McKinsey & Company

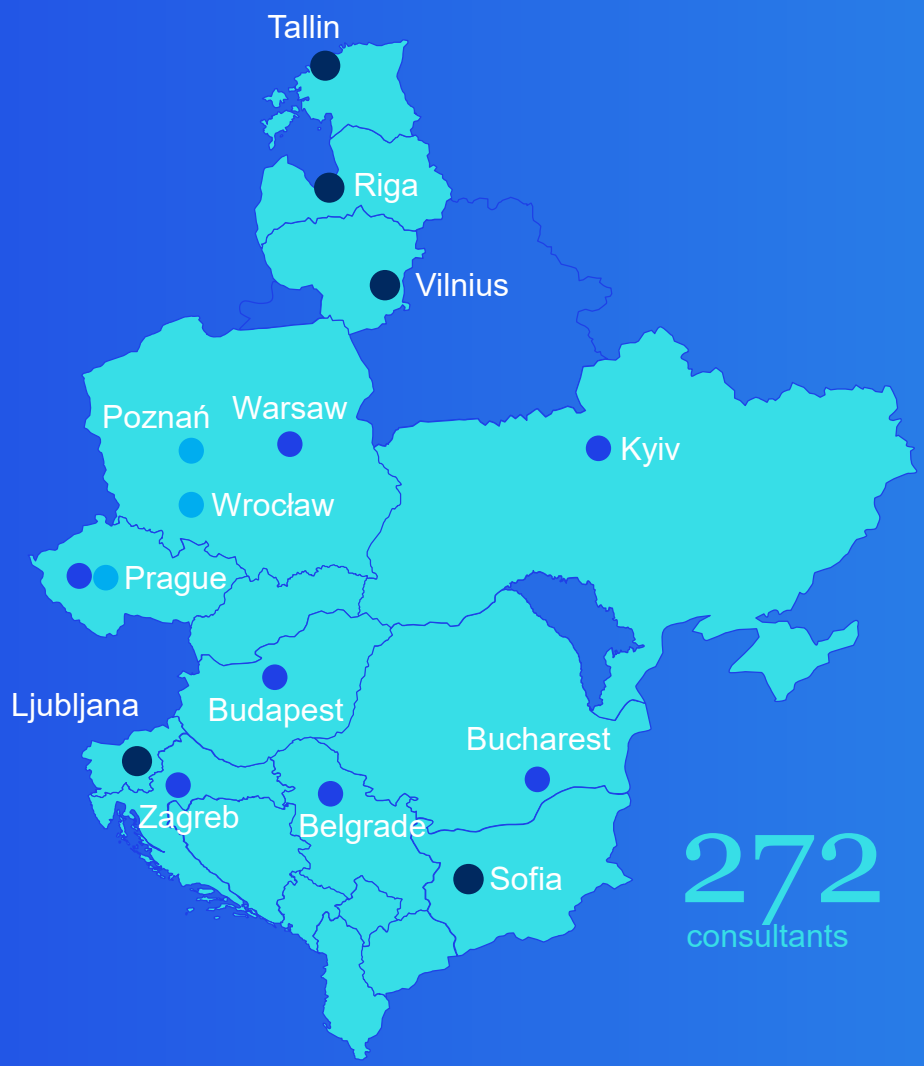
Lithuania as a Digital Challenger

How can digital economy become the new growth engine for the country and the CEE region?

Report insights presentation – perspective on Lithuania

March 12, 2019

McKinsey & Company has a strong presence across the entire CEE region



We have the biggest footprint in the region

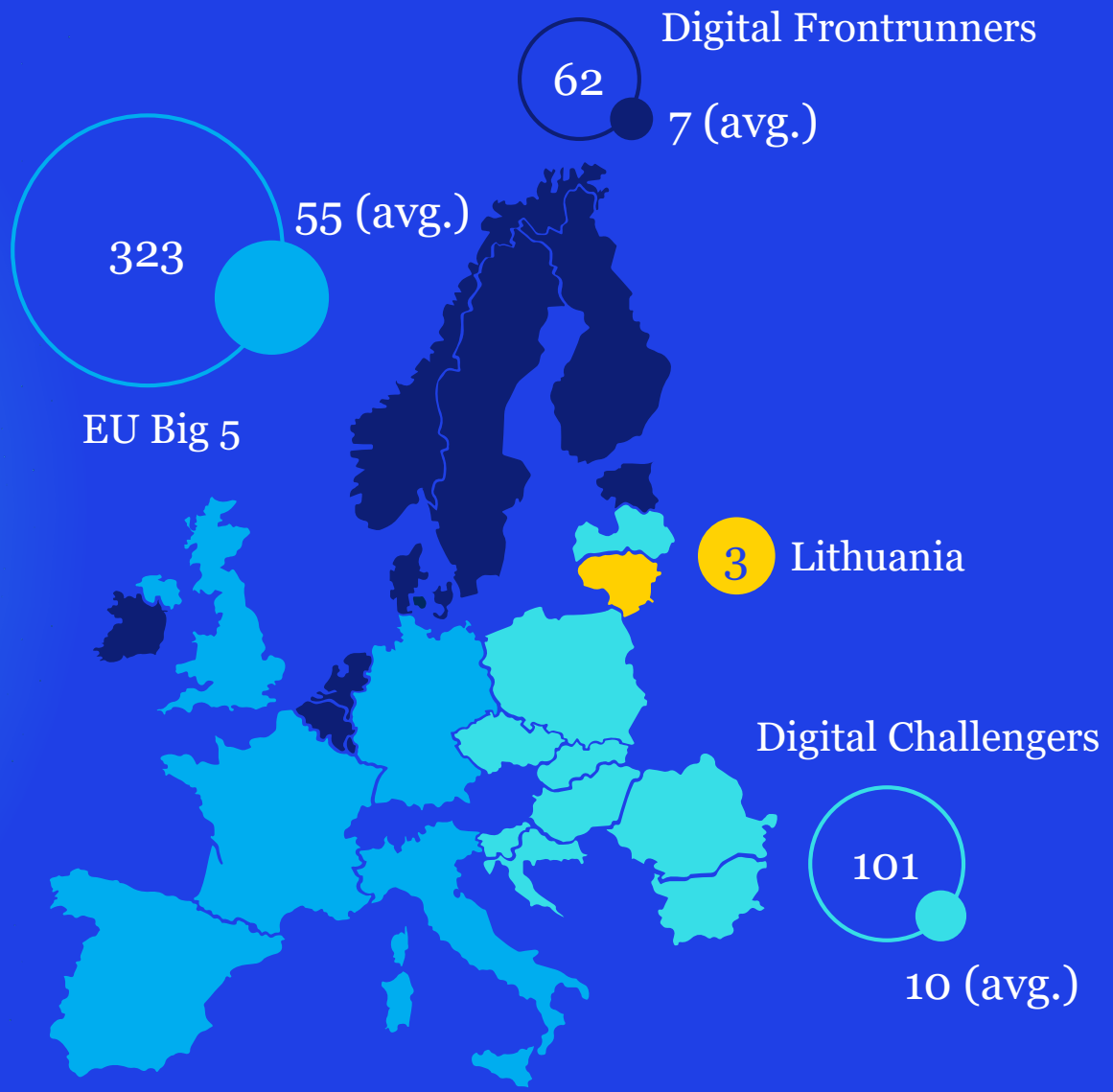
- The largest and most experienced strategy consulting firm with extensive local footprint
- Over 1800 people in McKinsey & Company in the region
- 9 local offices with over 270 consultants, coverage of entire CEE
- Recognized and trusted partner in public and social space
- Our people have work experience from projects in CE, but also other regions; covering all relevant sectors

Our research into the potential of the digital economy in Central and Eastern Europe resulted in a publication of a pan-regional report and 10 country deep-dives

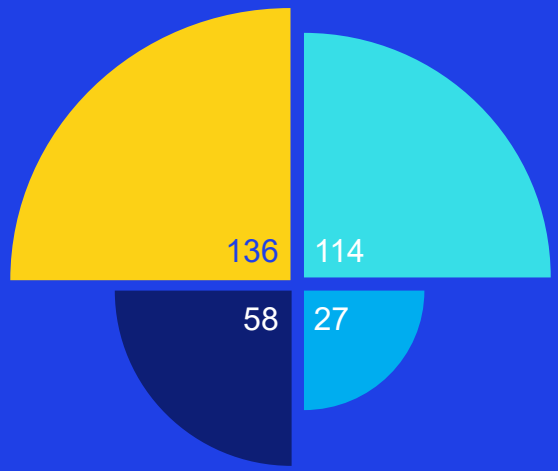
10 Digital Challengers in Central Europe

Looking at Europe from an economic perspective, we can distinguish three regions

Regional total population vs country average, 2017, millions



GDP per capita growth, 1996-2017, %



Lithuania cannot count on traditional engines of growth any more and should look for the next growth lever

Production (GDP) = Productivity A × Labor L^{β} × Capital K^{α}

Productivity lags behind Digital Frontrunners

Lithuania has limited work capacity reserves – a relatively low unemployment rate, with working hours above EU average

Economy in Lithuania is under-capitalized and the gap is closing slowly

1 EUR current prices and purchasing power parities in current prices
2 Net assets per employee, at prices of 2010
3 Belgium, Denmark, Estonia, Finland, the Netherlands, Ireland, Luxembourg, Norway, Sweden

SOURCE: Eurostat; OECD

Lithuania can build on its strong digital economy growth dynamic to catch up with Digital Frontrunners

	Lithuania	CEE *Digital Challengers*	EU Big 5[2]	Digital Frontrunners – Sweden example
Share of digital economy[1] % GDP, 2016	5.1	6.5	6.9	9.0
Growth of digital economy %, 2012-16	7.2	6.2	3.1	9.9
Growth of non-digital economy %, 2012-16	2.6	2.6	1.2	2.2

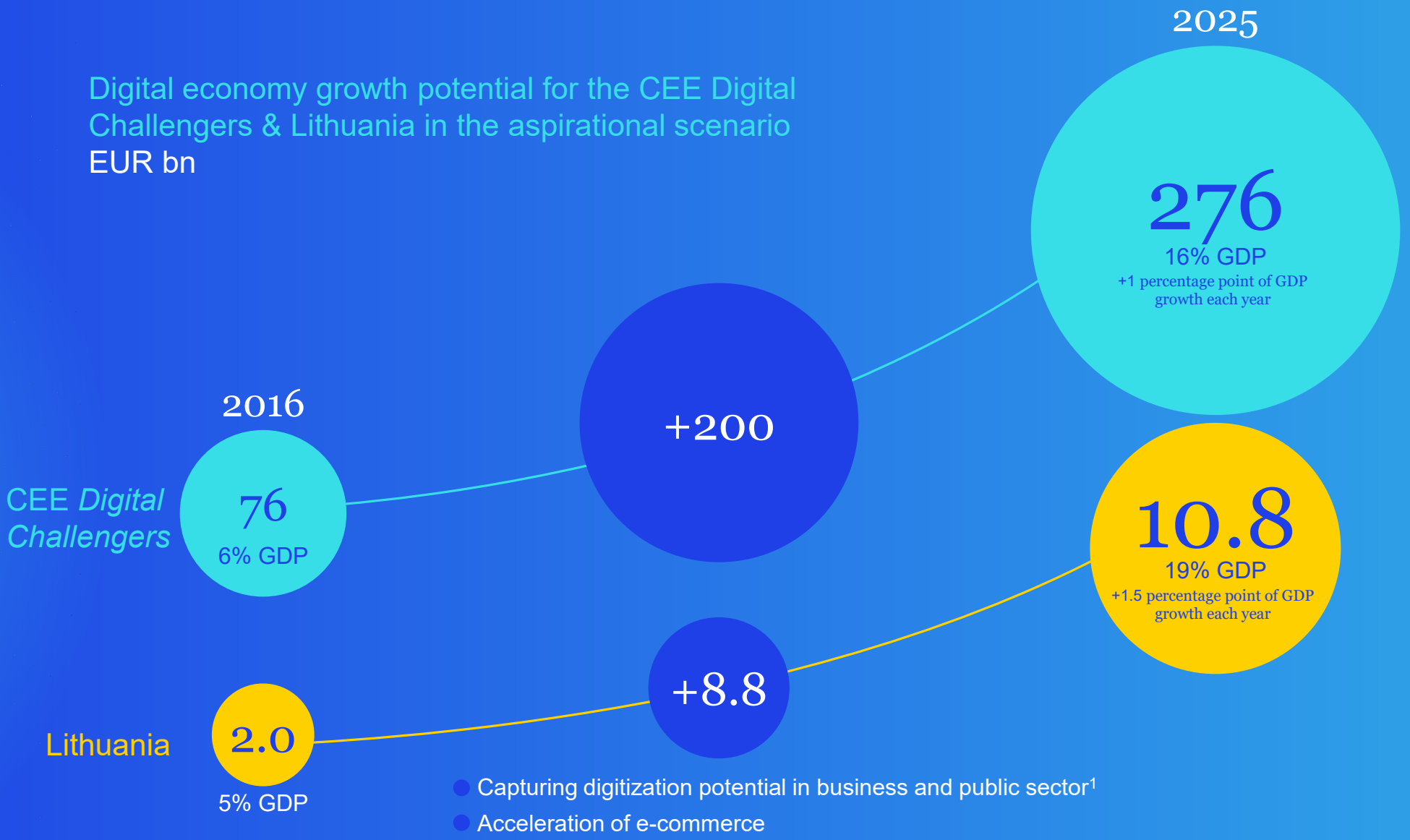
1 Digital economy is calculated as sum of sectors: ICT, e-commerce and consumer spending on digital equipment (e.g., computers, smartphones, smartwatches)
2 Spain, France, Germany, UK, Italy

SOURCE: Eurostat; Local institutes of statistics; McKinsey Global Institute

The digital economy in 2025 can bring up to 200 billion EUR in GDP in CEE and 9 billion in Lithuania, adding up to 1.5 p.p. to GDP growth per year

Digital economy growth potential for the CEE Digital Challengers & Lithuania in the aspirational scenario

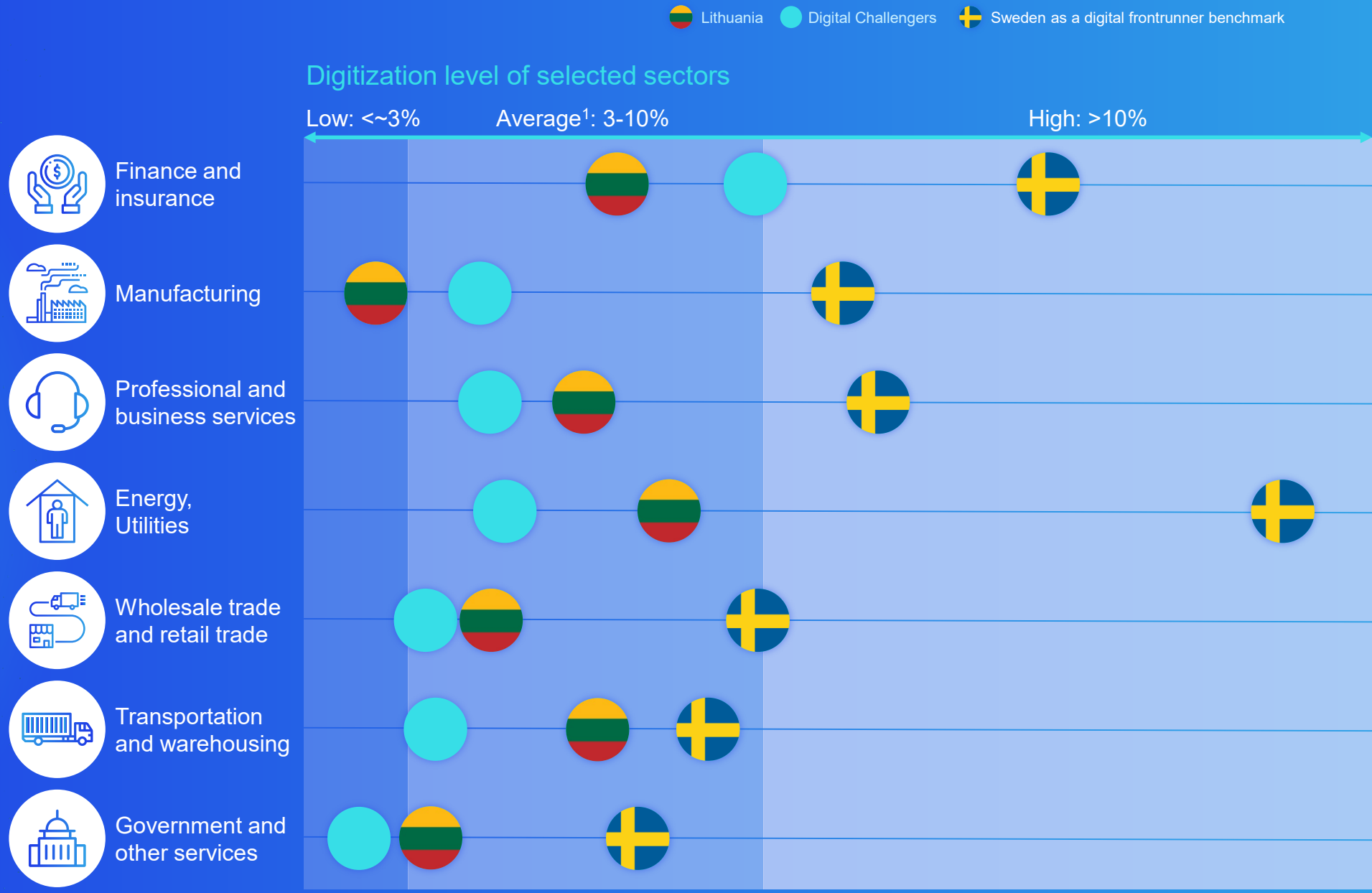
EUR bn



1 Productivity growth captured by increase of traditional ICT usage (software, hardware, telecommunications) to the level of Sweden – representation of Digital Frontrunners

SOURCE: Eurostat; Local statistical offices; IHS; McKinsey Global Institute

Lithuania's digital potential can be achieved by addressing gaps in the digitization level of private and public sectors



1 Average level of all sectors (excluding the most advanced ICT sector and finance)

SOURCE: Eurostat; Local institutes of statistics, McKinsey Global Institute

Four strengths supporting Lithuania's Digital Challenger status

Good overall quality of the primary and secondary education systems
(mathematics, reading and science literacy PISA[1] average of 475, slightly behind Digital Frontrunners' score of 505)

A large pool of graduates in scientific and technical faculties (STEM[2])
Over 245 graduates per 100.000 inhabitants per year, 7th place in the EU, better than Germany or Sweden

Well developed digital infrastructure
Approx. 98% of the population with 4G access, at the level of Digital Frontrunners

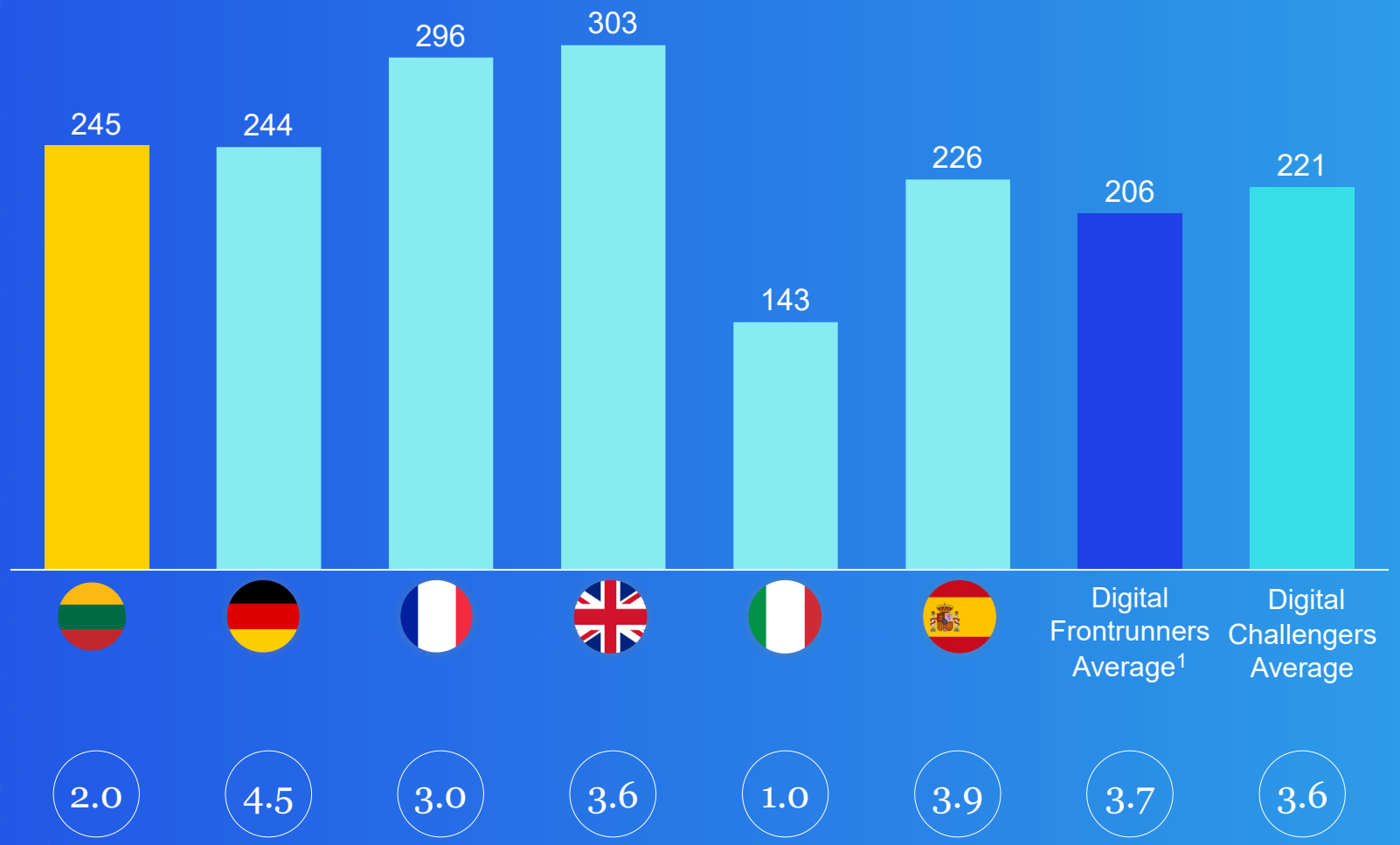
A favorable structure of economic growth –
Based on the competitiveness of work, openness to the development of new sectors and the implementation of ambitious goals in the area of digitization

1 *Program for International Student Assessment* (PISA)
2 STEM – science, technology, engineering, and mathematics

SOURCE: Eurostat, OECD

Lithuania exhibits a relatively bigger STEM graduate talent pool compared to Digital Frontrunners – although with room for improvement in terms of the share of ICT graduates in the student population

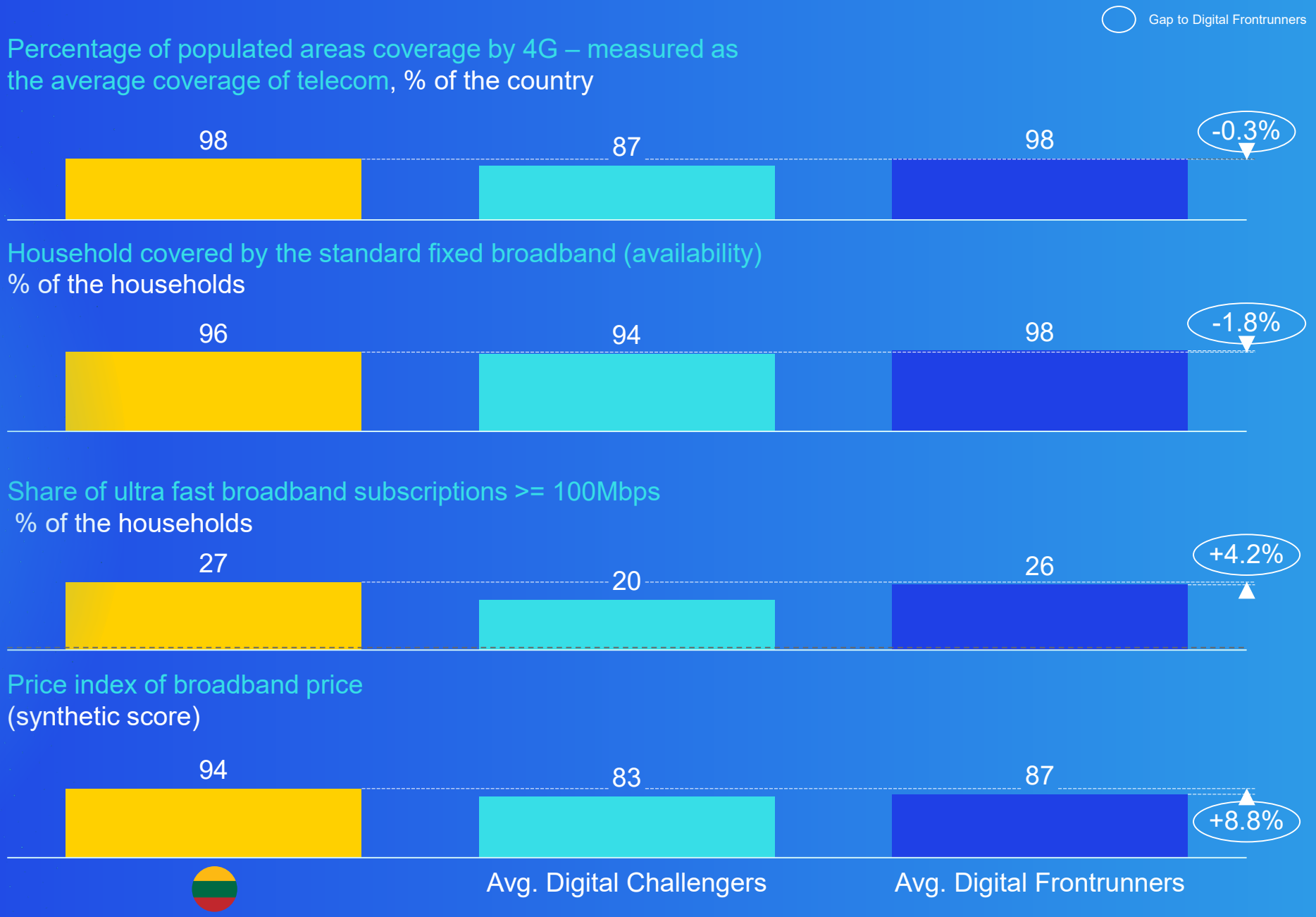
Number of STEM graduates
per 100.000 inhabitants, 2016



1 Digital Frontrunners: Belgium, Denmark, Estonia, Finland, Holland (data for 2015 assumed), Ireland, Norway, Luxemburg, Sweden

SOURCE: Eurostat, Unesco Institute for Statistics

Lithuania stands out in terms of access to ultrafast broadband in comparison to Digital Challengers countries and Digital Frontrunners



SOURCE: DESI 2018, World Economic Forum

However additional work needs to be done in three major areas

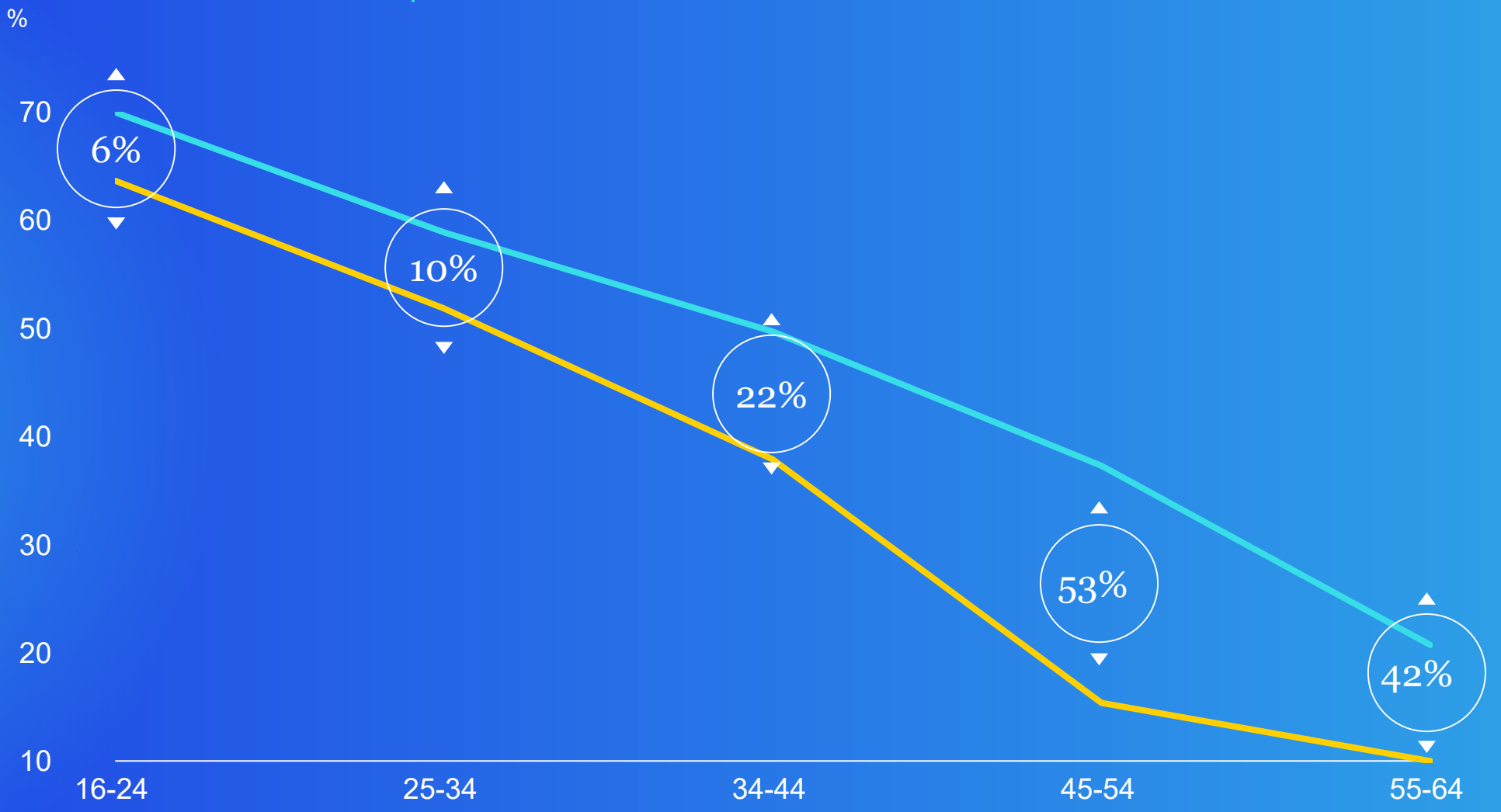
Development of digital and soft skills among the general population

The adoption of digital tools in public and private sectors

Support innovation and entrepreneurship developments and further ease of running a digital business

Across all age groups in Lithuania, the percentage of people with advanced digital skills is below Northern European benchmarks

Citizens with advanced digital skills[1] by age groups, Lithuania vs. Northern Europe[2]

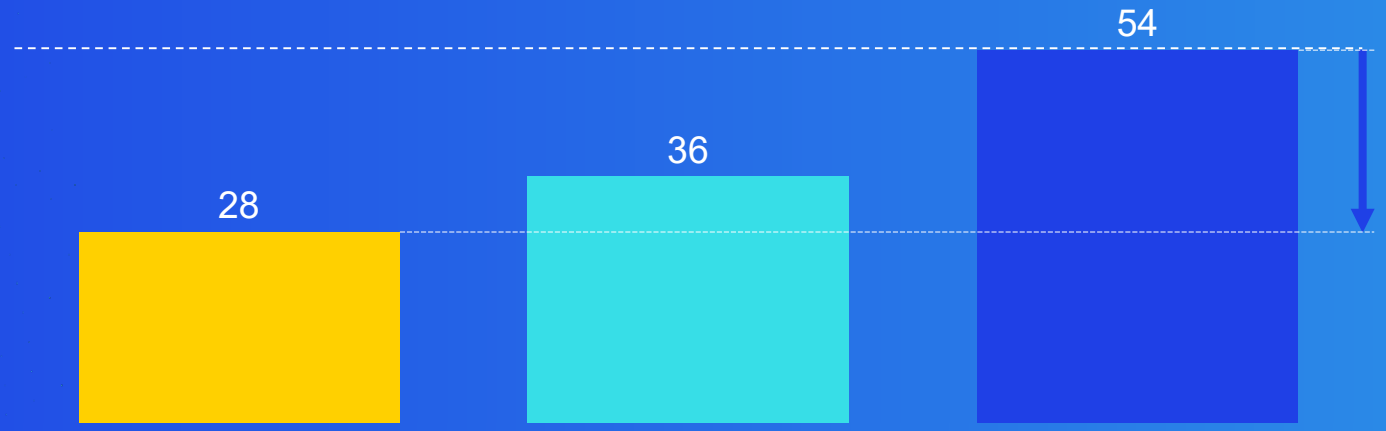


1 Advanced digital skills - analysis and data collection using digital tools, the use of online tools such as banking or e-commerce, use of online communication
2 Belgium, Denmark, Estonia, Finland, the Netherlands, Ireland, Luxembourg, Norway, Sweden

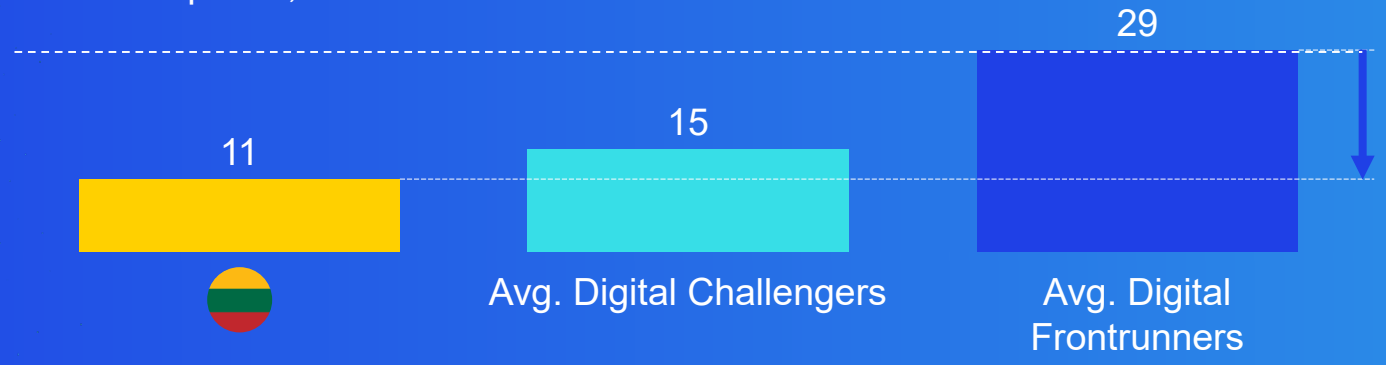
SOURCE: Eurostat, McKinsey & Company analysis

Participation rate in education and training and ICT skills development among enterprises' personnel in Lithuania is lower than in Digital Frontrunners

Participation rate in education and training in the last 12 months
% of 25-64 years old , 2016



Enterprises that provided training to develop/upgrade ICT skills of their personnel
% of enterprises, 2017



SOURCE: Eurostat, World Economic Forum

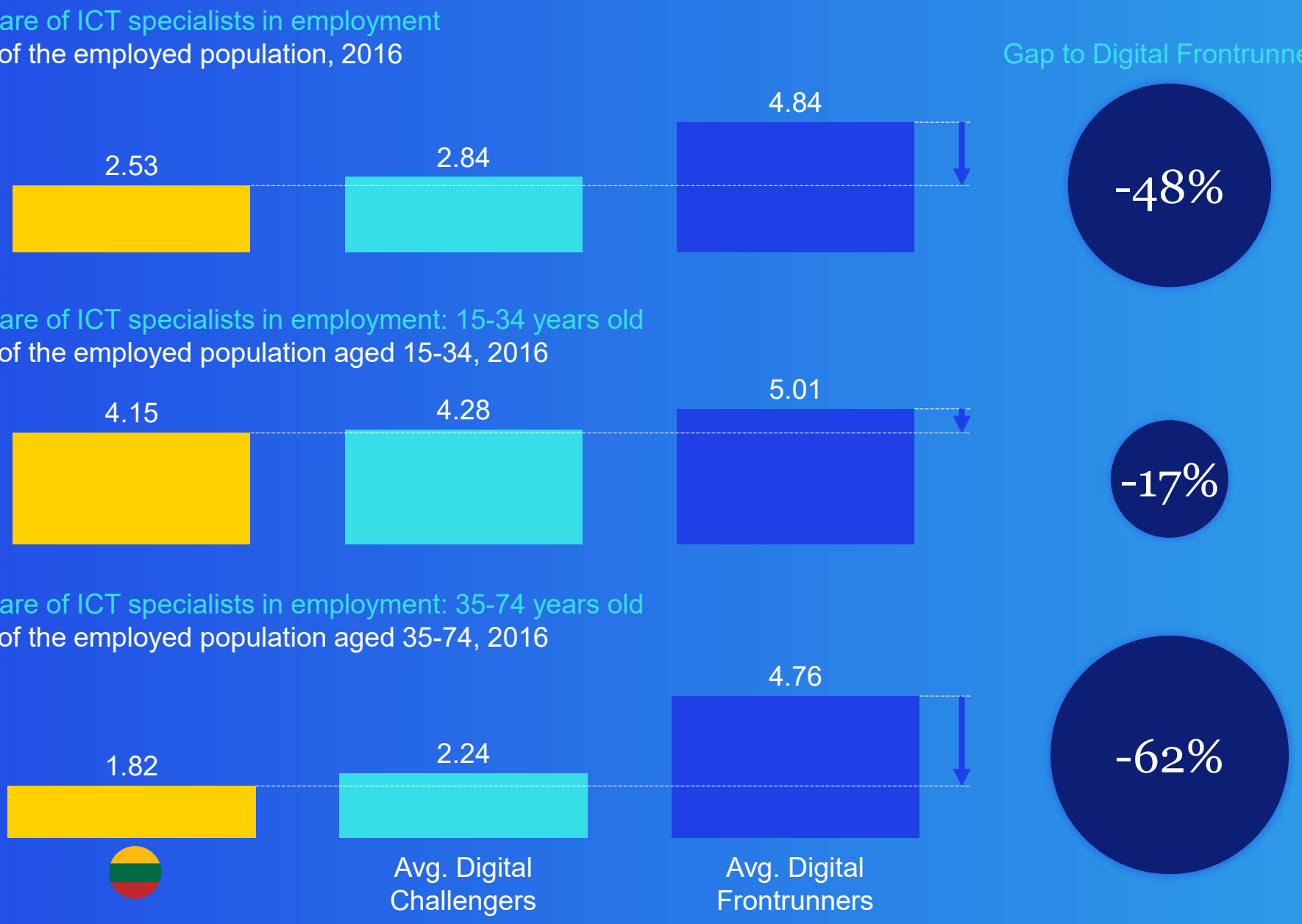
The private sector in Lithuania is less advanced in the use of digital tools than the countries of Northern Europe despite their performance above Digital Challengers averages

Selected digital tools
% of enterprises using the tool, 2016

1 Belgium, Denmark, Estonia, Finland, Netherlands, Ireland, Luxembourg, Norway, Sweden

SOURCE: Eurostat

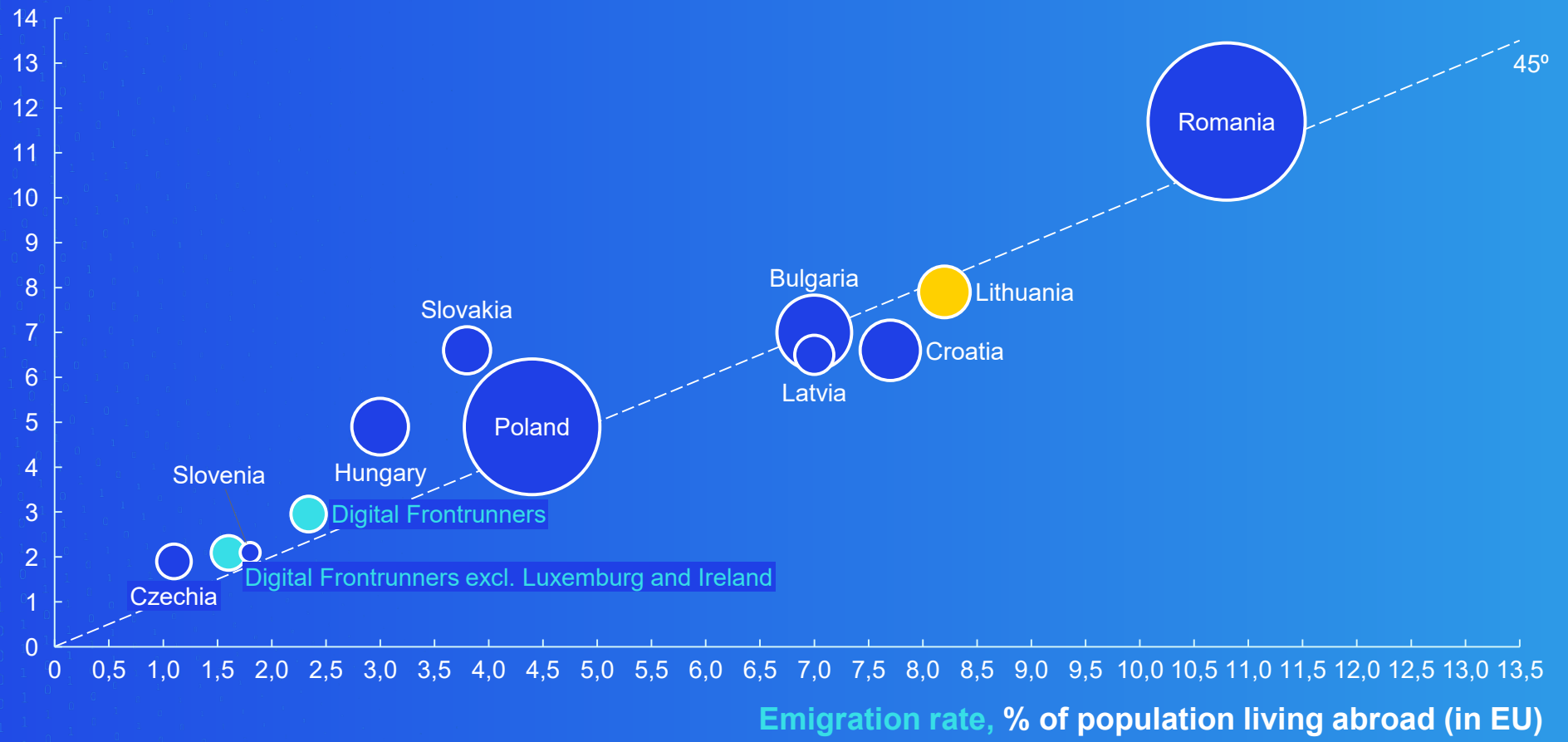
ICT employment gap in Lithuania is mostly driven by significant under-representation of ICT specialists in the older age groups



SOURCE: Eurostat, Unesco Institute for Statistics

Brain drain is a common issue for CEE markets, with Lithuania exhibiting a 4 times larger emigration rate for highly skilled individuals compared to most Digital Frontrunners

Highly skilled emigration rate
% of tertiary educated population living abroad (in EU), size of bubble – '000 people, 2017



1 Migration rates includes only citizens of the reporting country. For Croatia, Bulgaria, Romania, Latvia and Slovakia some of the values are missing. In those years migration rates are calculated as average rate for the rest of CEE region

SOURCE: OECD

10 recommendations to digitize Lithuania

Public sector

1. **Build skillset for the future** by developing a wide-ranging reskilling strategy, updating youth education for the future and actively counteracting brain drain
2. **Support technology adoption in the public sector** (e.g., speeding up the development of online public services and its adoption)
3. **Support technology adoption among businesses** (e.g., promote digitization benefits and digital transformation)
4. **Strengthen regional cross-border digital collaboration (**e.g., create a strong digital pillar within regional collaboration platforms)
5. **Improve startup eco-system** through e.g., improving entrepreneurial talent pool and increasing access to capital)

Private sector

6. **Actively adopt technology and innovation** (e.g., adapt your business model to meet the demands of the digital economy)
7. **Embrace a pro-digital organizational culture**
8. **Invest in human capital** (e.g., prepare your talent strategy for the digital economy)

Individuals

9. **Prepare for the digital economy –** invest in life-long learning
10. **Take advantage of digital tools** in all aspects of your life

1. Example: Multiple examples seen of measures undertaken by policy-makers across Europe to build skillsets for the future

Digiboost initiative in Finland

- Digiboost was a funding campaign launched by the Finnish Funding Agency for Innovation, **targeting Finnish SMEs and mid-caps in any industry sector**
- The main purpose was to **support companies in taking first steps in digital by employing digitization experts** – the agency covered half of the digital experts' salary for one year

Skills Norway

- Skills Norway is a national agency focusing on (among others) improving basic skills in the adult population in the areas of literacy, numeracy, oral communication, and the use of ICT
- As part of its Digidel 2017 program, it supported groups that do not use ICT as part of their everyday life, and help them acquire the skills needed to master these technologies

Czechitas in Czech Republic

- The Digital Academy is a project that educates and inspires women and girls to pursue opportunities in tech and computing fields. It is a requalification course and a mentoring program for future data analysts with no requirements on previous experience/knowledge
- The goal is to find jobs for the participants in cooperation with local companies

4. Close cooperation with the countries of Central and Eastern Europe can help accelerate the development of the digital economy in Lithuania

The CEE region in numbers

€1.4 trillion GDP

101 million citizens

12th economy in the world

Four arguments for the benefit of collaboration between Digital Challengers:

I

As the CEE region, Digital Challengers represent €1.4 trillion in GDP. Enabling Lithuanian enterprises to seamlessly tap into this potential can reap significant benefits.

II

Lithuania, like other CEE markets, exhibits high levels of market openness and comparable levels of digitization. This adds relevance to the shared experiences on what has worked well in digital investments and regulatory policy between the countries in the region.

III

Lithuania faces the same challenges as many other CEE markets, importantly the “brain drain” and need to reskill the workforce in the long term. Joint efforts across the region can help in finding and implementing the most effective solutions.

IV

Lithuania has developed different strengths related to the digital economy than other CEE markets. Sharing best practices can accelerate digitization.

6. Example: Following in the footsteps of technology companies, Kärcher offers a digital platform for fleet management of cleaning machines

Solutions

Kärcher machines are equipped with sensors that collect and transmit location and technical data

Freemium monetization model

Kärcher collects anonymous fleet data that can be used in the future to further expand the business model

SOURCE: Press search, company statements

8. Example: Open communication and a set of dedicated support tools help AT&T to re-skill its employees

Challenge

Implementation of technologies requiring new skills in the field of data processing and cloud analytics, programming, management, etc.

Solutions

Partnerships with universities such as Georgia Tech and Udacity, with a scholarship program at 32 other universities

Internal recruitment platform, showing the demand for positions and abilities, combined with a system of certified training to improve skills for employees

Impact

Re-skilled employees filled half of all positions related to the management of the new technology

The company has shortened the product development cycle by 40%, accelerating revenue generation time by 32%

SOURCE: Press search, company statements

The digital opportunity in Lithuania – summary

10%

Digital economy annual growth in Sweden – Digital Challengers countries and Lithuania may aspire to such a growth dynamic in the future

3x

Faster growth of the Digital Economy compared to the Non-Digital economy

8.8 bn euro

Additional GDP potential can be achieved by digital economy in Lithuania by 2025

Adoption of digital tools in public and private sectors and development of digital skills among the general population are essential to fully realize the potential of the digital economy in Lithuania

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Available at:
digitalchallengers.mckinsey.com

Thank you