Estonia will have reached the forefront in digitalisation in both the private and public sectors, and serve as a model for others in this field.



#### Vision of an information society in 2035

ITL's vision for 2035 is not limited to a narrow look at the interests of companies in the sector. Our vision for the next decade is based on the concept of information society – that is, the problems and solutions are viewed in a wholesome way, including the economy, the people and the state, and they consider the development of all sectors and societal groups.

#### I Innovative and sustainable economy

# A vision for the economy: the Estonian economy is sustainable and oriented towards collaboration; it is the world's most flexible implementer of new solutions and R&D results, and an exporter of this experience.

The ICT sector plays a significant role in Estonia's economic development, making the largest contribution to the growth of Estonia's GDP. As of 1st quarter in 2022, the ICT sector contributed 1.8 percentage points to GDP growth.<sup>1</sup> Even though the growth of added value from most sectors has been modest or even negative, the added value from ICT companies has increased remarkably<sup>2</sup>.

Moreover, the potential for economic development through ICT still remains very high, especially in the private sector – even though the general level of digitalisation is average compared to other countries, and more traditional, small and medium-sized companies still lag behind. This means that companies are not yet fully benefiting from the digital economy. The majority of companies rarely use new technologies: only 10% of them use big data and 3% use artificial intelligence solutions, which falls well short of the European Digital Decade goal of 75%.

Building an innovative economy relies heavily on the volume of research and development (R&D) activities. According to 2021 data, the public sector spends 0.78% of GDP on R&D, while the private sector contributes as much as 1.01%.<sup>3</sup> In case of investments, however, it is important to consider the absolute value of developments, which often falls below the critical mass in smaller economies. The volume of investment in research and development must increase from the current 1.79% to at least 3% of GDP, and an additional goal should be to become a rapid implementer of R&D results.

ICT can be an important engine for GDP growth – this can be observed, for example, in the clear differentiation of the growth of added value in ICT compared to other sectors. In the real economy, GDP growth can, above all, arise from offering higher added value. There are two possible directions: to be part of value chains with higher added value or to increase the added value of own products and services.

ITL's vision of the economy is based on three pillars – innovation and R&D activities, collaboration and export, and digitalisation of the economy.

<sup>&</sup>lt;sup>1</sup> <u>Value added by economic activity</u>, Statistics Estonia

<sup>&</sup>lt;sup>2</sup> <u>Background information EESTI 2035 for sectoral working groups, November-December 2018</u>, Government Office and Ministry of Finance

<sup>&</sup>lt;sup>3</sup> Statics on R&D funding in Estonia 2021, Estonian Research Council

#### 1. Innovation and R&D

The foundation of an innovative and sustainable economy is primarily based on research and development. Our goal is to achieve higher added value through productisation, servitisation and the bold implementation of research and development activities.

The emergence, development and internationalisation of high-tech and export-capable companies is made possible, first and foremost, by investments in research and development made both by companies and the state. For this, investment growth needs to reach 3% of GDP, 2% of which is contributed by the private sector and 1% by the public sector.

Second, in order to implement R&D in companies on a broader scale, the applied research direction of R&D should also be developed. Simply and generally put, research is currently publication-focused and the approach tends to be quite theoretical. On top of basic research, there needs to be an additional focus on addressing topics that are important for companies in the area of product development. Even though the share of funding in basic research from total R&D funding in Estonia is comparable to or even greater than in known innovation leaders such as Belgium, Denmark or Austria, Estonia only invests 0.48% of its GDP in applied research. In Belgium, Denmark and Austria, this indicator is 1% or more. Similarly, in proportion to the total R&D funding, Estonia invests too little in applied research – only 29%. In Belgium, this indicator is 51%.<sup>4</sup> Insufficient attention to applied research does not allow Estonian companies to develop high value-added products and services.

Estonia together with Latvia, Bulgaria and Romania are currently the only countries in Europe without a centre for applied research, which would help to make a greater developmental leap towards creating a stronger connection between research and business, as well as applying research results in industry and the economy. Similarly to Germany and Finland, which have created centres for applied research that are independent from traditional universities, we need to allow our researchers to work with practical and applied solutions. This would contribute to a greater appreciation of intellectual property and an increase in the number of patents in Estonia. According to the European Patent Office, the number of EU patents applied for in Estonia per million inhabitants was 51, while the corresponding figure in Finland was 380, in Germany 309 and the Netherlands 383.<sup>5</sup>

#### 2. Collaboration and export

According to ITL's vision, Estonia will be a country where companies are part of the global value and production chain with high added value, in which they play an integral and important role, thereby ensuring a stable work and cash flow.

Some of our companies have already achieved a significant position in the global production chain; however, we believe that on a larger scale, these developments do not happen by themselves. An increase in the export of smart products and services will be achieved through strategic partnerships between the government and/or companies, as well as cross-sectoral and international cooperation networks, which facilitate the sharing of knowledge and experience. Broad-based collaboration networks within a specific country or targeted towards broader geographical or economic regions – such as clusters or professional associations – give

<sup>&</sup>lt;sup>4</sup> Gross domestic expenditure on R&D at national and regional level 2019, Eurostat

<sup>&</sup>lt;sup>5</sup> Patent Index 2021, European Patent Office

entrepreneurs an opportunity to communicate with stakeholders in various supply chains. Such networks also provide an opportunity to raise funds, bring together stakeholders from different countries with similar potential problems and solutions, and allow larger companies higher up in the production chain to seek suppliers. Additionally, such networks allow for analysing market demand in different product groups and thereby make it possible for companies to collaborate in entering new markets or expanding in existing ones.

In 2020, the share of Estonian export in world trade was only 0.096%.<sup>6</sup> In order to compete in international markets with greater success, Estonia needs to strengthen collaboration between the state and companies, aside from promoting innovation and applied research. In order to achieve successful cooperation between the private and public sector, we must support business organisations and networks that help create necessary connections at international level and utilise modern technologies for better information exchange between stakeholders.

#### 3. Digitalisation of the economy

The third fundamental economic pillar is real-time economy. According to ITL's vision, by 2035 Estonia will stand out in Europe due to its most automated digital business environment, which has fully transitioned to electronic invoices, receipts and referral letters, and where all reporting occurs automatically. The time resources freed up by automated reporting are directed towards developing innovative and sustainable solutions, and in promoting innovation.

Digitisation, automation and robotisation help to ensure the sustainability and productivity of companies. The rapid digitisation and automation of processes in the Estonian private sector, combined with fully available public sector data create new opportunities for real-time data collection and utilisation. Services created using new data and Al-based business models are secure and user-friendly, allowing people to decide whether they want to share their data or not.

Various economic sectors such as manufacturing, transportation, logistics, etc. will operate on significantly safer and more sustainable grounds in the near future with the help of technology. With smart ICT solutions, the implementation of the green transition progresses in all sectors, and the export of sustainable solutions developed in Estonia increases.

<sup>&</sup>lt;sup>6</sup> The 2020 annual accounts of the state, Ministry of Finance

#### Table 1. Innovative and sustainable economy – ITL's vision

The Estonian economy is sustainable and oriented towards collaboration; it is the world's most flexible implementer of new solutions and R&D results, and an exporter of this experience.

Innovation and R&D:

we will achieve higher added value through productisation, servitisation and the bold implementation of R&D activities.

1.1. Investments in R&D by companies and the government facilitate the creation, growth and internationalisation of hightech and export-capable companies.

 Practical applications of R&D are widely used in companies.

1.3. The awareness of companies of intellectual property and the number of patented technologies has increased. Collaboration and export:

Estonia's bold economy is focused on global value chains with high added value.

2.1. The export of smart products and services has increased.

2.2. There are cooperation networks integrated into international value chains to facilitate the sharing of knowledge and experience. Digitalisation of the economy: Estonia has the world's

most automated real-time digital business environment.

3.1. Companies have achieved sustainability and productivity through digitisation, automation and robotisation.

3.2. New and secure databased business models ensure user-friendly services.

3.3. The implementation of the green transition progresses with the help of smart ICT solutions.

**Desired outcome**: Estonian economic growth comes from the implementation of ICT along with automation and robotisation, as well as the successful application of R&D outputs.

Figure 1. Strategic approach: Innovative and sustainable economy

# The world's most flexible implementer of new solutions and R&D results, and an exporter of this experience



**Desired outcome:** Estonian economic growth comes from the implementation of ICT along with automation and robotisation, as well as the successful application of R&D outputs.

#### **II Smart people**

## A vision of people: Estonia has smart people due to the technology used in all fields of life and the development of a smart workforce.

The main problem in this regard is the shortage of people with ICT skills. The projection is that the total number of people employed in primary ICT professions will increase by at least 1.5 times by 2027. Considering the labour demand in the near future, the new additions from the educational system and migration, the ICT sector and all other economic sectors will need at least 2,600 new ICT specialists annually for all primary occupations combined. That is roughly 18,000 people over the period of 7 years for the entire ICT sector – for ICT companies as well as for other sectors.<sup>7</sup>

The ability of the current educational system to teach suitable skills is also a problem. Estonia is well known for its good results in PISA tests; the prerequisite for the successful use of ICT skills, however, is the ability to put theoretical facts and knowledge into practical use. Based on the results of the PIAAC test, which measures the problem-solving skills of the adult population, Estonia ranks below average among the OECD (Organisation for Economic Co-operation and Development) countries. Finland, for example, achieved high results in both tests. The higher education system needs to continue educating ICT specialists, by providing them with competencies that are necessary today and into the future and expanding the provision of ICT skills to students in all fields. In this, it is important to focus on increasing both the quality and number of graduates. It is also important to continue introducing changes in the vocational education system.

ITL's vision of smart people foresees better technological skills, more successful implementation of knowledge in solving real-life problems, and a more flexible labour policy from both the state and companies. Below we have listed some of the most important areas that require significant developmental leaps and major changes:

#### 1. Technological competencies

To ensure that the Estonian population is at the forefront of technological knowledge and skills, technological skills should be an organic part of every educational level. Here, we view education in a broader sense than just formal schooling – it is equally important to develop hobby education and lifelong learning, and to emphasise the technological perspective in other public services (for instance, through research-oriented programmes and content in the media).

Creating solid foundation in STEM subjects in general education is crucial in preparing students for successful careers in technology and for the widespread dissemination of ICT skills. ICT education must be integrated into curricula at all levels of education, from primary education to university, regardless of what is being studied and where. Information technology has become an integral part of modern life; therefore, people must have the right to acquire the skills required for their daily lives and work in every field of activity and at all stages of their lives. They must also have the opportunity for lifelong continuing technological education, and

<sup>&</sup>lt;sup>7</sup> OSKA study on ICT 2022, Estonian Qualifications Authority Kutsekoda

according to ITL's vision, with the support of innovative learning methods, 75% of institutions and businesses and 50% of the working-age population will participate in this.

#### 2. From knowledge to skills

In order to achieve the widespread acquisition of ICT skills, it is necessary to have an adequate number of subject teachers and involve entrepreneurs in providing education. In comparison to OECD countries, the average age of Estonian teachers is among the highest, and we have a serious problem with the next generation of teachers. 50% of teachers are over 50 years old. One in five mathematics, chemistry, geography and biology teachers are at least 60 years old, and among physics teachers, as many as 25% are over 60 years old.

First and foremost, it is necessary to make the career of teachers, especially those teaching science and technology subjects, more attractive. Currently, the salaries of professionals working in the ICT sector are several times higher than those of general education school teachers. Estonian teachers' salaries are also among the lowest in Europe. Only teachers in Greece, Latvia, Hungary and Slovakia earn less than those in Estonia. It is naive to expect that enough competent young people with a mathematics or physics education would be willing to choose the difficult work of teaching over the clearly better-paid career of an IT engineer. The salaries of STEM teachers should be differentiated from general teaching salaries, which would make it possible to significantly reduce the salary gap with the private sector. Another problem that Estonian teachers face is work overload – the working time of teachers does not include time for preparing lessons, providing feedback on assignments and their own professional development, which would allow them to learn and apply innovative teaching methods. Whether or not teachers are prepared and equipped to use innovative teaching methods compared to existing practices depends on the working conditions provided to them.

Furthermore, it is important to develop precise criteria for funding educational innovation and to promote the implementation of innovative learning methods. For example, in teaching physics, it would be important to use a significant amount of project-based learning elements where the laws of physics are intertwined with ICT solutions. Improving problem-solving skills requires a more practical and hands-on approach, where the facts are given a meaning and students are empowered to seek new solutions on the basis of existing knowledge.

This process also requires the involvement of employers who can offer young people and lifelong learners real-life experience through practical work projects, allowing them to apply the acquired theoretical knowledge in practice. This can also be accomplished through providing internships and sharing experiences as part of vocational training curricula and continuing education programmes.

#### 3. Workforce

It is obvious that educational processes are insufficient to satisfy labour force demand in the socalled smart sectors. Automatisation is a logical and important part of solving this problem; however, it must be supported by additional developments, such as attracting international talents and offering new types of employment relationships. In the context of global competition, countries must ensure the availability and mobility of the workforce.

To reduce labour shortages, we can amend our policies so that they support immigration and facilitate remote work across borders. Creating a supportive living environment and promoting

societal openness to diversity are important for engaging foreigners who create high added value. Also, allowing short-term movement is an excellent option for creating an environment where knowledge transfer can happen.

At the same time, it is necessary to develop the legislative environment that allows for utilising a foreign workforce in Estonian companies while being based in their own respective home countries. Such flexible working solutions have become increasingly popular, and we have much to gain from them. Estonia has the opportunity to be a role model in creating and implementing flexible employment relationships worldwide.



Table 2. Smart people – ITL's vision

Desired outcome: Estonia's demand for a workforce in smart sectors is covered.

# Smart people due to the technology applied in all fields of life and the development of a smart workforce



Desired outcome: Estonia's demand for a workforce in smart sectors is covered.

#### III A bold state with a vision

## A vision of the state: Estonia is globally recognised as having the most user-friendly business and living environment, as well as the most efficient governance.

According to the 2020 public service report by the Ministry of Finance, the Estonian government sector employs about 119,000 people (which is about a 1.6% increase from the previous year), which accounts for about 17% of the total working-age population.<sup>8</sup> According to an OECD report, Estonia and Spain are leading in terms of the growth of the number of employees in central government<sup>9</sup>, indicating the need to review the models of cooperation between the private and public sectors. One possible reason for the high level of employment in the government sector could be the insufficient delegation of tasks to the private sector and a lack of flexibility in this regard.

According to population projections, by 2040 the working-age population is expected to decrease by approximately 130,000 people (-13.3% compared to 2017). To maintain the same rate of decrease, the number of people employed in the government sector should be reduced by 15,000, or an average of 650 employees per year.<sup>10</sup> Here, we would like to pose a question: what if we replaced 30,000 routine public sector jobs with e-services, artificial intelligence and collaboration with the private sector? This would amount to roughly one quarter of the current number of employees and, when divided over a period of ten years, would mean an annual reduction of 2.5%. The money saved could be used for salaries and the development of services.

Governance that relies on innovation and e-solutions must be accompanied by high-quality and convenient service offerings that make Estonia's business and living environment attractive internationally.

To build a smart state, we must deliberately guide the state's activities based on innovation goals, continuously create better e-services, and ensure a comfortable, secure and sustainable living and business environment for both current and future residents of Estonia.

#### 1. Business environment

We aim for Estonia to be the best country in the world in 2035 in terms of facilitating innovation and entrepreneurship. This should be the vision of governance – a goal to strive towards as well as a basis upon which to evaluate any potential actions. The business environment consists of many different parts, and if insufficient attention is paid to any of them, it often leads to a lack of new investment and employees. Innovation must be supported by both tax and education policy decisions, as well as by continuing innovative national initiatives such as electronic identity, e-residency and the development of proactive services. The government's conscious focus should

<sup>&</sup>lt;sup>8</sup> <u>The public service report of 2020</u>, Ministry of Finance

<sup>&</sup>lt;sup>9</sup> Report "Government at a Glance 2021", Organisation for Economic Co-operation and Development (OECD)

be on simplifying and automating the business environment – this would allow companies to submit their reports as easily as individuals file their tax returns.

As for foreign investments, we must be able to break out of our traditional collaboration models. We can no longer be a country with a cheap labour force. Greater life satisfaction among people and economic competitiveness requires new models that rely on knowledge and high-tech solutions – if we continue maintaining the current economic relationships, we would only preserve our current level of wealth. At the same time, investments with higher added value bring along specialists with a higher level of expertise, and these specialists can facilitate the transfer of knowledge into economic sectors. Here it is important to ensure Estonia's good reputation as an open-minded digital society.

Finally, it is important to consider the export potential of digital solutions from when they are commissioned, even if it is done by the government, so that the use of existing technological solutions can be modularised and solutions resold to future clients. In addition to economic benefits, it is also an opportunity for Estonia to stand out internationally from the perspective of reputation management. The cooperation between the Estonian state and companies in exporting our digital solutions is a key to supporting our economy and maintaining our international reputation as a digital nation.

#### 2. Governance

Similarly to developing a conscious innovation policy, if we wish to become a country with the most efficient governance in the world, we need to make a strategic decision to strive towards this goal. We should no longer assume that it is expensive to maintain a small country.

Achieving efficiency involves various aspects, one of which is giving a greater role to the private sector in the development of services. The activities of the state should focus on market failures – the state is not a bus company or an IT company; national IT development centres must be smart customers and bold experimenters. In the development of e-services and internal processes, efficiency can also be increased through the widespread implementation of Al, machine learning and other new technologies. The state should ambitiously aim at the automation of rule-based tasks and processes in the public sector.

From the perspective of the state budget, it is important to generate higher revenues through increased productivity. A stable, simple and flexible tax environment ensures the sustainable functioning of the state and the trust of its citizens in their country.

#### 3. Living environment

The third pillar of a smart state with a vision is a convenient, safe and sustainable living environment. The e-services provided by the state in all sectors must be sustainable, accessible and based primarily on a convenient user experience. With both private and public sector services, it is necessary to ensure their reliability, transparency and security. Estonia should consistently ensure a high level of cybersecurity and the availability of relevant experts, which can be achieved through cooperation between the private and public sectors.

An equally important aspect is addressing the climate crisis and implementing the green transition based on the interests of the business community and citizens. While ICT plays a key role in developing these solutions, the public sector has a responsibility as a driver of the green

transition to ensure conditions that enable the private sector to contribute to innovation, R&D and their implementation, as well as ensure that the sector has a workforce in the longer term.

To create innovative digital services, it is necessary to ensure an ultra-fast, reliable and affordable broadband connection that is accessible regardless of location. When people have the opportunity to invest their time primarily where they can create the most value and reduce time spent on different administrative tasks, transportation and other similar activities, the first important steps have already been taken towards faster economic development and a more sustainable society.

By 2035, Estonia will have exemplary e-services in all areas of life, have a safe and healthy living environment, and its citizens will find it easy to communicate with the state. By building on these foundations, we can construct a sustainable society.

#### Table 3. A bold state with a vision – ITL's vision

Estonia has the most user-friendly business and living environment and the most efficient public administration.		
<b>Business environment:</b> Estonia is the boldest country in the world to foster innovation and entrepreneurship.	<b>Governance:</b> Estonia has the most efficient governance in the world.	Living environment: The living environment in Estonia is comfortable, safe and sustainable.
1.1. The state's focus is on creating a comfortable and stable business environment and supporting an innovation-centered approach.	<ul> <li>2.1. Developing an efficient and smart state model is a strategic decision that is achieved through giving a greater role to the private sector, where the state is a smart service buyer and a bold experimenter.</li> <li>2.2. In the public sector, all work tasks and processes are rule-based and automated.</li> <li>3.1. Estonian e services are user-friendly, and accessi administration 3.2. Estonian cyber security place, and p private sector reliable and the sector reliable and the the green trans the interests of</li> </ul>	3.1. Estonian e-government services are remarkably user-friendly, sustainable and accessible across administrative areas.
		3.2. Estonia has strong cyber security measures in place, and public and private sector services are
to foreign investments that add to the country's smartness		reliable and transparent.
and bring additional know- how.		3.3. Activities that support the green transition consider the interests of the business
1.3. The country is vigorously	2.3. The country has a stable tax environment: revenues increase through improved productivity and the tax system remains simple, flexible and transparent.	community and Estonian citizens.
solutions and considers their export potential from the stage of commissioning.		3.4. Regardless of location, we have an accessible ultra-fast, reliable and affordable broadband connection, which allows for
		the development and use of innovative digital

**Desired outcome:** Estonia provides an attractive business environment and has high levels of satisfaction with public sector services. Estonia is a country with the lowest government expenditure as a percentage of GDP, and the state consistently invests in digital tools and machine learning.

### Estonia has the most user-friendly business and living environment and the most efficient public administration



**Desired outcome:** Estonia provides an attractive business environment and has high levels of satisfaction with public sector services. Estonia is a country with the lowest government expenditure as a percentage of GDP, and the state consistently invests in digital tools and machine learning.