

# Croatia – Emerging Digital Challenger

Digitization as the new growth engine for Croatia



November, 2018

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## Dedicated reports launched by McKinsey in CEE in the last 5 years

### Pan-CEE reports



Digital Challengers



Reigniting growth in CEE

### New growth model for CEE countries



5 opportunities for Poland

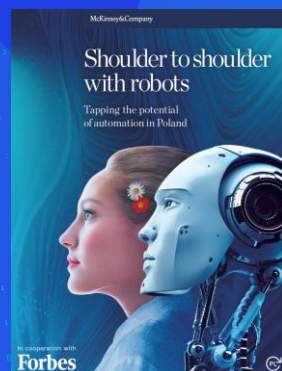


Poland 2025



How Hungary can win productivity race

### Future of work



Automation potential in Poland



Automation potential in Hungary

### Digital



Digital Czech Republic



Digital Poland



AI Revolution

# Executive summary

## Despite double-digit growth in the last 5 years, Croatian GDP is still below other EU economies

- Croatian GDP grew by 12% in the last 5 years, growing at slightly lower rate compared to other CEE countries
- Regardless, gap in GDP per capita compared to other EU economies is still significant – mainly driven by lower productivity and inadequate investments – and indicates substantial improvement potential in Croatia

## Digital economy could be the new growth driver and contribute up to 8.3 EUR billion in GDP by 2025 (additional ~2,000 EUR GDP per capita)

- Digital economy is still not exploited by Croatia: it accounts for ca. 5% of GDP (equivalent to 2.4 EUR bln)
- Most of the Croatian sectors have significant digitization gaps that need to be closed to unlock full digitization potential - allowing digital economy to grow to 10+ EUR bln in GDP contribution (equivalent to 16% of GDP)

## Automation potential in Croatia is up to 52% working hours by 2030 (equivalent to ca. 0.8 mln FTEs) – therefore, mitigating actions need to be developed to address wider macroeconomic implications – shift towards new, highly productive jobs, enabled by digitalization, with focus on technology and social skills

- Six sectors are expected to account for 72% of entire automation effect (equivalent to ca. 0.6 mln FTEs)
- Even though automation implies some jobs becoming obsolete, at the same time it creates new jobs with higher productivity
- Automation could help sectors with the highest job vacancy rates by lowering the demand for workers

## To drive digitization, Croatia needs to build on existing strengths and address identified pain points – while ensuring collaboration with other CEE countries

- Croatia should build its digitization effort on three favorable factors: ICT education system, macroeconomic landscape (e.g., labor costs) and positive examples of local pioneers driving digitization
- However, additional work is needed in building education system, creating ICT infrastructure, developing digital skills and setting up entrepreneurial environment to further support digital growth



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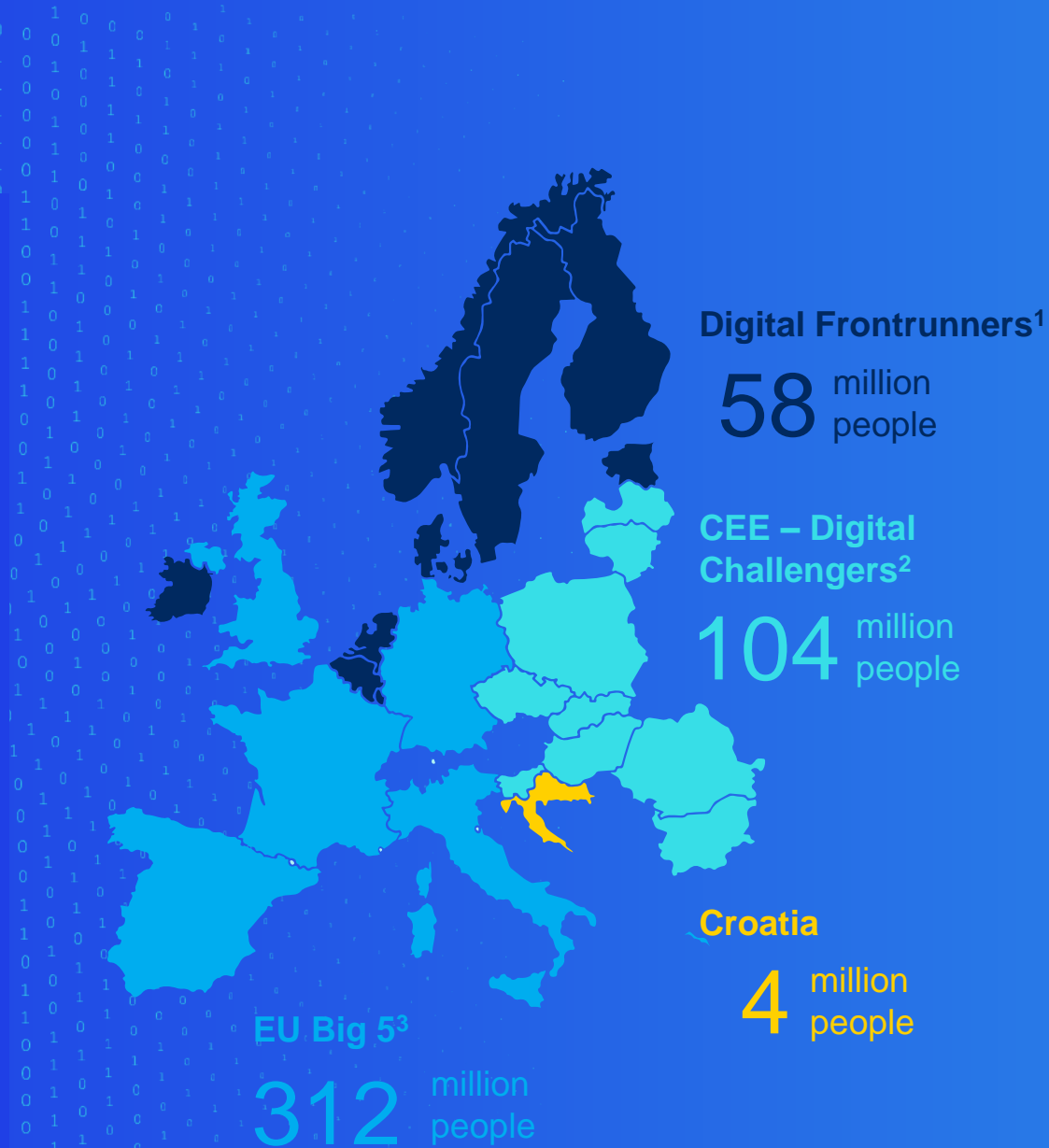
- **Potential of Digital Economy**

- Current digitization of Croatian economy
- Digitization impact on Croatian labor market
- Key drivers of digitization
- Recommendations
- Case for unity

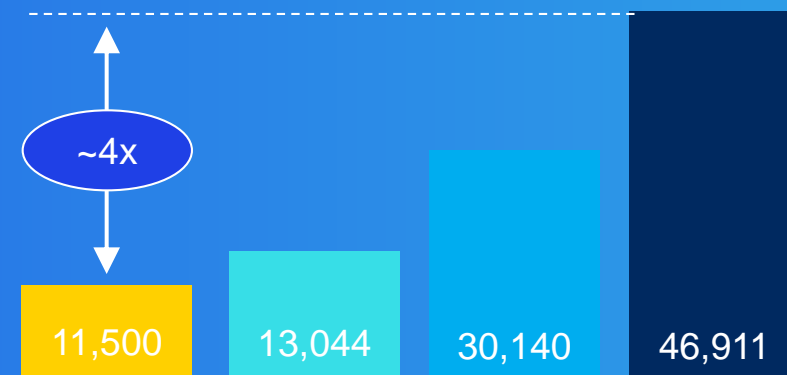




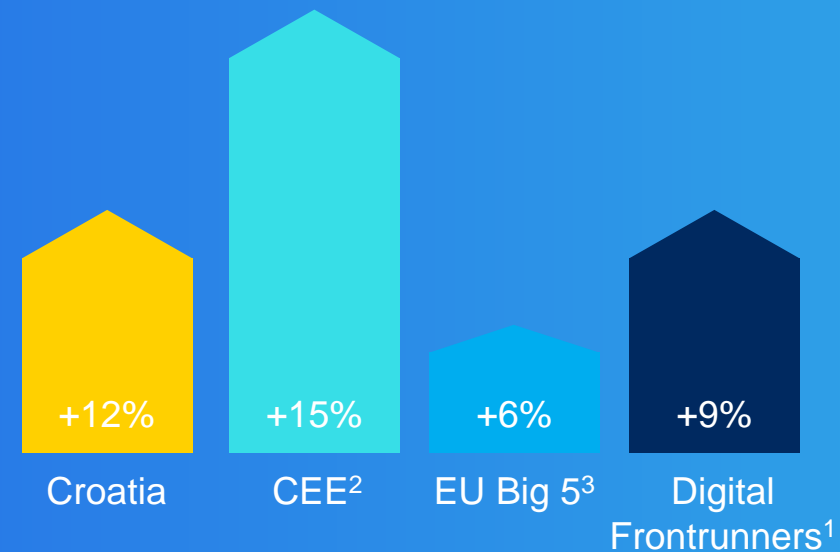
Despite significant 10+% increase in the last 5 years, Croatian GDP per capita is still below other EU economies...



GDP per capita, 2017, EUR



GDP per capita growth, 2013-2017, %



<sup>1</sup> Belgium, Denmark, Estonia, Finland, Ireland, Luxembourg, Netherlands, Norway, Sweden

<sup>2</sup> CEE: Bulgaria, Croatia, Czech Republic, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia

<sup>3</sup> France, Germany, Italy, Spain, UK

SOURCE: Local institutes of statistics; Eurostat

(GDP)

Digital  
Frontrunners<sup>3</sup>

Croatia

# Croatia

# Productivity

## Productivity - GDP per hour worked<sup>2</sup>, 2017, EUR

64



30

# Labor

$L^B$

Unemployment, Aug 2018, %

Hours worked  
per year per  
employee, 2017

5.7

8.5



1,573



1,835

23

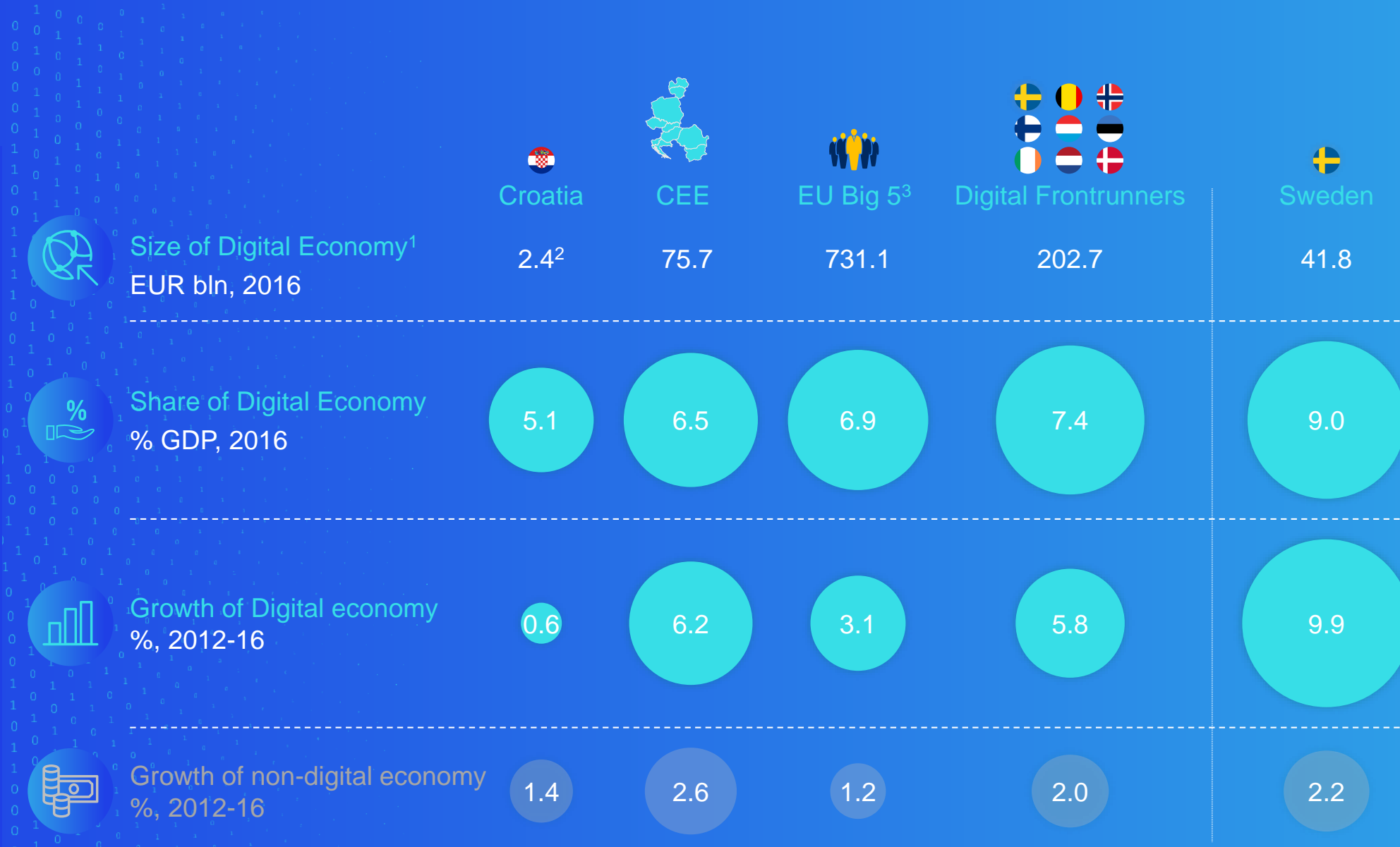
6

2 EUR purchasing power parities in current prices

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

SOURCE: Eurostat; Local institutes of statistics

As traditional growth engines fade away, digital economy is the new growth driver - however, not yet exploited by Croatia



<sup>1</sup> Sum of gross value added for sectors ICT, e-commerce and consumer spending on digital equipment (e.g., computers, smartphones, smartwatches)  
<sup>2</sup> ICT sector size ~ 1.2 EUR bln reported by HUP ICT, due to different methodology for calculating gross value added  
<sup>3</sup> France, Germany, Italy, Spain, UK  
 SOURCE: Eurostat; Euromonitor; Local institutes of statistics; McKinsey Global Institute

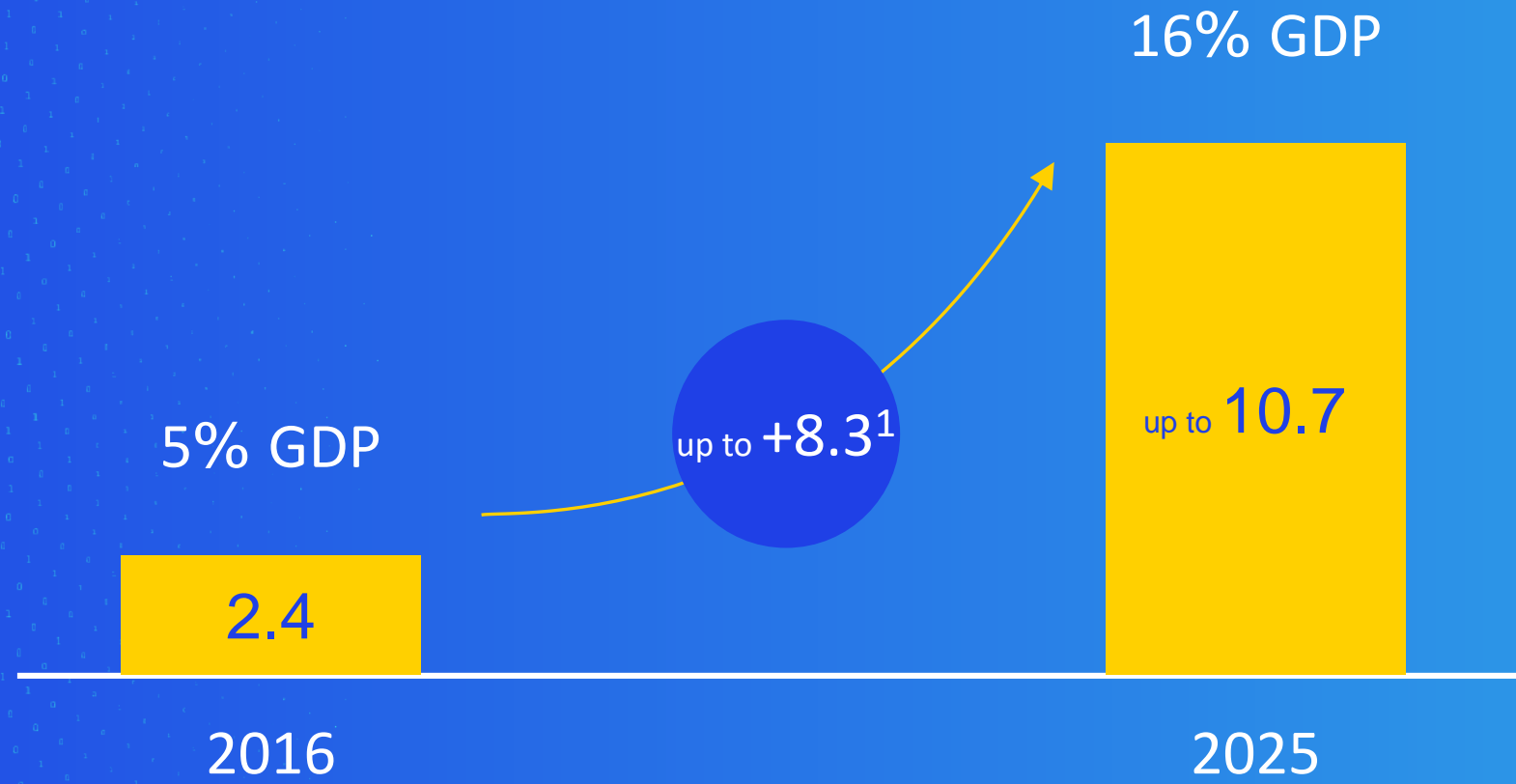




Strong focus  
on digitization  
can generate  
up to 8.3 EUR  
billion of GDP  
in Croatia by  
2025

Digital economy growth potential for Croatia  
“Maximum value extraction scenario”

EUR bln



Digitization with **potential to drive considerable GDP contribution** for Croatia; however, **wider macroeconomic implications** need to be considered and **mitigating actions** to address these implications need to be developed



<sup>1</sup> Assumptions: Fixed annual growth of digital economy from duration 2012-2016 (0.1 EUR bln); Acceleration of e-commerce and consumer offline spending on digital (assumed fixed annual growth of e-commerce from 2012-2016 until 2025 to yield 0.6 EUR bln based on Sweden benchmark); Capturing digitization potential in business and public sector (assumed growth until 2025 to yield 7.6 EUR bln based on Sweden benchmark)

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

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- Potential of Digital Economy
- **Current digitization of Croatian economy**
- Digitization impact on Croatian labor market
- Key drivers of digitization
- Recommendations
- Case for unity

In Croatia,  
most of the  
sectors have  
not yet  
recognized the  
value of  
digital  
economy...

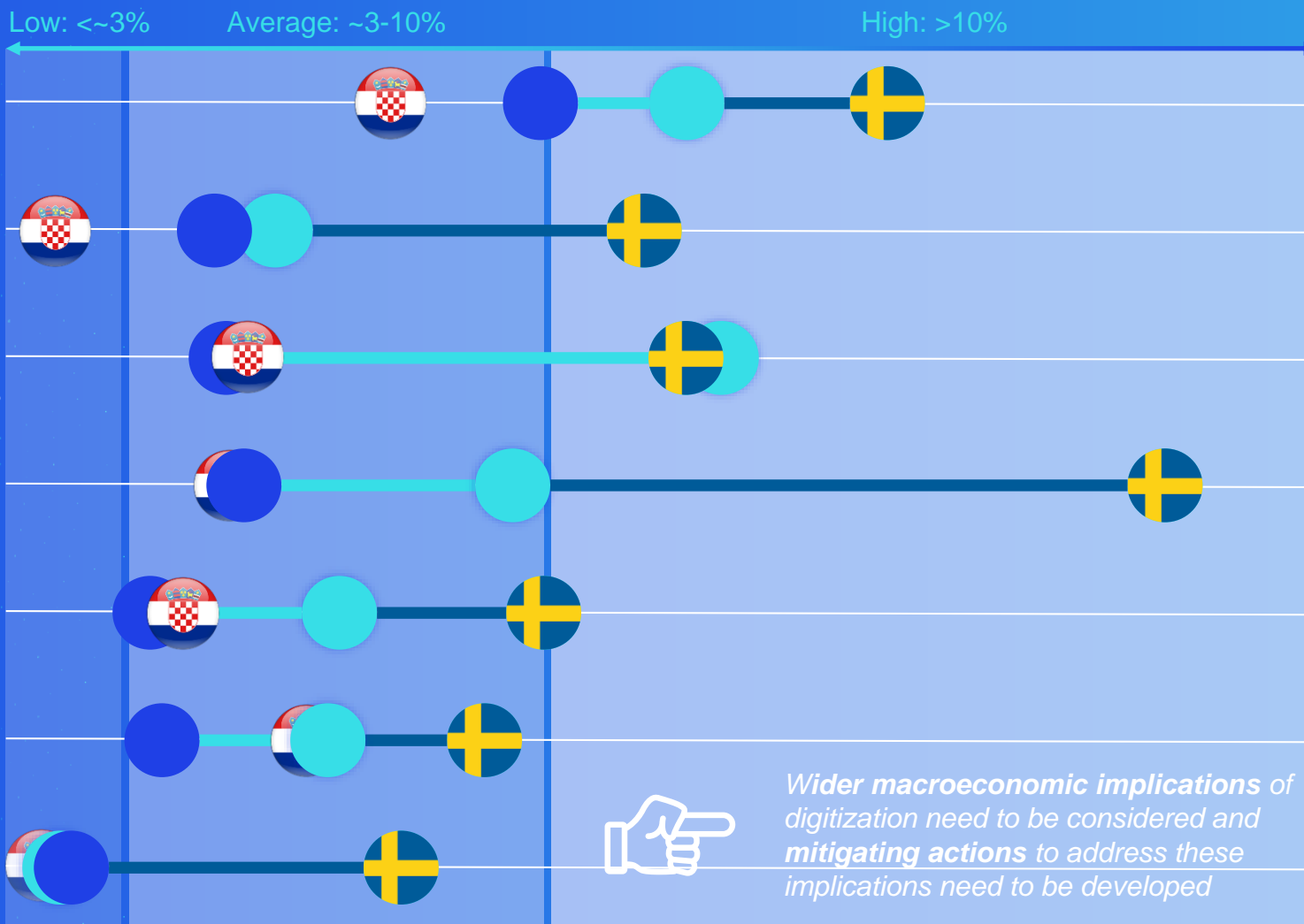
## Digitization of sectors in Croatia with their share in economy



... resulting in significant digitization gaps compared to other EU economies – these gaps will need to be closed to unlock full potential

 Croatia
  CEE
  Sweden as representative of Digital Frontrunners
  EU Big 5<sup>1</sup>

## Digitization level of selected sectors



<sup>1</sup> Italy and Spain excluded due to lack of available data



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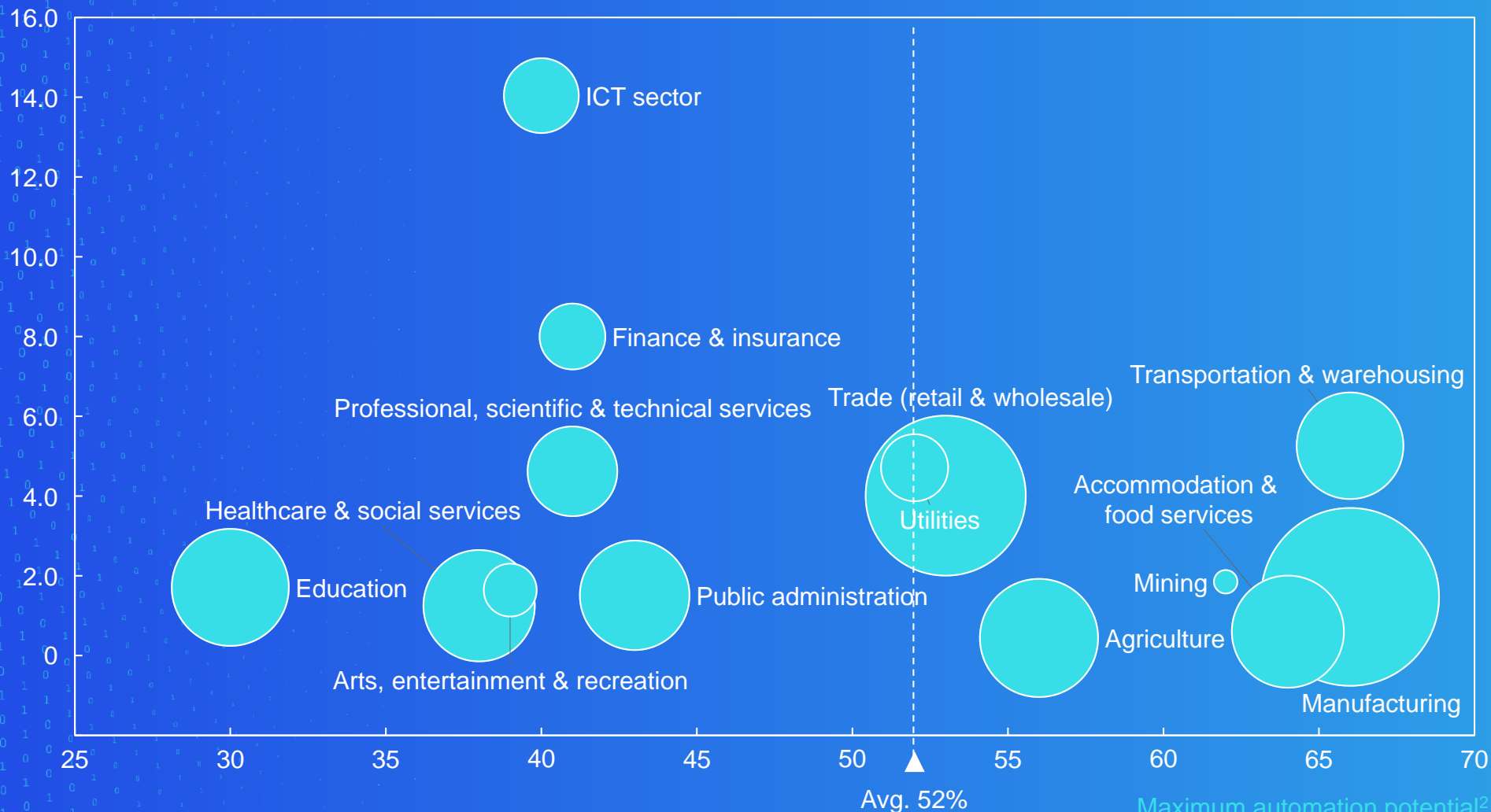
Low digitization across sectors today indicates that substantial automation potential exists in the long-term

Croatia



Digitization index<sup>1</sup>  
% of sector digitization

● Sector size by total workforce



<sup>1</sup> Estimates for sectors made in line with MGI methodology; construction & real estate sectors excluded due to lack of available data

<sup>2</sup> Estimate for sectors made in line with MGI methodology by using Czech Republic, Hungary and Poland data as a proxy

SOURCE: Eurostat; Forbes; IHS; McKinsey Global Institute

Maximum automation potential<sup>2</sup>  
% of working hours



Automation potential in Croatia is estimated to be up to 52% working hours until 2030 – impacting about 800 ths FTEs...

Automation potential<sup>1</sup>



up to **52%**  
of working hours

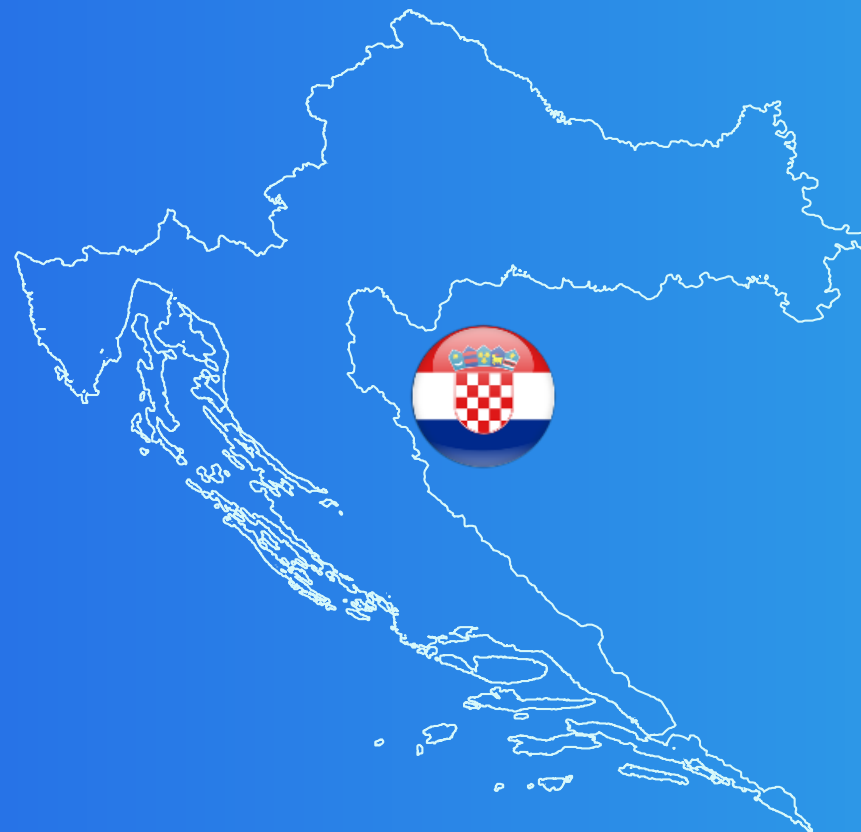


up to **800 ths**  
FTEs



**1 Automation does not directly impact number of jobs**

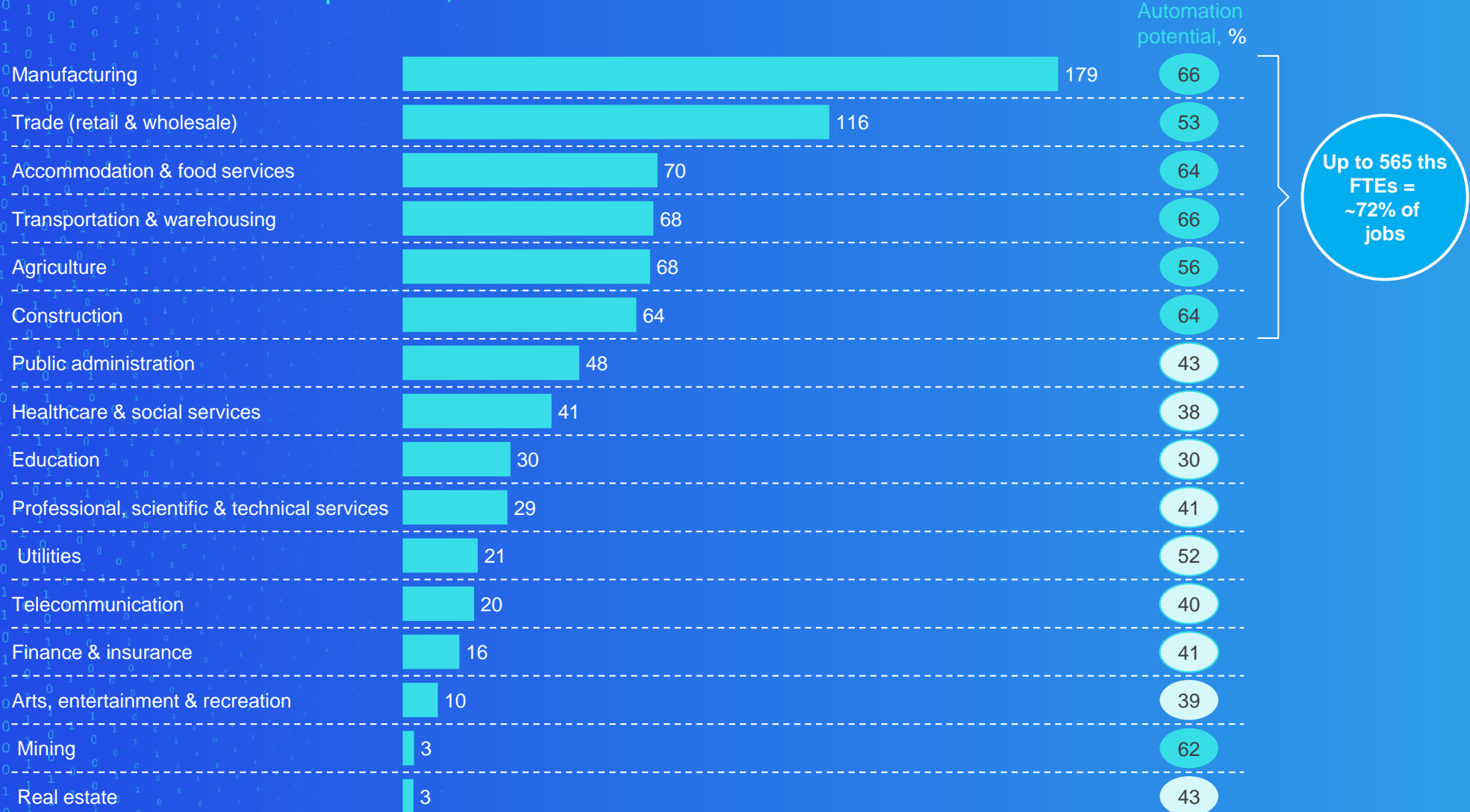
**2 Digitization with potential to drive considerable GDP contribution, competitiveness and net export balance for Croatia; however, wider macroeconomic implications need to be considered and mitigating actions (e.g. shift towards new jobs, enabled by digitalization, with higher productivity) to address these implications need to be developed**



<sup>1</sup> Estimate made in line with MGI methodology by using Czech Republic, Hungary and Poland automation potential data as a proxy

SOURCE: Eurostat; Forbes; IHS; McKinsey Global Institute

## Maximum automation potential, the FTEs



1 SOURCE: Eurostat, McKinsey Global Institute

In the sectors with high job vacancy rates automation could close the gap by lowering the demand for workers

## Job vacancy rate<sup>1</sup>



Adoption of automation technologies might lower the demand for workers in sectors with high automation potential

<sup>1</sup> Job vacancy rate = Number of job vacancies/(number of occupied posts + number of job vacancies)

<sup>2</sup> Estimate made in line with MGI methodology by using Czech Republic, Hungary and Poland data as a proxy

SOURCE: Eurostat

Automation  
will drive  
substantial  
shift in  
required skill  
set towards  
technology  
and social  
skills



Basic cognitive skills



Physical and manual skills



Social and emotional skills



Technology skills

Change in working hours  
2016-2030<sup>1</sup>, %

▼ 17

▼ 16

▲ 22

▲ 52

Direction of  
skill shift

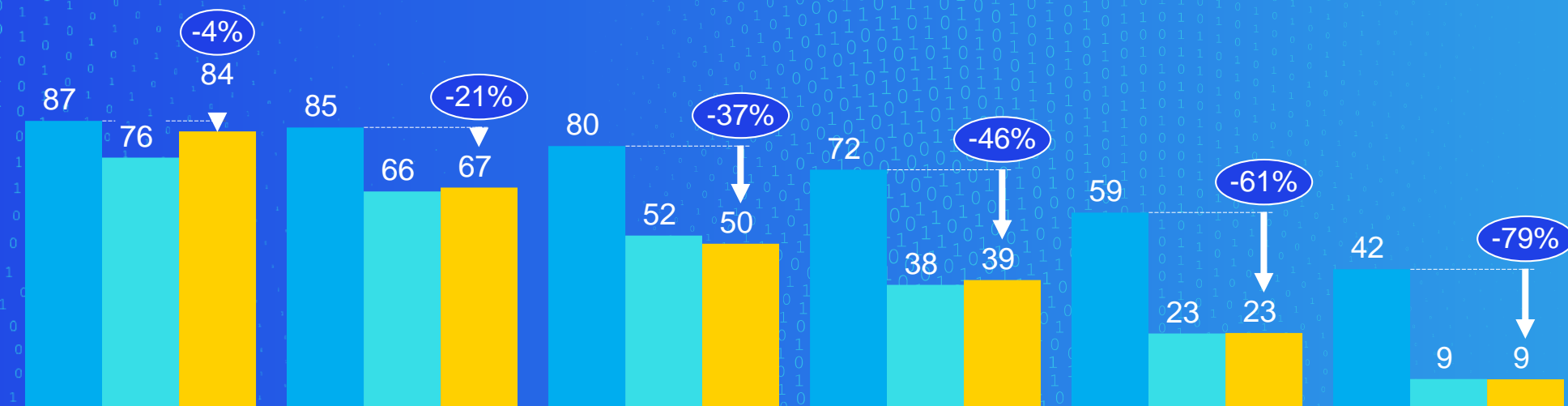
<sup>1</sup> Based on Western Europe estimates

SOURCE: McKinsey Global Institute

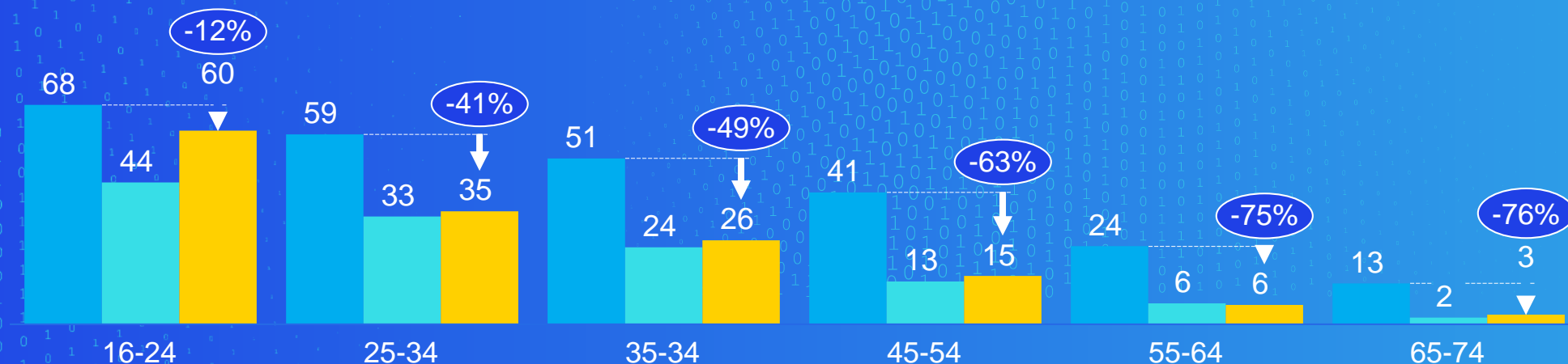
Today,  
Croatian  
workforce is  
already lagging  
behind Digital  
Frontrunners  
in digital skills

## Digital Skills in Croatia vs CEE and digital frontrunners by age group, %

### Basic Digital Skills



### Advanced Digital Skills

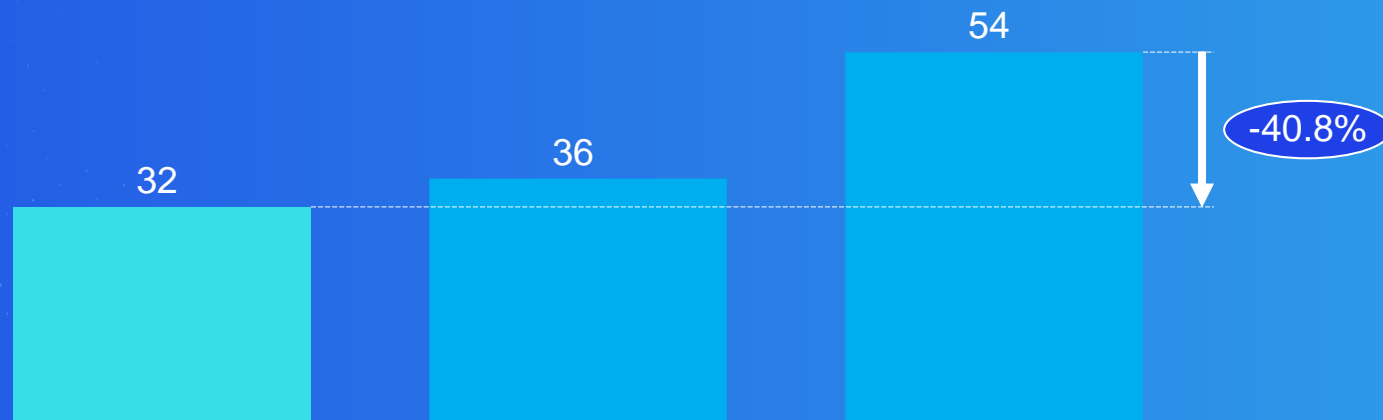


This is partly driven by lack of education and training – companies will need to invest to up-skill their workforce

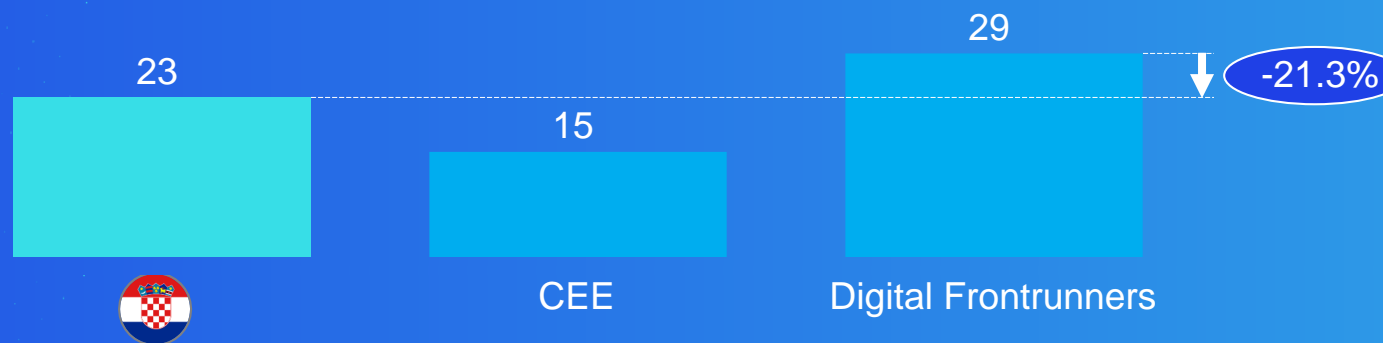


“Enterprises – in particular SMEs – have a significant role to play in helping their employees pick up the skills which will be in demand as their business models adapt to become more digital oriented”

## 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







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Croatia  
should build  
its digitization  
effort on three  
favorable  
factors that  
are already in  
place



### ICT education system

Strong pool of ICT graduates present in the country



### Macroeconomic landscape

Strong competitive advantages at the macroeconomic level, mainly competitive “labor costs” in the ICT sector



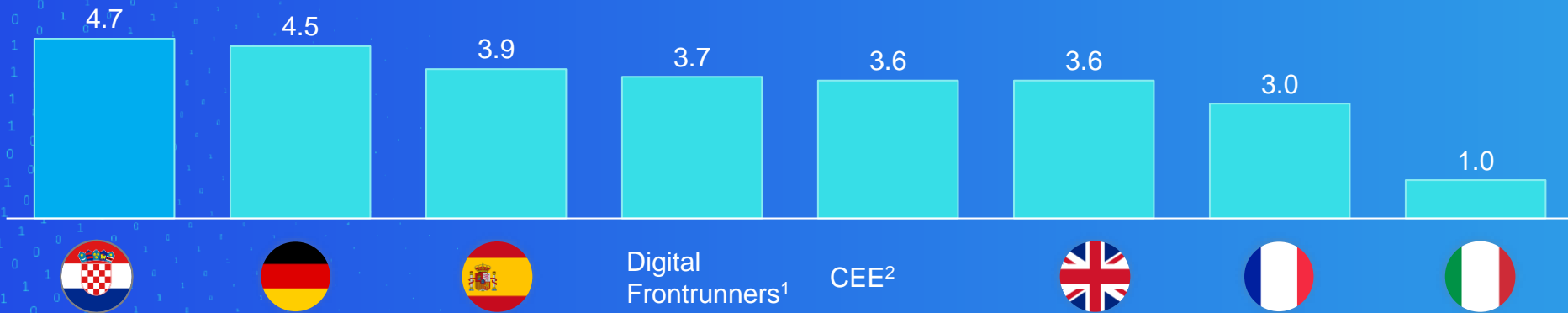
### Local pioneers

Private digitally advanced companies successful worldwide in various industries, as well as “flagship” project in public sector

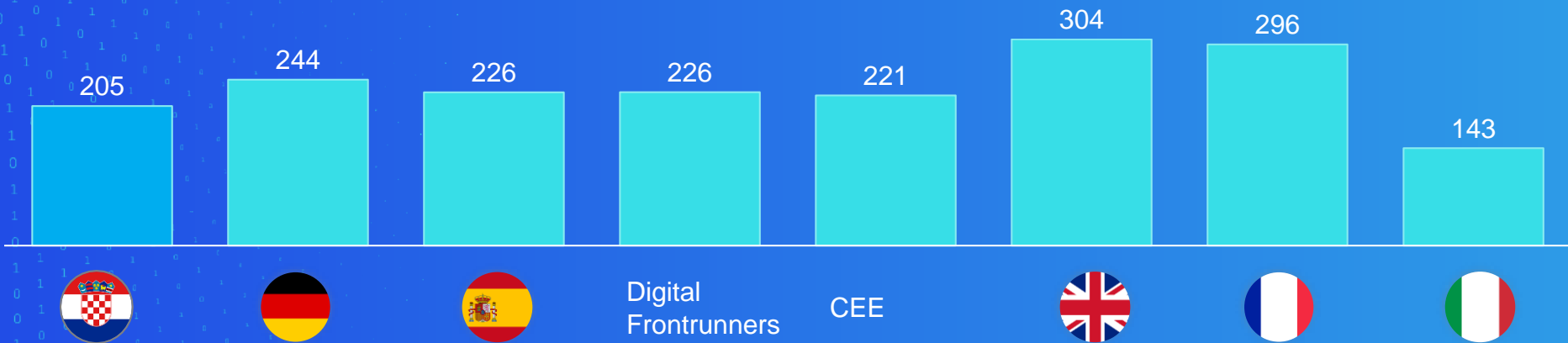


ICT graduates  
in Croatia  
represent high  
share of the  
student  
population –  
above CEE  
and Digital  
Frontrunners

Information and Communication technology graduates, % of all graduates



Number of STEM graduates, per 100,000 inhabitants, 2016



<sup>1</sup> Belgium, Denmark, Estonia, Finland, Netherlands, Ireland, Norway, Luxemburg, Sweden

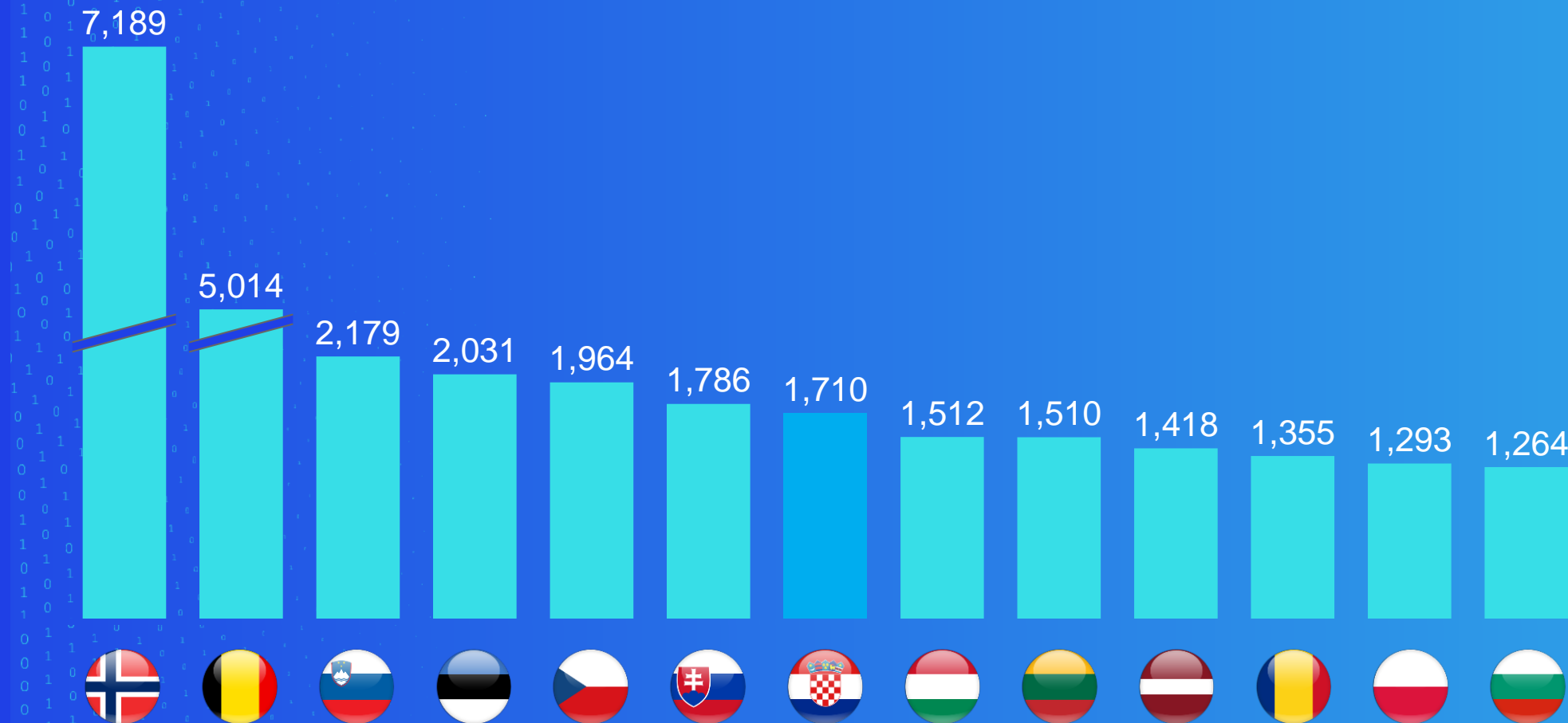
<sup>2</sup> Bulgaria, Croatia, Czech Republic, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia

SOURCE: Eurostat, UNESCO Institute for Statistics



## Monthly average labor cost<sup>1</sup> - ICT industry, EUR, 2016

Labor cost in  
ICT industry  
is lower in  
comparison to  
Digital  
Frontrunners  
as well as  
some CEE  
countries



<sup>1</sup> Total expenditure borne by employers  
SOURCE: Eurostat



Several highly successful and globally recognized digital companies and projects have already emerged

Overview & general info

Awards/ Recognitions

Public

e-Gradani

- Project introduced in 2014 in order to simplify and speed up services offered by Croatian public administration to its citizens
- Number of unique users reached ~630,000 in Nov 2018

- Project e-Citizens has been declared the best project in Europe at the Open Government Partnership global summit, held in Mexico City in Oct 2015

Private

nanobit

- Company founded in 2008 & specialized in developing and delivering mobile games with over 3.5 mln unique active users per month
- In last 5 years revenue increased from EUR 1.7 mln to EUR 7.2 mln (312%)
- Total number of employees increased from 26 to 80+

- Only Croatian company to be included in Financial Times List of 1000 Europe's Fastest Growing Companies in 2017<sup>2</sup>

RIMAC

- Globally known Croatian car manufacturer founded in 2009 that produces electric hypercars, drivetrains and battery systems
- In the last 5 years revenue increased from EUR 0.5 mln of EUR 8 mln (1512%)
- Total number of employees increased from 16 to 400+

- Founder and CEO was awarded the 2017 Ernst & Young Entrepreneur of the Year Award

infobip

- Global IT and telecommunications company founded in 2006 that provides a variety of cloud mobile services for business users (CPaaS<sup>1</sup>)
- In the last 5 years revenue increased from EUR 8 mln to EUR 19 mln (137%)
- Total number of employees increased from 208 to 450+
- ROCCO best rated A2P SMS vendor award in 2017 and 2018
- Digital Shaper of The Year Award by RTL Croatia in 2017

<sup>1</sup> Communication Platform as a Service  
<sup>2</sup> The list referred to the fastest growing companies in 2012-15 period  
SOURCE: Company websites, press search

However,  
additional  
work is  
needed across  
four areas to  
further  
support  
digital growth



### Education system

There is significant lag behind other countries in terms of Math, Reading and Science Literacy (PISA<sup>1</sup> scores) as well as overall education system quality



### ICT infrastructure

Broadband speed and quality rank among worst in Europe



### Digital skills

Slow adoption of digital tools in public and private sectors



### Entrepreneurial environment

Lack of support for innovation and entrepreneurship developments and further ease of running digital business

<sup>1</sup> Program for International Student Assessment (PISA)

SOURCE: Eurostat, OECD





Croatian  
education  
system shows  
substantial  
improvement  
potential  
based on  
actual PISA  
scores



“

One of the things  
that primary  
education should  
tackle is to get  
teenagers  
interested in ICT,  
show them the  
spectrum of  
possibilities and  
benefits from  
career in this field

## Scores in Math, Reading and Science Literacy, PISA (OECD) Synthetic scores<sup>1</sup>, 2015

### Math



### Reading<sup>2</sup>



### Science



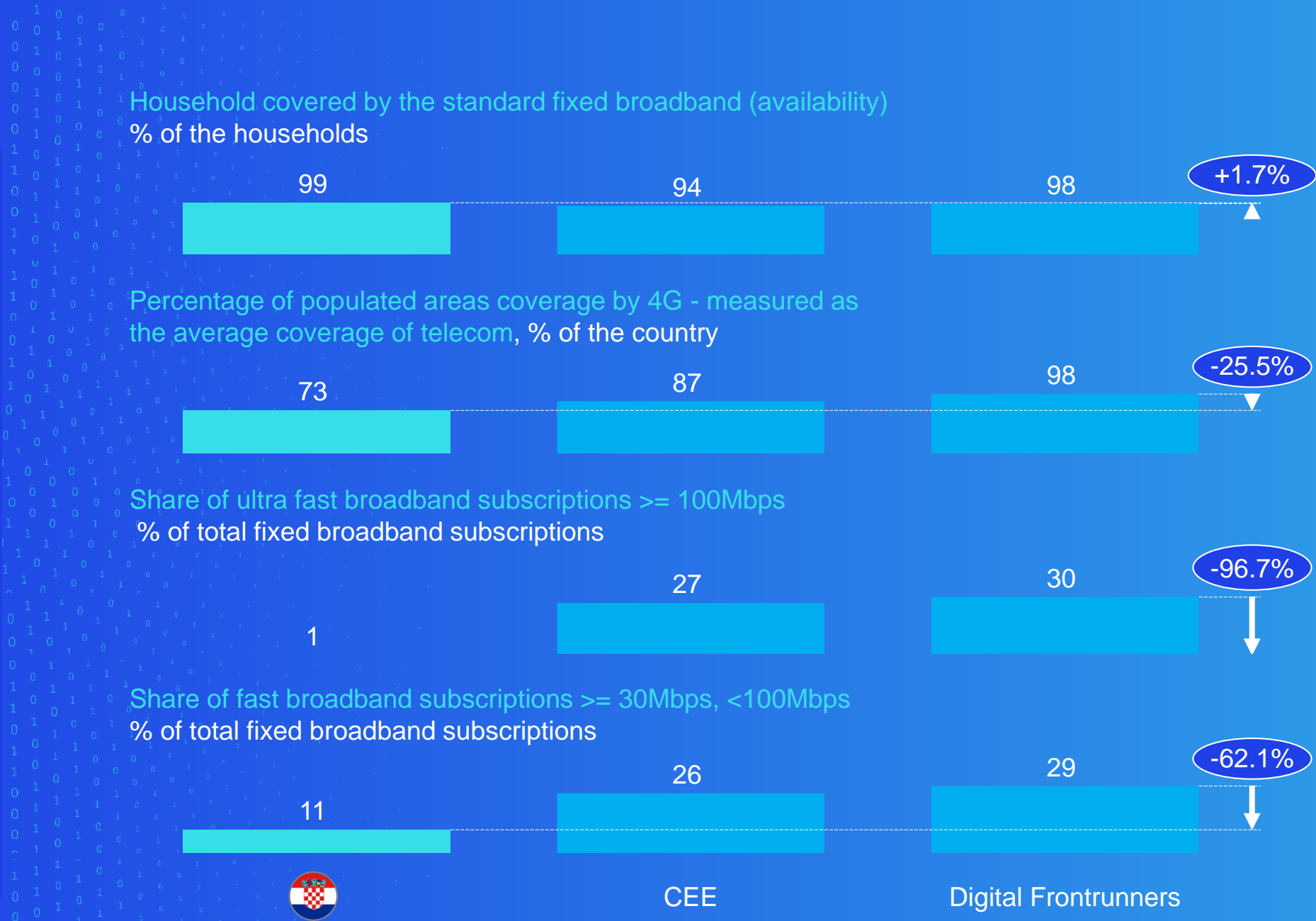
<sup>1</sup> Outliers excluded (Bulgaria and Romania)

<sup>2</sup> Reading literacy includes the ability to extract the relevant information from texts and also to understand, use and reflect on written texts

SOURCE: OECD, PISA, World Bank



There is a significant gap in speed and quality of broadband service compared to CEE and Digital Frontrunners



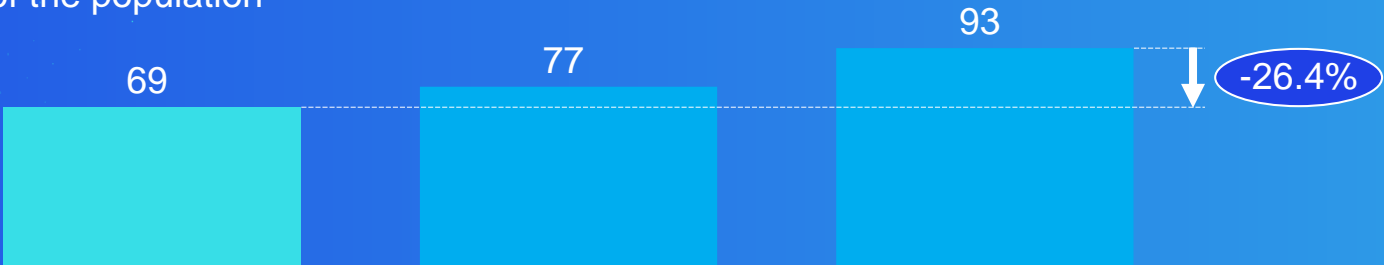


# Croatians are slower in adoption of Internet services compared to peers from CEE and Digital Frontrunners



“The main problem isn't access to the internet but rather how people use it. Very often in CEE people use it to post pictures on social media instead of embracing the whole spectrum of possibilities that connectivity gives us

Individuals using Internet, % of the population



Individuals looking for the information online, % of the population



Individuals who used online banking, % of the population, 2017



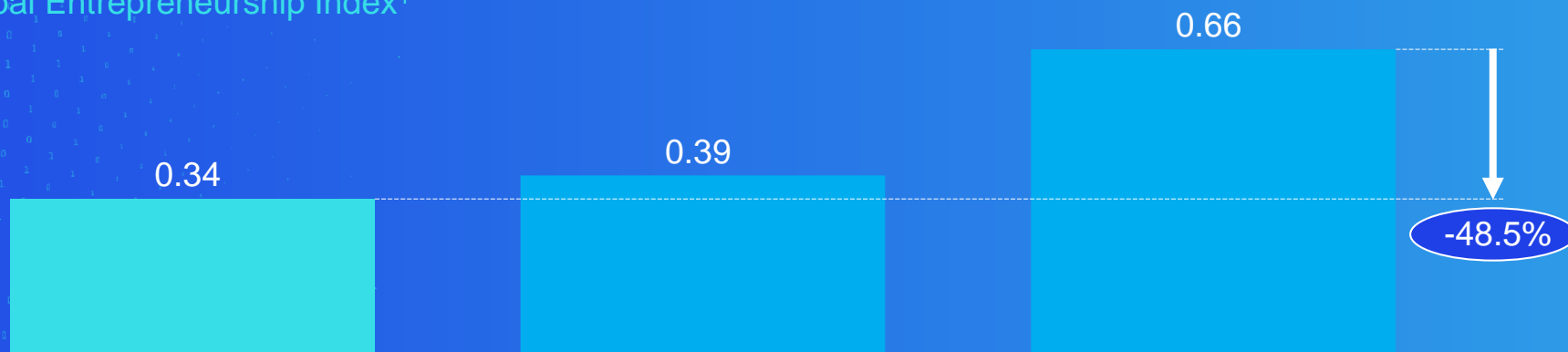
CEE

Digital Frontrunners

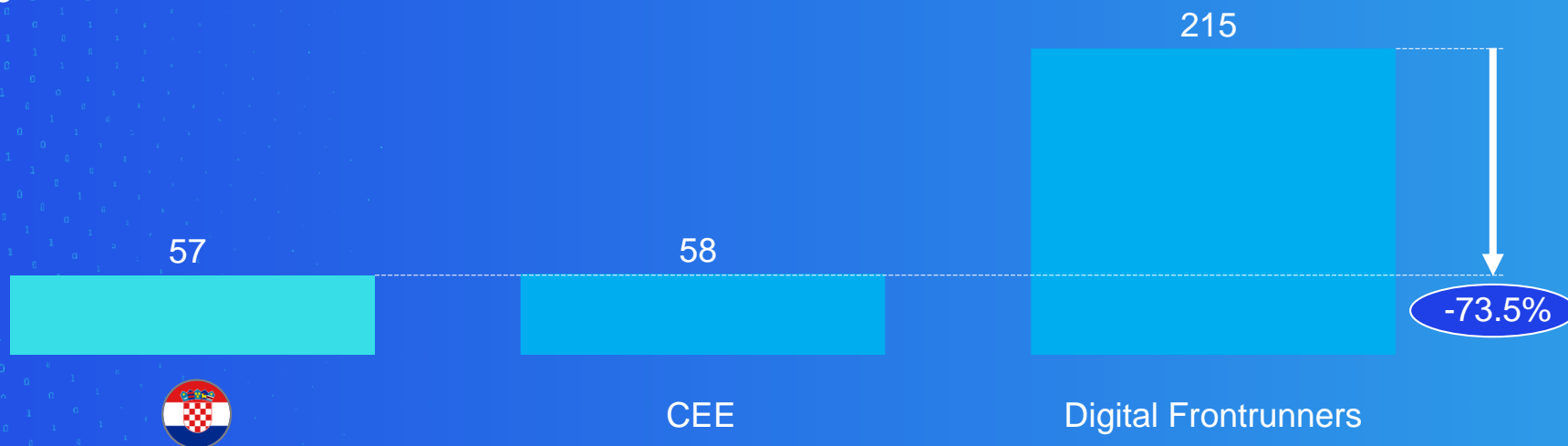


# Entrepreneurial activity in Croatia is lagging behind other EU economies ...

Global Entrepreneurship Index<sup>1</sup>



Number of startups per one million inhabitants<sup>2</sup>  
2018



<sup>1</sup> The GEDI methodology collects data on the entrepreneurial attitudes, abilities and aspirations of the local population and then weights these against the prevailing social and economic 'infrastructure'

<sup>2</sup> Number of startups calculated as an average from Funderbeam and Angellist and Dealroom, data used as a proxy<sup>1</sup>

<sup>1</sup> SOURCE: Eurostat, Invest Europe, Funderbeam, Angellist, Dealroom, Pitchbook



... mainly  
driven by lack  
of structured  
support and  
complexities in  
running  
businesses

## Ease of Doing Business Ranking 2017

51

36

23

-54.2%

## IP Protection laws Synthetic score 1-7 (best) 2017

3.8

4.2

6.0

-36.0%

## Ethics and corruption Synthetic score 1-7 (best) 2017

2.86

3.24

5.65

-49.4%



CEE

Digital Frontrunners

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## 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** by speeding up the development of online public services and its adoption
- 3 Support technology adoption among businesses** by promoting digitization benefits and digital transformation, enabling e-commerce through favorable regulation and incentivizing companies to use digital tools
- 4 Strengthen regional cross-border digital collaboration** by creating a strong digital pillar within regional collaboration platforms and ensuring standardized & flexible digital policy solutions
- 5 Improve startup eco-system** by developing entrepreneurial talent pool and, supporting startup hubs, increasing and simplifying access to capital)

# 10 recommendations to increase digitization in Croatia



## Private sector

- 6 Invest in human capital** by preparing talent strategy for the digital economy, updating approach to recruiting and actively driving re/up-skilling
- 7 Actively adopt technology and innovation** by adapting your business model and leveraging digital tools in revenue and cost management
- 8 Embrace a pro-digital organizational culture** by ensuring role modeling from top leadership and implementing reinforcing mechanisms to reward adoption digital



## Individuals

- 9 Prepare for the digital economy** by investing in life-long learning, especially in competencies that are hard to automate
- 10 Take advantage of digital tools** by leveraging digital platforms and tools in in everyday life



# Implications for Policy Makers (1/4)

## What?

## How?

## Potential actions

Build skillset for the future	Develop a wide-ranging reskilling strategy	<p>Diagnose the state of current workforce and forecast the necessary skillset shift for the future, e.g. develop a labor market model, identify sectoral shifts and understand a gap towards future skill needs</p> <p>Search for relevant solutions and benchmarks e.g. looking at the experiences and best practices of other markets such as Denmark, Canada, Singapore</p> <p>Commit to the program and measure effectiveness of actions e.g. measuring changes in employment rates and salaries; holding educators responsible for the outcomes of reskilling programmes etc.</p>
	Update youth education for the future	<p>Ensure standard digital infrastructure, the integration of digital tools and resources at schools (e.g. online courses, virtual reality, gamification) as well as equipping teachers with necessary skills</p> <p>Update pre-university schools' curriculum for the future, increasing focus on skills such as programming, entrepreneurship and initiative-taking, leadership and managing others, communication skills, etc.</p> <p>Promote STEM specialization to build ICT talent base, focus especially on enabling women to study technology in order to close the gender gap</p> <p>Cooperate with the private sector to create useful education programs and support apprenticeships</p>
	Promote life-long learning and mid-career training	<p>Create an ecosystem supporting adults in re/up-skilling: build motivation among adults for learning, offer practical trainings or incentives, provide support during the transition period and assist in job seeking</p> <p>Support new types of education credentials, especially digital programs</p> <p>Increase the accessibility of education through improvement of English language proficiency to enable access to global knowledge resources</p>
	Actively counteract brain drain	<p>Keep ICT specialists from leaving the country, e.g. by encouraging universities to collaborate with private sector to provide high quality internships as part of their programmes or right after graduation</p> <p>Attract back those ICT specialists who left, across all tenures, e.g. by providing scholarships for young people studying abroad in exchange for commitment to come back and work in the home country</p> <p>Attract additional ICT specialists from across the globe: work with private sector to determine the demand for high skilled workers and simplify the migration process for them</p>
Capture benefits from independent work platforms		<p>Engage in research in order to understand the size and growth of the gig and independent work economy</p> <p>Consider rethinking the policies supporting the gig economy and worker protection initiatives</p>



# Implications for Policy Makers (2/4)

What?

How?

Potential actions

Ensure strong drive behind and support for digitization efforts by government, e.g. by setting up a dedicated task force/ministry, charged with monitoring and tackling regulatory barriers that impede new business models & stimulating the growth of the digital economy

Speed up the development of online public services, e.g. promote integrated online public services platforms and online signatures

Support the adoption of online public services, e.g. by launching educational campaigns, promoting online solutions during offline interactions and decreasing adoption barriers (i.e., offering simple user interfaces)

Develop digital skills amongst public sector employees

Digitize back-end government processes focusing on the most labor intensive and expensive processes first

Unleash big data capabilities through standardizing government data and opening it to third party collaborators to build applications on top of it, e.g. researchers, businesses, startups

Invest in internet of things infrastructure in public sectors, e.g. supporting smart city & human health solutions strongly leveraging public data and resources

Digitize the  
public sector

Support  
technology  
adoption

Support  
technology  
adoption at  
companies

Promote digitization benefits and digital transformation, focusing on SMEs and large sectors far away from the digital frontier

Enable e-commerce through favorable regulation balancing business needs and consumer protection, e.g. by ensuring safe online payments and setting the rules of responsibility for e-commerce platforms providers

Incentivize companies, especially SMEs, to use digital tools, e.g. by making business – government interactions digital by default

Leverage external funding, e.g. from the EU to finance most prospective initiatives supporting the development of the digital economy



# Implications for Policy Makers (3/4)

## What?

## How?

## Potential actions

### Strengthen cross-border digital collabo- ration

Create a strong  
digital pillar within  
regional  
collaboration  
platforms  
(e.g., 3SI, V4, B9)

Establish a coalition in favor of pro-digital legislative measures at the European level, strengthening the voice of individual countries in EU policy discussions

Assemble working groups at relevant levels to develop a pipeline of priority collaboration areas, e.g. representatives from digitization ministries at national level, private sector leaders

Facilitate best-practice & experience sharing in the region on what has worked well in regulatory policy and investments

### Ensure standardized & flexible digital policy solutions across the region

Ensure  
standardized &  
flexible digital  
policy solutions  
across the region

Cooperate to abolish barriers to the full functioning of the Digital Single Market, like geo-blocking, unjustified data localization practices and other regulatory barriers

Support the standardization and free flow of cross-border non-personal data in the public sector, as well as the technological interoperability of digital infrastructures, e.g. 5G networks

Establish common security models and cybersecurity standards

### Implement cross- border projects facilitating the digitization of the region

Implement cross-  
border projects  
facilitating the  
digitization of  
the region

Facilitate cross-border digital infrastructure projects which will close gaps across the region, such as fibre optics, 5G technology, strategic e-commerce logistic centers, complementary energy infrastructures

Establish common platforms for cross-border public sector services, including cross border integration of eID systems, increasing their effectiveness and reducing administrative burdens of enterprises

Strengthen cross-border industrial scientific research and educational cooperation, in support of joint technology initiatives like autonomous transportation, smart city, human health solutions. Examples of cross-border collaboration include the Franco-German alliance in AI, Nordic Council efforts to integrate electronic authentication systems, etc.

### Cooperate in managing societal shifts related to the changes in the labor market

Cooperate in  
managing societal  
shifts related to  
the changes in the  
labor market

Improve cross-border freedom of movement, skills accreditation and worker safeguard procedures

Join forces in tackling talent pool issues, including brain drain, the need for more ICT and digital skills at all educational levels – e.g., initiate a joint promotional effort marketing the region as a digital HUB to attract talent and investments



# Implications for Policy Makers (4/4)

## What?

## How?

## Potential actions

Embed entrepreneurship in formal education (especially in STEM)

Link entrepreneurial education with startups, accelerators, incubators and business angels

Expand entrepreneurial talent pool by attracting talents from outside of the country and region

Improve  
startup  
eco-  
system

Strengthen the  
position of major  
cities as startup  
hubs, tailored to  
local needs

Position startup hubs high on municipal governments agenda and actively communicate importance of startups

Provide physical startup clusters where they can cooperate at scale, e.g. Station F in Paris or Blk 71 in Singapore

Support the creation of testing grounds for new business models, e.g. by implementing regulatory sandboxes enabling entrepreneurs to trial their innovations against real market conditions

Increase access  
to capital

Simplify business angel investing, e.g. standardized and easily-available forms, low capital corporations

Provide additional incentives, e.g. tax breaks, for business angels and serial entrepreneurs

Simplify procedures of obtaining and reporting public funds/EU funds





# Implications for business

## What?

## How?

## Potential actions

Invest in human capital	Prepare your talent strategy for the digital economy	<p>Diagnose current skills of employees and identify gaps towards future needs by analyzing HR data</p> <p>Search relevant solutions and benchmarks</p> <p>Commit to the program and measure effectiveness of actions, e.g. ROI based on promotions, retention or new business as a result of training, gather and integrate employees' feedback</p>
	Future employees: update approach to recruiting	<p>Put more focus on candidate's skills assessment, e.g. through open competitions, games &amp; hackathons</p> <p>Develop a talent pipeline to shift from reactive to proactive recruiting, e.g. offer workshops and apprenticeships to help candidates build desired skills</p>
	Current employees: actively drive re/up-skilling	<p>Build reskilling motivation among employees through career planning and professional development guidance</p> <p>Enable reskilling opportunities: provide practical in-house training or offer financial support, create opportunities for formal and informal knowledge sharing</p>
	<p>Leverage contractors or freelancers to fill talent gaps, using digital platforms to optimize the search effort</p> <p>Form strong digital collaboration pillars within trade associations, in particular focused around SMEs</p>	
Actively adopt technology and innovation	Adapt your business model to meet the demands of the digital economy	<p>Anticipate and if needed prepare for digital disruption of the demand for your product, e.g. by unbundling and tailoring your product or turning it into a service</p> <p>Anticipate and if needed prepare for how digital disruption will change the supply on your market: analyze the possibility of new, online players and anticipate changes in the value chain structure caused by the automation</p>
	Leverage digital tools in revenue and cost management – especially for SMEs	<p>Use internet to increase your revenue growth capabilities by utilizing e-commerce, e.g. building an online presence for your organization, developing your own or making use of aggregated e-commerce platforms</p> <p>Digitize internal operations, e.g. by implementing resource management software tools, focusing on the most labor intensive and expensive processes first</p> <p>Build cybersecurity capabilities to ensure competitive dynamics and customers' trust</p>
Embrace a pro-digital organizational culture		<p>Start the change from the top – ensure role modeling among leadership and middle management in terms of using digital tools</p> <p>Foster understanding and conviction among employees on the benefits of digital</p> <p>Support employees in developing their skills &amp; knowledge, e.g. encouraging employees members to cultivate their curiosity to create opportunities in combining emerging technologies with innovative services</p> <p>Implement reinforcement mechanism, e.g. rewarding employees pioneering the adoption of digital</p> <p>Prioritize agility and learning over forecasting and planning</p>



# Implications for individuals

## What?

Prepare for the digital economy and take advantage of digital tools in all aspects of your life

## How?

Invest in life-long learning

Seize the opportunities of work in the digital economy

Use digital in everyday life

## Potential actions

Continuously **update your digital skills** and actively seek to learn how to work with new technologies

Invest in **competencies that are hard to automate**, e.g. focus on development of social and emotional skills, team work, creativity

Use digital tools and resources to **get access to global knowledge**

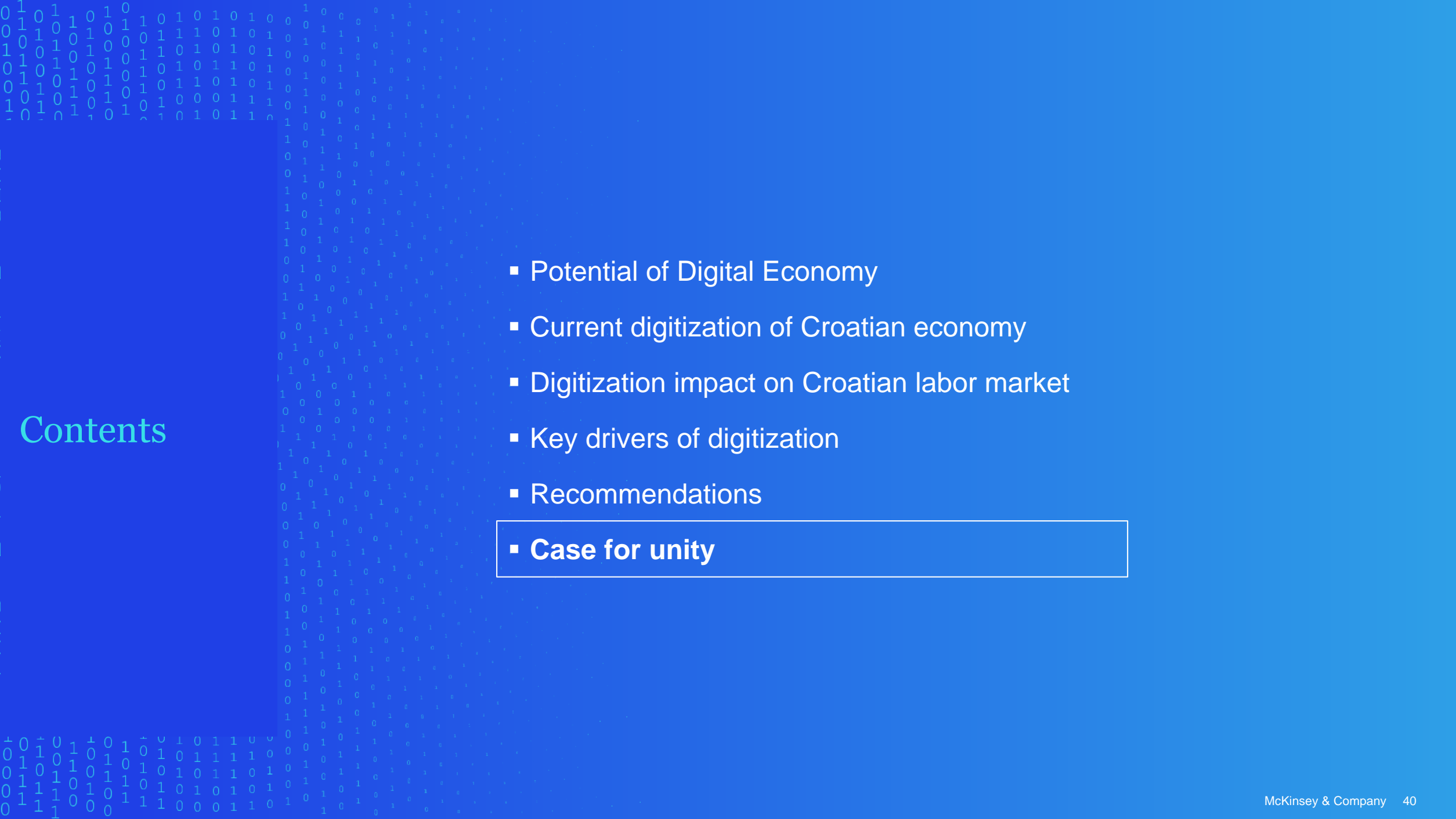
Be ready to take **several job opportunities by having to change sectors and occupations**

**Leverage digital platforms to find freelance jobs, sell goods, gain additional sources of income**, e.g. creators tapping into global audiences for their content using online video streaming platforms

Take advantage of falling entry barriers and access to capital **to become an entrepreneur**

**Build a personal presence online**, e.g. utilizing professional networking and recruitment platforms, personal websites to market your own brand

**Use digital tools and resources to benefit from the digital economy in everyday life**, e.g. take advantage of platforms maximizing consumer value (e.g. price comparison websites)



# Contents

- Potential of Digital Economy
- Current digitization of Croatian economy
- Digitization impact on Croatian labor market
- Key drivers of digitization
- Recommendations
- **Case for unity**

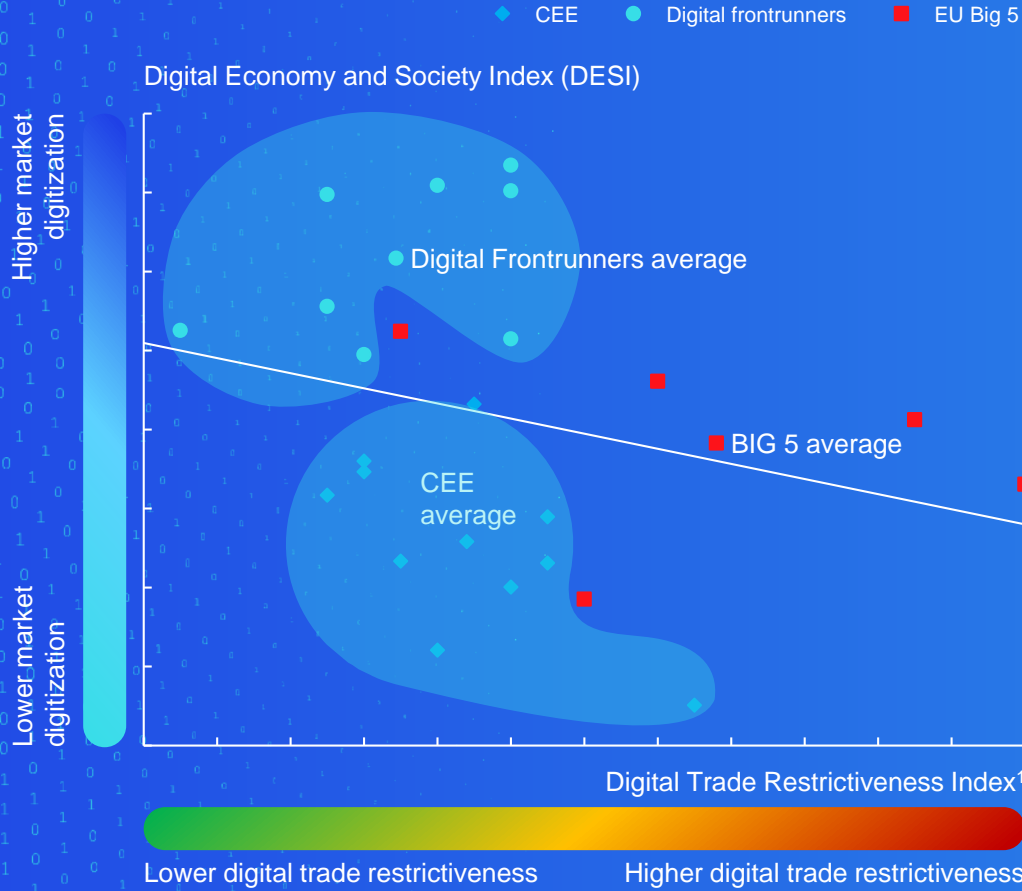




CEE countries need to create ICT-favorable regulatory environment to support digitization ...

CEE markets, similarly to Digital Frontrunner, are not restrictive in terms of digital trade ...

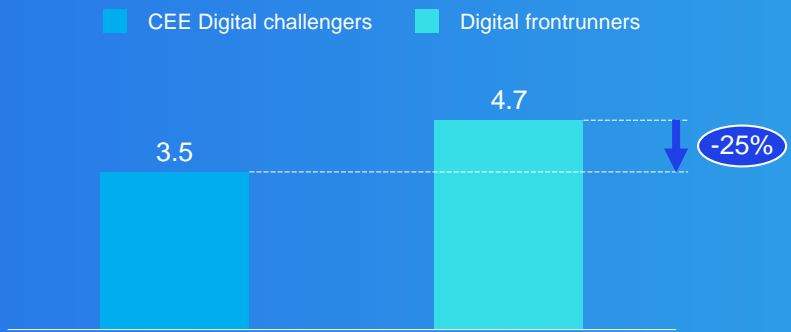
Market digitization compared to digital trade restrictiveness



... however CEE exhibit a less ICT-favorable regulatory environment

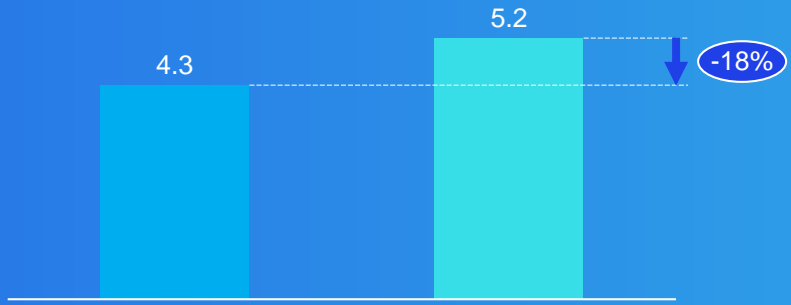
Importance of ICTs to government vision

Synthetic score (out of 7), World Economic Forum



Laws relating to ICTs

Synthetic score (out of 7), World Economic Forum

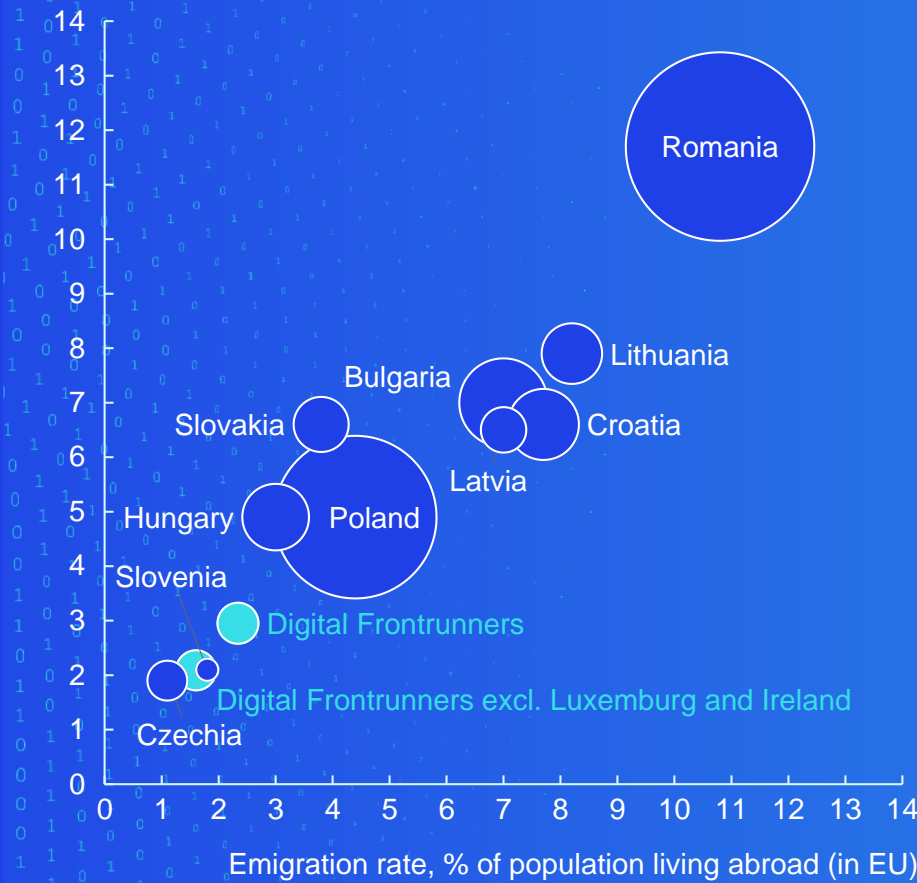


<sup>1</sup> The Digital Trade Restrictiveness Index cover 64 economies worldwide, and is based on a comprehensive database entirely dedicated to digital trade policy. It includes several KPIs around four broad clusters: A) Fiscal restrictions: Tariffs and trade defense, taxation and subsidies, public procurement; B) Establishment restrictions: Foreign investment, IPR, competition policy, business mobility; C) Restrictions on data: Data policies, intermediary liability, content access; D) Trading restrictions: Quantitative trade restrictions, standards, online sales and transactions

... and prevent further “brain drain” that is currently observed across all the CEE countries

Emigration is particularly visible among the highly skilled population...

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



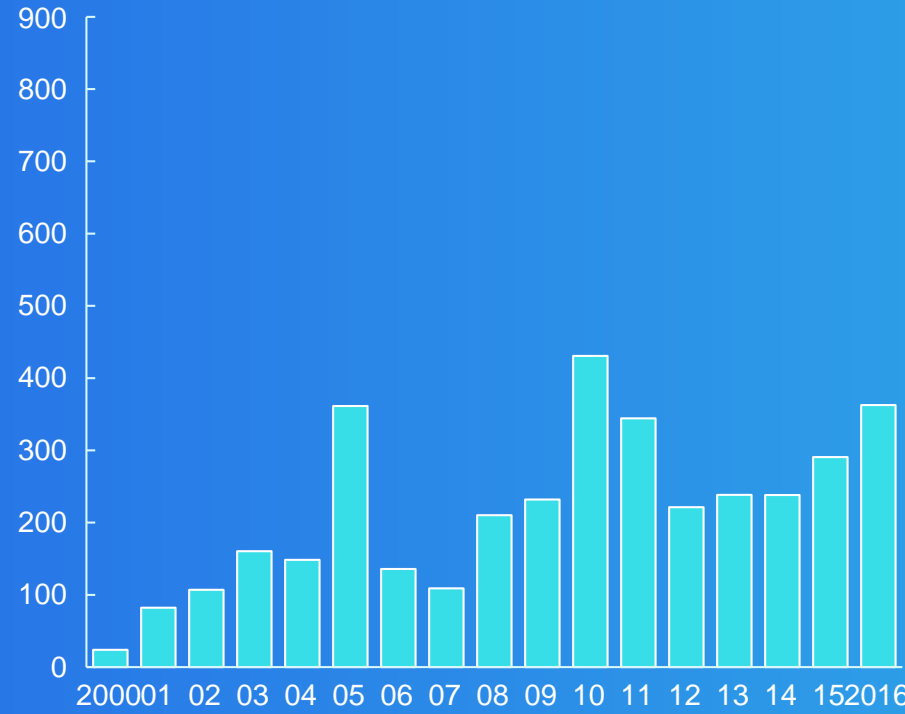
1 Migration rates includes only citizens of the reporting country. For Croatia, Bulgaria, Romania, Latvia and Slovakia some of the values are missing. In those years migration rates are calculated as average rate for the rest of CEE region

SOURCE: Eurostat, the average for CEE is weighted for population, OECD, LinkedIn research



... and the trend of emigration is not reversing

CEE emigration size<sup>1</sup>  
'000 citizens



Different emigration trends can be observed in CEE countries with some countries showing decline in net migration (e.g. Czechia, Hungary, Romania), while others observe increase of migration size (e.g. Bulgaria or Poland)

# Croatia – Emerging Digital Challenger

Digitization as the new growth engine for Croatia



November, 2018

McKinsey&Company