



THE ADECCO GROUP

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4th Industrial Revolution in Central and Eastern Europe

Innovation and Advantage drive success.

Using creativity and analysis-driven writing to convey business acumen and the pursuit of success, 'Inovantage' is a quarterly that discusses employment, education and economy in CEE.

Editor's Note

Dear Readers,

We are happy to introduce to you our quarterly trends report focused on Central and Eastern Europe that you can now expect to guide you 3-4 times every year! Here we attempt to demystify certain myths and use valid data and thought leader analysis to answer important question regarding employment, education and the economy.

When we wanted to name this report we struggled to find something that suggested creativity and analysis-driven writing, also conveying business acumen and the pursuit of success. Though Inovantage primarily touches on the themes of employment, education and economy we didn't want the quarterly to be limited to that. If something in the future suggests that we need to cover themes beyond the mentioned space, we are more than open to it, as the world of work as we know it is constantly evolving.

So we chose our two primary inspirations: Innovation and Advantage which drives success. Hope you enjoy reading the quarterly as much as we enjoyed creating it.

In the time of the hotly debated topic of the future of work, we have chosen to analyze how skills shape the future of Central and Eastern Europe in a time of uncertainty. With everyone rushing in to talk about automation and human augmentation, we need to clarify some hard truths about these disruptions.

Automation needs to stop being viewed as a dichotomy of utopia or dystopia – Will jobs be lost? Yes. Will jobs be created? Yes. So the appropriate reaction? Evolve and Augment your talent.

The accelerating pace of technological, demographic and socio-economic disruption is transforming industries and business models, shortens the shelf-life of employees' existing skill sets in the process. The workforce now needs to re-skill ever 5 years not every 20-25 years according to the World Economic Forum and we stand by that.



Sandhya Sabapathy

Hiring a team of data scientists or the next trendiest new job title isn't just the answer. Understand the importance of upskilling your entire workforce - Using AI and technology driven by these new jobs to augment the current workforce's skills has a value that is insurmountable.

Organizations need a diverse workforce with a 'probability mindset' - this defines the future of management. Managers will be focused on managing complexity, juggling and multi-tasking tech with effective empathetic human interaction.

Why skills? In a region where unemployment is low and growth is rapid, we find CEE lacking in specialists and facing deep scarcities in its biggest investment supported industries. Our 3 picks surround some of the fastest growing industries in EE & CEE: ICT skills are the deepest scarcity with steep industry growth rate, Automobile is the fastest growing industry and Engineering skills are the most critical for the foundation for CEE's infrastructure growth.

We hope to use this quarterly to educate, empower and shed light on some important issues that TAG hopes to have your support in addressing.

Yours Sincerely,

Manlio Ciralli & Sandhya Sabapathy

Branding & Innovation Department
(Italy, Central and Eastern Europe, Middle East and North Africa)



Manlio Ciralli

Preface

The natural transition of an industrial revolution cannot be fought. Instead of shying away from modern disruptions, we must be open to understand the shifting of tides. Instill the importance of digital intelligence, continuous upskilling and reskilling of our current workforce. Analysis driven-education on what lies ahead and proper preparation & acceptance of a future of continuous learning are great areas to take some critical steps – invest in the future.



Sergio Picarelli

Central and Eastern Europe is in the center of this tech-hub surge in Europe. For the last five years WEF states the region registered an impressive growth in Information Communication Technology (ICT) as a share of its GDP (in Bulgaria, for instance, it rose from 1.3% in 2012 to 3.3% in 2016) and is a leader in the automobile industry.

Employers in the CEE need to work on modernizing the working environment, implementing continuous learning and development programs, improving compensations and benefits programs, implementing the new flexible ways of working (mobile and remote working), working with educational studies and sometimes relocating their operations closer to available talent pools to help prevent the brain drain in this fast-evolving space.

CEE is facing an interesting challenge of focusing on becoming more ‘loyal’ employers and fostering a sense of trust thereby increasing cohesion in society. CEE needs to work of creating a hospitable environment to growth digital talent which is perhaps more vital than anything else to sustain and increase the growth of industries in the region.

Labour markets around the world continuously demonstrate various types of ‘mismatch’, including mismatch between the number of job seekers and employment opportunities, which is reflected in unemployment.

But more importantly from a simpler perspective – Are companies looking for skills in the local market that aren’t there? Why does CEE seem to need to import experts? Are youth training and investing in education that will not guarantee them a job? Read on to find out.

Adecco Group’s Recommendation for skill development in the CEE is focused on growth, employability and education:

- Work-based training, such as apprenticeships, make sure that the education “output” matches the need of businesses, while also giving young people a valuable first experience to the realities of the world of work.
- Lifelong learning is indispensable in times of rapid technological, economic and demographic change.
- Work mobility is an important tool for businesses to find the talent they need despite shortages on the local labour market.
- Diversity has become a key component for companies to succeed, encompassing strategies that cater for a diverse workforce (by gender, age, geographical/cultural origins), as well as diversity in labour contracts and forms of work.

Success will not be possible without deeper, accountable cooperation between employers and educational institutions. In this context, it is particularly important to create new platforms for cooperation between universities and business, and to recognise the benefits of such exchanges for all actors involved.

We hope to start such conversations with some esteemed professors from top CEE schools being partners in this project with us. We are always available for more enquiries on this important topic of Skills and hope to be in touch with all of this report’s readers for their feedback, questions and continued support.

Sergio Picarelli

Executive Board Member, Adecco Group
CEO of Italy, Central and Eastern Europe, Middle East & North Africa
Global Head of Permanent Placement and Lee Hecht Harrison



Angelo Lo Vecchio

Angelo Lo Vecchio

Head of Middle East & North Africa Eastern Europe,
Middle East & North Africa



THE ADECCO GROUP

A taste of things to come:

skills of the future

In the age of disruption and agile market changes, the ultimate currency in the new industrial revolution: **Talent**. But what exactly do we mean by talent? What are the main skills talent needs to have and why are these skills so attractive? With the spotlight on Central and Eastern Europe, TAG attempts to find out.

The Power loom was invented in 1810, but it took 35 years for its usage to transform the textile industry: Experts observed that textiles didn't attract **engineers** who had the skills to man these machines and a veritable invention collected dust for almost half a century.

Mendel's law of genetics – a fundamental in biology, discovered by a young Austrian religious friar, Gregor Mendel, took a 100 years to be recognized as pillar in genetics: Experts say it was because of a lack of creative thinking amongst scientists. Is the next big market disruption already out there? Do policy-makers, educational institutions and enterprises have the right people to understand and nurture it?

The 4th Industrial revolution

An estimated one in two jobs today risk being replaced by machines, according to The Adecco Group's Global Talent Competitiveness Index 2016 with INSEAD.

Automation, which will be further explored in Chapter 2, needs to stop being viewed as a dichotomy of utopia or dystopia – Will jobs be lost? Yes. Will jobs be created? Yes. So, the appropriate reaction?

“AUGMENT NOT REPLACE. TALENT IS THE NEW CURRENCY.”

The natural transition of an industrial revolution cannot be fought. Instead of shying away from modern disruptions, we must be open to understand the shifting of tides. Instill the importance of digital intelligence, continuous upskilling and reskilling of our current workforce. Analysis driven-education on what lies ahead and proper preparation & acceptance of a future of continuous learning are great areas to take some critical steps – invest in the future.

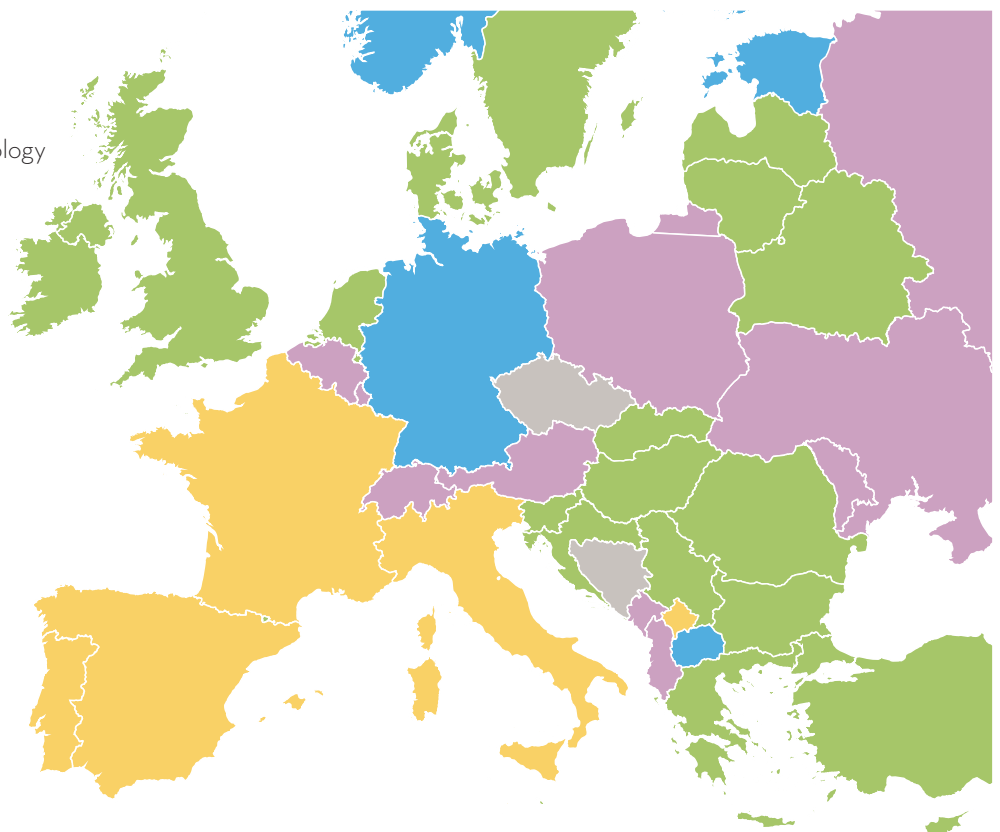
With tech-hubs, like San Francisco attracting massive global funds and some of the best talent, Technology and Digital is emerging as one of the foremost industries of this day and age. The hunt for the new 'Silicon Valley' is an engaging theme with mass speculation. But this may not very well be the case as the need for a hub-based, centralized, melting-pot of talent is decreasing with the rapid rise of the gig economy and freelancers.

International mobility is the talk of the decade with millennials refusing to stay in a city for long, spurring the need for strong cross-location interaction and the emergence of a much smaller hyper-connected world.

Eastern Europe is in the center of this tech-hub surge in Europe. For the last five years, WEF states the region registered an impressive growth in Information Communication Technology (ICT) as a share of its GDP (in Bulgaria, for instance, it rose from 1.3% in 2012 to 3.3% in 2016).

- Creative and multimedia
- Clerical and data entry
- Sales and marketing support
- Software development and technology
- Writing and translation
- Professional services
- Not enough data

Online Labour Index
top occupation by country
(Europe), 1-6 July 2017

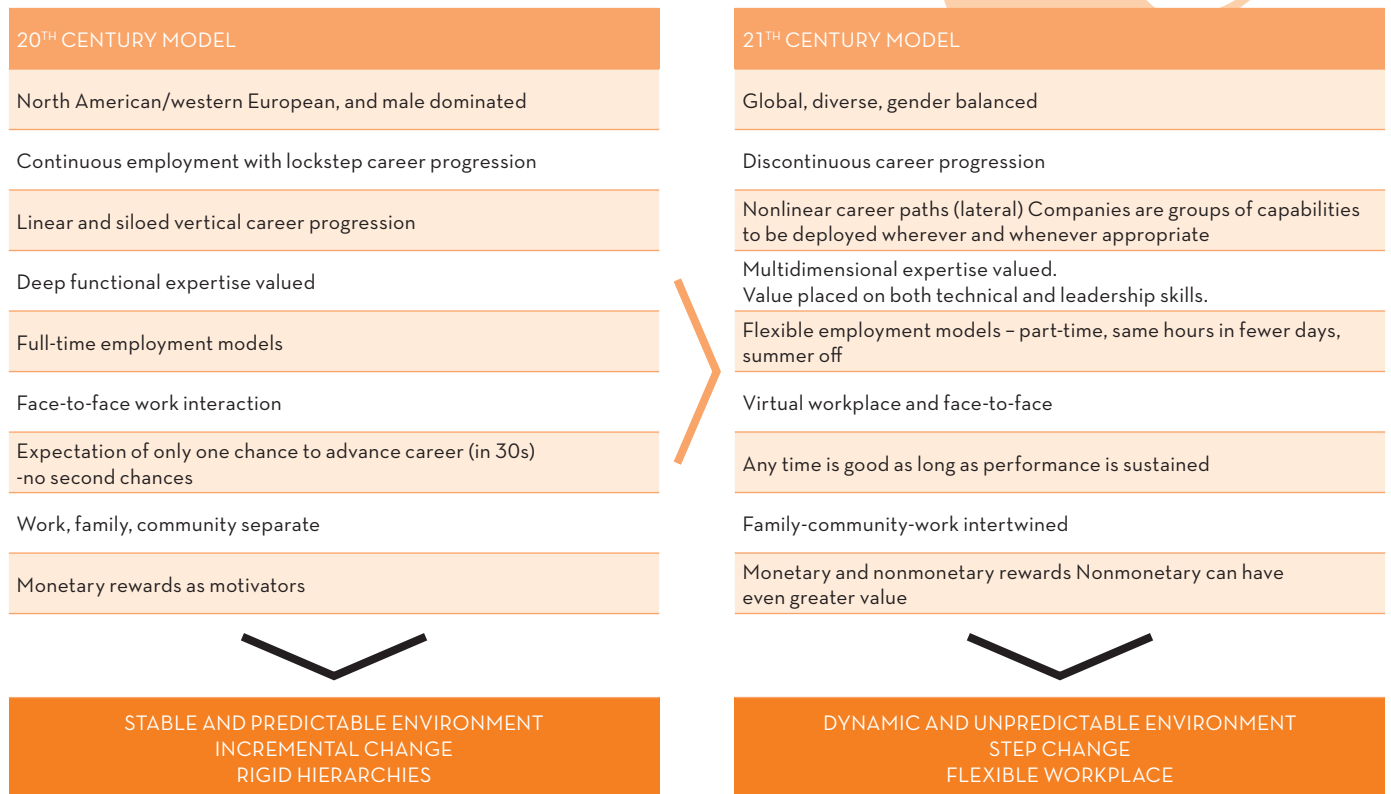


Many of CEE's top cities like Prague and Budapest (profiled in Chapter 3), are on the forefront of digital change. But **62% of CEOs in CEE** find it “very” or “somewhat” difficult to recruit for digital talent, compared to 50% globally.³ How do we chronicle this change?

The Talent Model Shift

Talent models have evolved over the past decade, accelerated in the economic downturn - companies no longer have the luxury of adhering to status quo talent strategies. In fact, to attract, engage, develop, and retain the right talent, companies need to rethink their talent models. Too many remain mired in ineffective practices that reflect 20th-century assumptions about how, where, and by whom work gets done. The old model no longer works for many high performers, nor does it meet the needs of a large majority of the current workforce. Companies are wasting resources-both human and financial-by perpetuating HR programs that are out of step with the way work is conducted.

Understanding differentiated capabilities: Do companies have the skills, knowledge, and abilities required for competitive advantage? Accelerated Performance: Do current Talent processes and programs improve workforce performance and drive meritocratic decision making?⁵ Leadership Development: Are companies run by the right leaders, and do companies have effective leadership building capabilities? Talent Culture: Does work place environment maximize the contribution?



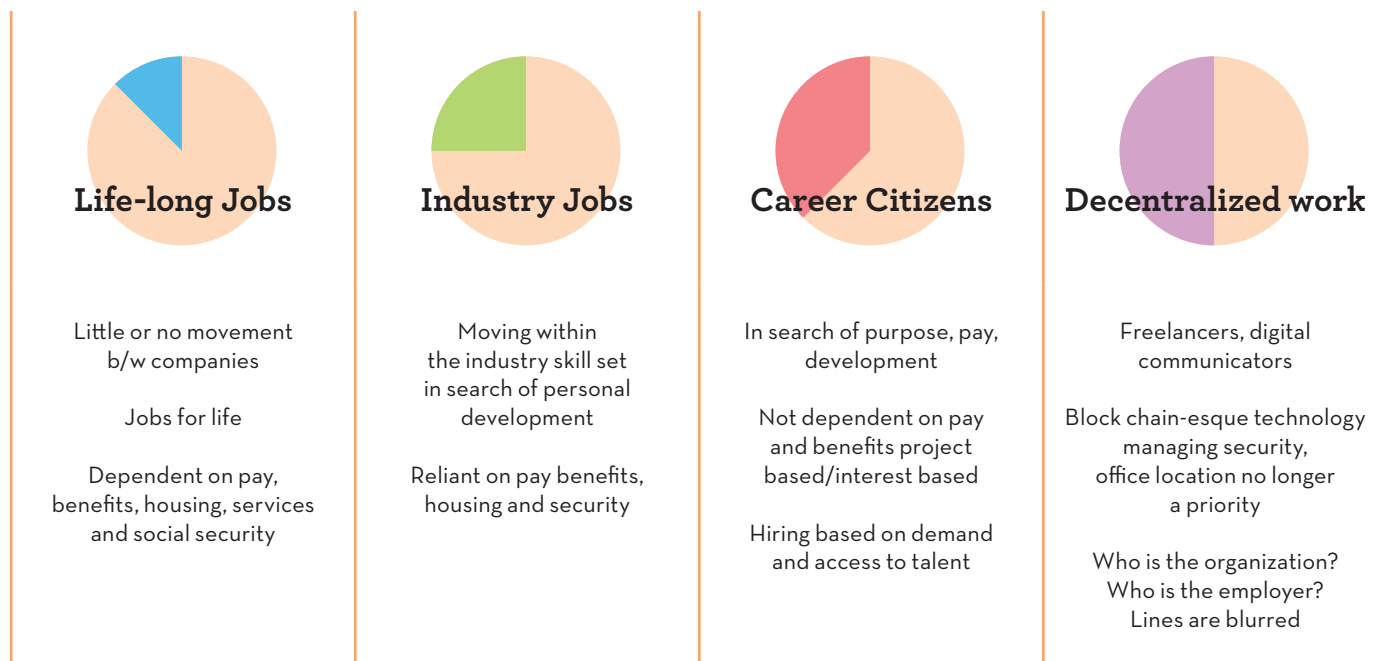
CEE is facing an interesting challenge of focusing on becoming more 'loyal' employers and fostering a sense of trust thereby increasing cohesion in society. 69% of CEOs in CEE report that they're making efforts to measure trust between their workforce and their organization's senior leadership, close to the global rate of 71%.

Anna Wicha, Country manager, Adecco Poland points out that the war for talent is in full-swing, and which competences are the most valuable thing about it - is constantly changing. That is why it is crucial for employees and candidates to implement the "longlife learning" principles. Technology, and consequently also business and our everyday lives, change too fast for once acquired knowledge to last for the rest of life.

In this context, what is the role of companies and HR departments? First of all, it is massively growing. I see an increasing need to approach HR as a broad process, including communication - building bridges between employer and candidate. At the same time, HR's task is increasingly to develop talents, and build competences in organizations to prevent their possible deficits in the future.



Evolution of Employer – Employee Relationship



Skill Evolution

Looking at employment structure by occupation provides a straightforward measure of the skill content of labor demand. In most CEE countries, employment has shifted away from less skilled occupations towards more skilled occupations. In particular, there has been a shift from blue- to white-collar occupations, as well as an increase in the skill content of employment in both kinds of work.

Pattern of Change:

- Substantial fall in demand for agricultural skills,
- Fall in demand for manual labor, both skilled and unskilled,
- Rise in demand for service sector occupations,
- Surge in demand for professional skills.

Romania and Turkey saw increases in the demand for manual labor (not decreases), but these increases were for skilled manual labor. Increased demand for skilled labor is also evident in the pattern of unemployment and exit from an employment found in the CEE regions.

As a rule - the unemployment rate is highest among workers with only a basic education, except in Turkey and Greece. The relatively low unemployment rate among workers with this level of education can be attributed to the fact that many of these workers are employed in agriculture.

In CEE, the demand for white-collar labor with medium-level skills is limited relative to supply, while the demand for blue-collar labor with mid-level skills is high relative to supply. But job prospects are limited for white-collar workers with medium-level skills (e.g., clerks, service workers, salespeople).

Changes in the demand for skills are certainly reflected in the movement of wages. Given the supply of skills, an increase in demand for certain skills manifests as an increase in the relative wages of workers who possess these skills. In the majority of CEE, the returns to education have sharply increased and are presently comparable to those observed in developed market economies.⁴

Skill based Educational Assessment

Lack of data on student learning and employment outcomes makes CEE a difficult area for education ministries to address the legacy of central planning. Ministries of education in the region continue to micromanage the sector using detailed norms and regulations. This input-oriented style of management leads to the inefficient use of resources and results in a rigid education sector—not the type of flexible sector needed by CEE to create modern, skilled workforces. Secondary education and high schools are facing difficulties in imparting problem-solving skills.

Driven by resilience to crisis situations these students face the danger of falling short in the modern day competitive market.

Universities need to focus on the importance of diverse degrees which improve the employability of a student in the current job market. Focus on filling the skill gap by directing students based on personality and interest assessment towards value-based societal needs massive improvement—current traditional degrees are focused on theoretical processes impractical in a face-paced competitive world of continuous change.⁴

Prof. Krzysztof Martyniak, eminent sociologist, University of Warsaw gives us an idea of what his take on this matter in Poland looks like: One of the problems of the modern labour market is the mismatch between education programmes/skills of young people entering the labour market and the needs of the economy. The problem does not concern only Poland, it is global. What are the reasons? First of all, the development of technology - so dynamic that it is difficult to prepare a study plan for several years taking into account potential changes and new requirements.

However, the global technology race has its leaders. Technology, for the time being, is not being created by itself. It is developed by people who are well prepared not only by the education systems, but also by general social support. That is why it is worth asking ourselves how to teach and support in order to transfer knowledge and skills as "timeless" as possible.

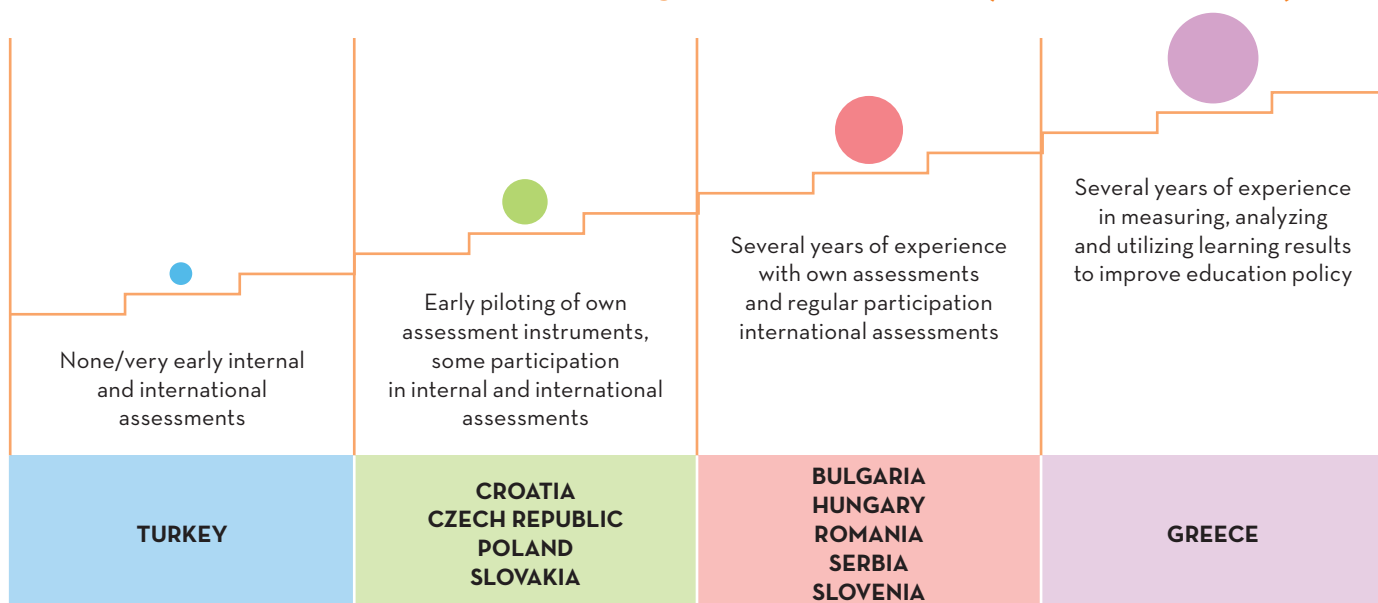
There are few roads. We should start with verifying how much of the information acquired by pupils or students is an (un)useful knowledge. People, seeing what they can achieve or create thanks to the acquired information, will, on their own, expand such knowledge - at all stages of their lives - if it becomes insufficient. This is the basis of the 'lifelong learning' principle.

Another challenge of education is the development of soft/social skills, teamwork and creativity related to social and cultural capital among young people. There are not many visionaries in the world, but a lot of fantastic achievements were the result of effective work of a group of people (synergy effect).

However, success will not be possible without wider and deeper cooperation between employers and educational institutions. In this context, it is particularly important to create new platforms for cooperation between universities and business, and to recognise the benefits of such exchanges for all actors involved.

Polish education is mismatched to the needs of business. Optimistically, I believe that we are in a perfect moment to make a difference in many areas of our lives. The economy produces good macroeconomic data and the unemployment rate record low. The market absorbs workers like a sponge, and in many sectors employers are willing to train on their own almost inexperienced people with the potential to acquire skills. There may be no better time for changes in education as is now.

Skill based Assessment of Learning Outcomes CEE (2000 – Current)⁴



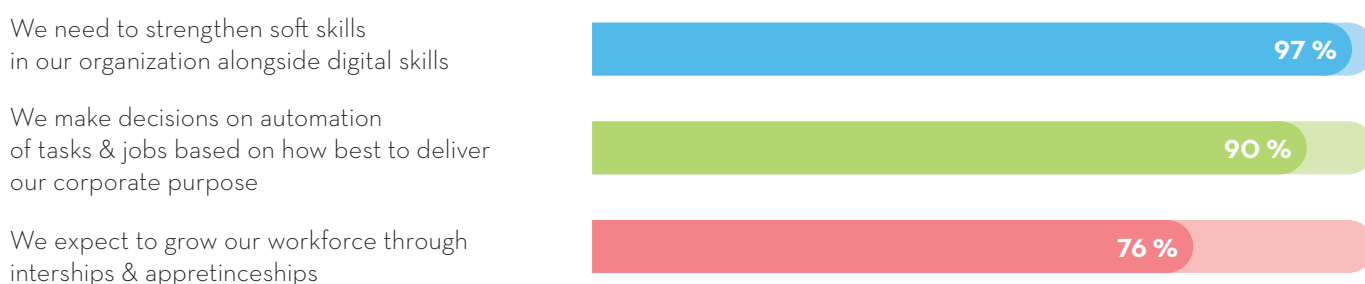
Most sought after jobs based on recommended skills & Job market growth

Zooming into Digital Skills in CEE

Before we announce TAG's top skills, for CEE let's have a closer look at digital skills, the global call-to-action for skills development with ample reason for growth in CEE.

Global companies have discovered CEE's deep digital talent pool, and since digital skills are portable, many of the brightest people in the region are lured to global players. Companies in CEE need to compete with the global brands names for top digital talent.³

Thinking about your people strategy for the digital age, how strongly do you agree or disagree with the following statements? ('strongly agree' and 'agree' answers)



Anna Wicha, Country Manager, Adecco Poland stresses the specificity of modern economy - transnational and more and more based on technology - it contributes to a brain drain - the interception of high-class specialists by employers from countries offering better living conditions. For Poland and other countries in the region, this is a two-dimensional challenge. On the one hand, we must do everything to limit the outflow of specialists from Poland. On the other hand, we should try to attract specialist from abroad, such as Ukraine. It could be said that the brain drain is an international game in which the most efficient and effective employers will win the competition. How do we deal with these struggles? According to Global Talent Competitiveness Index prepared by Adecco - Poland is ranked 39th out of 119 countries surveyed in terms of attractiveness for development and attracting talented employees.

The war for talent is going on, and which competences are the most valuable thing about it - it is still changing. That is why it is crucial for employees and candidates to implement the "longlife learning" principles. Technology, and consequently also business and our everyday lives, change too fast for once acquired knowledge to last for the rest of life.

Country Manager of Greece, **Konstantinos Milonas** gives us his input on Greece: In GTCI 2018, Greece is ranked 42nd in Talent Competitiveness among 119 countries. Now, some interesting figures also coming from this year's GTCI: Greece is No 1 in tertiary education enrolment but No 97 in Relevance of education system to the economy, No 51 in Skills matching with tertiary education and No 89 in Lifelong learning.

Greece has more than 20 Schools of Philology, Philosophy, History, Archaeology etc, known for their low labour market absorption and the high unemployment among their graduates. On the other hand, Greece only has 9 Schools of Maritime Studies and 13 Schools of Tourism, which are our main two "Heavy industries" in Greece. This is something that reflects the lack of relevance of the education system to the economy. It's high time Governments, Educational Institutions and Businesses came together to work for the right solutions to this very important issue.

Prof. Cristian MARINAȘ, MA Coordinator in Human Resources Management at the The Academy of Economic Studies in Bucharest's Faculty of Management, chimes in by pointing out what companies use the following strategies to attract or to develop the digital talent: modernising the working environment, implementing continuous learning and development programmes, improving compensations and benefits programmes, implementing the new flexible ways of working (mobile and remote working), working with educational studies and some times they are relocating their operations closer to available talent pools. CEE needs to work to create a hospitable environment to grow digital talent which is perhaps more vital than anything else to sustain and increase the growth of digitalization in the region.

Top skills Adecco recommended (hard and soft)

Analyzing the CEE market with data-partners WEF & OECD we propose, in no particular order:

TOP HARD SKILLS IN CEE	TOP HARD SKILLS IN CEE
IT Strategy Management	Creativity
Mechanical Engineering	Leadership & Crisis Management
Forklift Operation	Grit and Resilience
Marketing and Advertising	Flexibility and problem solving
Aviation Engineering	Cross Cultural understanding
Search engine optimization (SEO)	Entrepreneurship
Cybersecurity	Data literacy
Data Analytics	Agility & Quick Learning
Financial Analysis	

CEO Skills

What does it take to earn the top spot in the competitive emerging CEE market? Here is what TAG found from our data and recommend.

Cities with the Most CEOs

Warsaw, Masovian District, Poland

Hungary area

Istanbul, Turkey

Prague, The Capital, Czech Republic

Cracow, Lesser Poland District, Poland

Bucharest, Romania

Companies looking for/attracting the most CEOs in CEE

Apple

CEO

Siemens

Self-employed

Koc Holding A.S.

Citi

Ford Motor Company

Where are the CEOs coming from

SGH-Warsaw School of Economics

University of Warsaw

Anadolu University

Warsaw University of Technology

University of Zagreb/Sveuciliste u Zagrebu

Budapest University of Technology and Economics

Istanbul University

University of Belgrade

Corvinus University of Budapest

University of Economics, Prague

What are the main skills they have

Sales management

Business Planning

Social Media Marketing

Start-ups

Online Marketing

Entrepreneurship

Product Development

Management Consulting

Online Advertising

Business Analysis

What are the Industries actively hiring for senior management?

Information Technology & Services

Marketing & Advertising

Computer Software

Internet

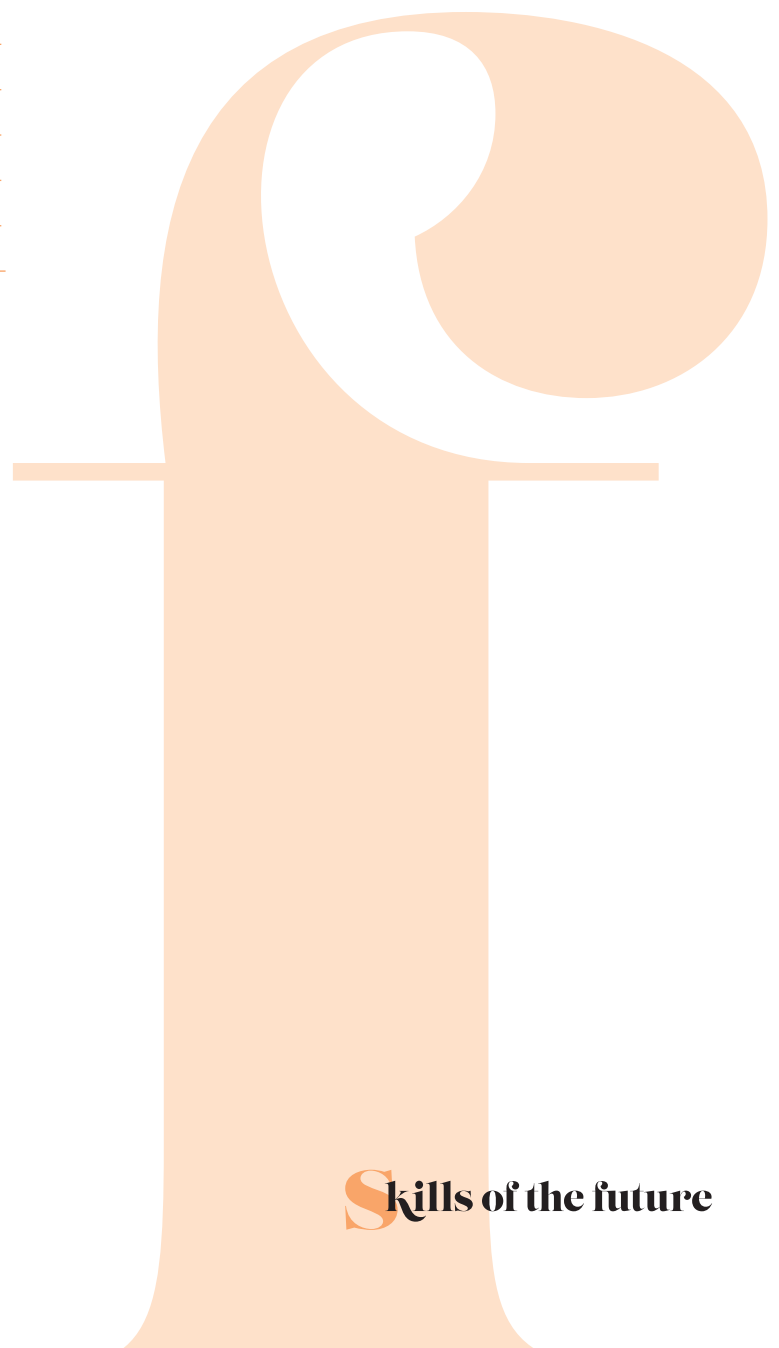
Construction

Financial Services

Management Consulting

Automotive

Konstantinos Milonas, Country Manager of Adecco Greece, emphasizes on the traits of a leader. High trust between leadership and employees increases the workforce's engagement and commitment and brings higher performance. And higher performance means more innovation and higher revenue. Given that for all businesses profit is a top priority, it's obvious why as CEOs we need to aim at building trust between leadership and employees. The competition for talent in today's labour market never abates. In this highly competitive environment we need to create a workplace where employees will choose to work in. In a recent survey Adecco Group Greece conducted, we found that one of the most important criteria employees evaluate when choosing an employer is the trusted and competent leadership. We need to focus on leading with an authentic, open and honest style, in order to inspire talented employees and earn their support that will lead to the success of the business.



TAG's recommendations for CEE

In an attempt to get the conversation started with key stakeholders, this is what TAG recommends:

Governments & Policy Makers	Universities & Educations Institutions	Companies & Enterprises	NEET – Youth
<p>Raise the profile of employment issues to the top of the political agenda</p>	<p>Introduce Autonomy and accountability of departments based on employability results, allow market needs to drive student interest</p>	<p>Map their workforce and establish a sustainable strategy to retain current employees</p>	<p>Consider work-based training solutions such as apprenticeships to enter the labour market, combining “classical” education paths with on-the-job learning experiences</p>
<p>Gather solid data on the labour market, mapping the skills pockets and needs</p>	<p>Improve the efficiency of resource utility through performance-based financing</p>	<p>Attract future talents and ensure that a solid proportion of flexible workers contributes to the innovation and growth of the company, across the economic cycles</p>	<p>Rely on the expertise and support of HR service providers that focus on providing the stepping-stone into the labour market and remaining a “career guide” throughout a worker’s life</p>
<p>Recognize and foster the role that actors such as the Adecco Group can play in the labour market, notably with regards to skills – and to lift unjustified restrictions that hinder private employment agencies to increase the employability of workers</p>	<p>Gather solid data on the labour market, mapping the skills and needs</p>	<p>Invest in work-based training solutions, either directly (or by calling on solutions such as the Agency Apprenticeship Contracts developed by The Adecco Group)</p>	<p>Develop a state-of-mind which recognizes that employment security, fostered by continuous skills development, is a more sustainable path to a gratifying career than relying on job security</p>
<p>Promote education policies that link the world of education with the world of work, with a strong focus on work-based training solutions</p>	<p>Structure programs based on practicality of the job market</p>	<p>Recognize that today 3-4 generations operate at work together and therefore boost diversity</p>	<p>Consider skill profiles that are not seen as “classical” in order to increase their own employability chances;</p>
<p>Encourage private-public partnerships that promote the development of work-based training opportunities, such as apprenticeships</p>	<p>Build the Foundations of Adult Learning Systems – important for universities to be at the forefront to shift government-defined programs towards a well-regulated market of private and public providers that deliver training services to both working and unemployed adults</p>	<p>Establish flexible working schemes recognising the different age groups, supporting mentoring schemes and allowing for life-long-learning experiences</p>	<p>See skills as a heterogeneous set of inherited, acquired, and yet to be learnt competences that are as much technical, as cultural such as “soft factors”, touching on aspects such as professional & punctual behavior, appearance, motivation and engagement</p>
<p>Boost openness of the labour market in order to attract the best talent and favour a culture of diversity.</p>			

Golden Age of Eastern Europe

TAG believes this quarterly focus on CEE comes at an opportune moment. It is now the age of emerging markets and CEE is moving into an optimistic period. Let's have a brief foray into the current economic snapshot of CEE to see why it's the golden age of CEE.

Germany has long been the engine that drives the EU's economic growth, but for the past few years it has been outpaced by countries further east—most notably Poland, Romania, and the Czech Republic.

The three largest eastern EU members by GDP are experiencing peaks of high economic growth, low unemployment, and manageable inflation of around 2%. The IMF now forecasts that "emerging and developing Europe" economies to grow 4.5% this year, upping their prediction by 1.5 percentage points from six months ago. This increased optimism is based, in part, on bumper growth in the second quarter of 2017, when Romania's economy increased 5.7% versus a year earlier, the Czech Republic's by 4.7%, and Poland's by 4.4%. By comparison, the EU average was 2.4% growth over the same period.

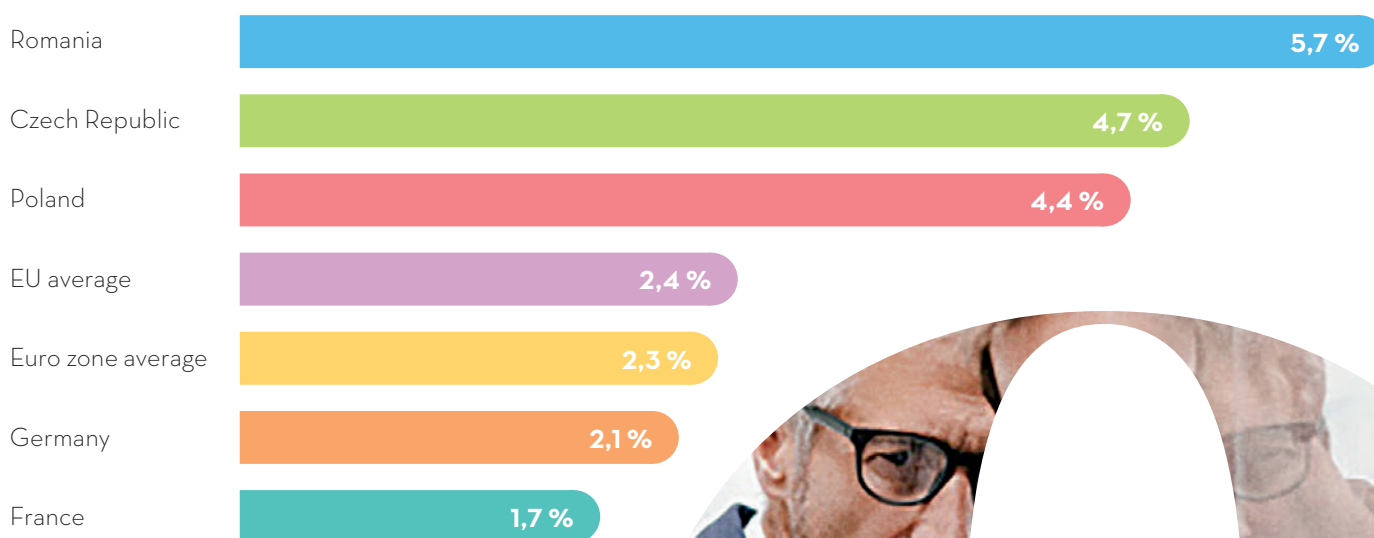
Prof. Cristian MARINAȘ, MA Coordinator in Human Resources Management at the The Academy of Economic Studies in Bucharest's Faculty of Management, supports TAG's recommendations with his deep-dive into the Romanian labour market and Education:

In today's business environment, companies need to constantly adapt their strategies to attract, maintain, and develop talent. For new generations, the concept of "traditional" work is not relevant anymore, young people are being motivated by a job that offers them a balance between the purpose of the work itself and the personal life, with a focus on horizontal communication and team work. The recognition of their results and the need for affiliation are important motivational factors, young people are being tempted to accept jobs that involve interaction with people from different cultures and geographic areas that involve a high degree of mobility instead of long-term and secure jobs that are based on very clear, monotonous rules and procedures. The emotional fragility of the current generations is the main problem, their resistance in stressful and work environments being very low. This is the reason why engagement becomes a strategic issue for companies whose future depends on finding the best solution regarding this matter. In the long term, competitive advantage will be gained by companies that will understand these behaviors and who will be able to adapt, personalize long-term employee retention strategies.

Educational systems must be rethought and adapted to the requirements of the new eco-system, with emphasis being placed on the development of practical skills, especially on the transversal ones. The involvement of professionals in teaching activities and the establishment of long-term partnerships with organizations from different fields of activity, in the case of practical training, should be encouraged as successful factors. Promoting innovative learning methods and resigning from the classical approach in which the teacher often seems to be the only benchmark, can make a decisive contribution to increasing the performance of Romanian education.

European economic growth in the second quarter of 2017

GDP vs previous year



Key players

All of CEE economies are still heavily reliant on manufacturing, exporting much of their production to the rest of the EU. For example, the Czech Republic has the lowest unemployment rate in the EU and about 35% of the Czech labor force is employed in manufacturing, the highest proportion of any EU country. When Europe is growing, demand for the things made in these economies grows. Often this means cars: automakers including Toyota, Volkswagen, and Peugeot have factories in the Czech Republic. Romania's largest exporter is Dacia, a subsidiary of French car company Renault (explored in Chapter 3).

Robust economic growth and low unemployment also leads to an increase in tax revenues, improving the health of budgets and making these countries more attractive to investors. At the same time, many eastern countries are starting to absorb the money from the EU's most recent

Skepticism?

Recent rapid growth in some of these countries may come at a cost. In Romania, there are fears that economic success is being spurred by unsustainable consumer spending fueled by the government increasing public wages. In August, Fitch Ratings sounded the alarm that this policy risked overheating the economy. Wages are outpacing productivity growth and tax cuts have widened the budget deficit, a Fitch analyst noted even as the agency boosted its forecast for Romanian GDP growth this year.

Now, rising wages are starting to send factory jobs to cheaper countries. Japan's Yazaki Corp., for instance, is switching production of the vehicle wiring it makes from the Plzen area to Serbia, where industry wages are almost 60 percent lower. With one of the region's best-educated populations, the Czech government pushed through development programs that lured German carmaker BMW to invest more than 200 million euros into a research facility developing digital technology and autonomous driving. In Romania, tax breaks lured the likes of Oracle Corp. and IBM.

In Poland, such companies as Amazon, JPMorgan and IBM have set up hubs or distribution centers, bringing foreign direct investment to a record \$10 billion in 2016. That's in part because Poland's work force offers a higher level of training relative to wage levels than in other parts of eastern Europe.

The biggest concern, perhaps, is politics. Over the weekend, billionaire Andrej Babiš and his populist ANO party won the most votes in the Czech Republic's legislative election. The anti-establishment candidate looks set to become the country's next prime minister, even as he's being investi-

seven-year budgetary cycle, which started in 2014, of which Poland is the biggest beneficiary. The Czech central bank governor recently said that the government's investment cycle is closely linked to the EU's budget cycle.

The IMF noted that public investment contracted sharply in the country last year because of low take-up of EU funds.

Poland is also benefiting from a surge in workers from Ukraine. It's estimated that as many as 1 million Ukrainians are working in Poland at any one time, who come for higher wages and more opportunities, especially since the recession that hit after the 2014 annexation of Crimea by Russia.

Ukrainian workers have helped address Poland's demographic issues—an aging population and low fertility rate—in addition to counterbalancing the emigration of millions of Poles after the nation joined the EU in 2004.

gated for misuse of EU funds. Promising to push for significant constitutional changes, his election was another rebuke for the traditional parties that have held power in Europe for decades.

Meanwhile, Poland's Law & Justice party are engaged in an ongoing battle with Brussels over efforts to reform the country's judiciary, which the European Commission has said isn't up to EU standards. That, and the increasingly authoritarian tendencies of the government, are spooking investors somewhat.

If the relationship between Eastern European governments and Brussels worsen, it's unclear what will happen in the EU's next funding cycle. Proposals have been floated to restrict funds going to countries that don't meet certain EU standards.

And even further into the future, these economies will need to shift jobs from manufacturing to services if they want to avoid the inevitable disruption to factory jobs from automation.

For now, the benefits of their economic models seem to outweigh the risks, so the EU's eastern economies are likely to keep growing. EU funds are there to be invested, central banks have supportive monetary policies, and political tensions aren't yet at a breaking point.

On this positive note, TAG moves on to a more pressing issue in chapter 2, Skills Mismatch and Reskilling.

European economic growth in the second quarter of 2017

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6. Finanza.repubblica.it. (2018). Thirty Years Upended as Eastern Europe Faces Skills Shortage. [online] Available at: https://finanza.repubblica.it/Bloomberg/2018/04/04/thirty_years_upended_as_eastern_europe_faces_skills_shortage-P6N4C-C6S972901_BLF/ [Accessed 27 May 2018].



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Looking at the Ingredients:

skills mismatch & re-skilling

When cooking a sweet or savory dish the most important element is finding the right ingredients. In this day and age, in Eastern Europe, where most of the countries have a low unemployment rate, there is a need for specialists. Why aren't CEE schools producing the candidates we can place? How can we continuously skill the current workforce to increase its potential?

The accelerating pace of technological, demographic and socio-economic disruption is transforming industries and business models, shortens the shelf-life of employees' existing skill sets in the process.

For example, technological disruptions such as robotics and machine learning—rather than completely replacing existing occupations and job categories—are likely to substitute specific tasks previously carried out as part of these jobs, freeing workers up to focus on new tasks and leading to rapidly changing core skill sets in these occupations.

Even those jobs that are less directly affected by technological change and have a largely stable employment outlook require a fresh take on skills – the workforce now needs to re-skill ever 5 years as opposed to every 20-25.

Let's try and break it down: Why is this important?

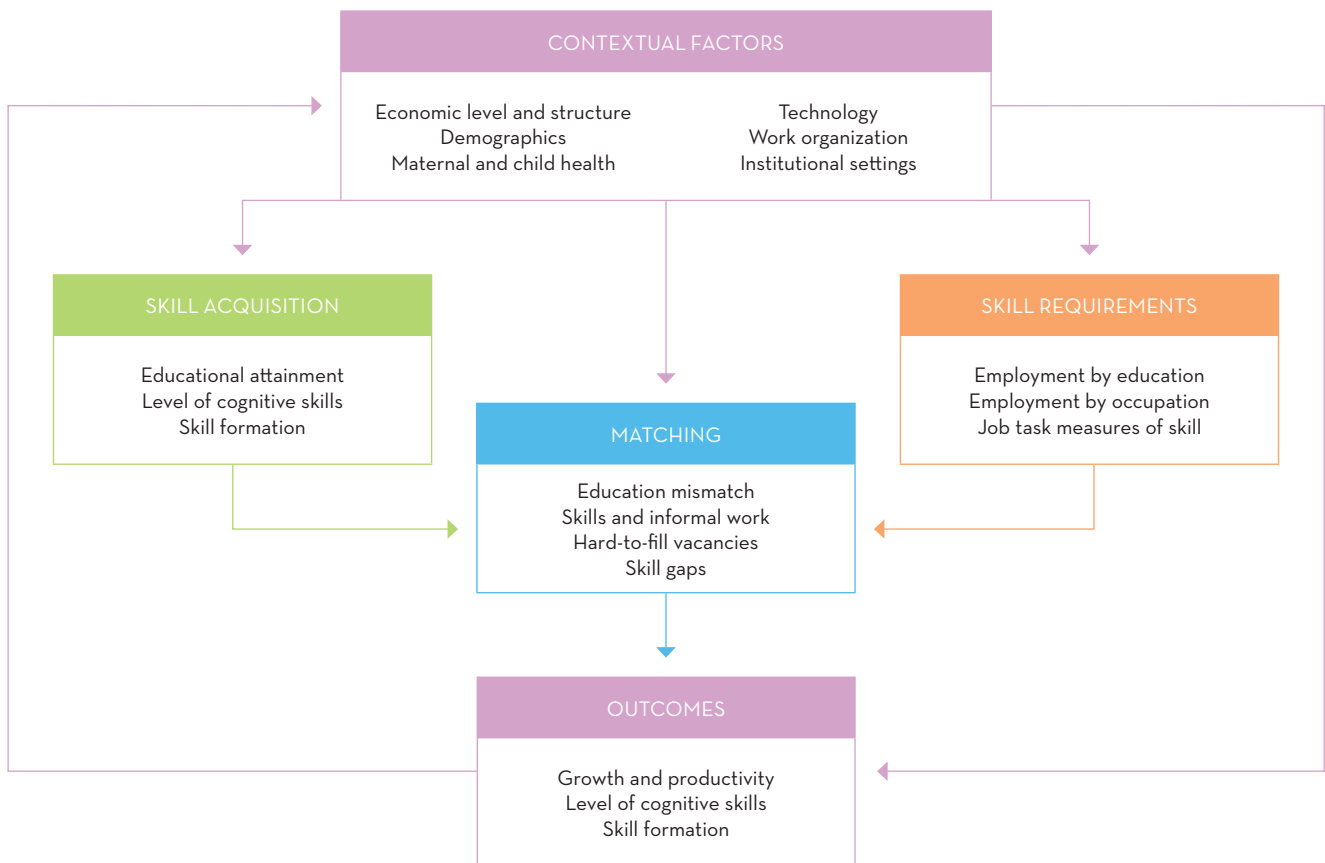
Labour markets around the world continuously demonstrate various types of 'mismatch', including mismatch between the number of job seekers and employment opportunities, which is reflected in unemployment.

But more importantly from a simpler perspective –

Are companies looking for skills in the local market that aren't there?

Why does CEE seem to need to import experts?

Are youth training and investing in education that will not guarantee them a job?



There are many factors that affect skills that are interconnected with economic productivity and individual growth. For a better cognitively developed nation and a pyramid growth of skills with a solid top-line expert block.

What is skill mismatch?

Skills Mismatch is defined as the gap between an individual's job skills and the demands of the job market; it has become a central challenge for Eastern Europe, affecting all layers of society, from the productivity and efficiency of businesses to the current and prospective welfare of youth.

Here are some of the more frequently discussed types of mismatch.

FREQUENTLY DISCUSSED TYPES OF SKILLS MISMATCH	
Skill shortage (surplus)	Demand (supply) for a particular type of skills exceeds the supply (demand) of people with that skill
Skill gap	Type or level of skills is different from that required to adequately perform the job
Vertical mismatch	The level of education or qualification is less or more than required
Horizontal mismatch	The type/field of education or skills is inappropriate for the job
Overeducation (undereducation)	Workers have more (less) years of education than the job requires
Overqualification (underqualification)	Workers hold a higher (lower) qualification than the job requires
Skills obsolescence	Skills previously used in a job are no longer required and/or skills have deteriorated over time

Skill Development, Activation and Matching¹

Determination of a country's skill progression is key in understanding steps to be taken forward, let's have a look at CEE¹:

SKILL DEVELOPMENT				
Country	Attainment of Upper Secondary Education	Participation in Post-Compulsory Education (last 12 months)	Vocational Educational Training Participation	Government spending on education as % of GDP (%)
Poland	0.15	-0.01	-0.01	8.26
Romania	0.08	-0.07	0.04	5.98
Czech Republic	0.23	0.06	0.08	5.83
Greece	-0.05	-0.04	-0.06	4.4
Hungary	0.12	-0.03	-0.08	7.89
Slovenia	0.10	0.00	0.05	6.7
Slovakia	0.21	0.02	0.07	5.9
Croatia	0.15	-0.02	0.07	6.12
Bulgaria	0.08	-0.06	NA	8.26

SKILL ACTIVATION		
Country	Employment Rate of Recent Graduates	Youth in NEET
Poland	0.15	-0.01
Romania	0.08	-0.07
Czech Republic	0.23	0.06
Greece	-0.05	-0.04
Hungary	0.12	-0.03
Slovenia	0.10	0.00
Slovakia	0.21	0.02
Croatia	0.15	-0.02
Bulgaria	0.08	-0.06

SKILL MATCHING					
Country	Tertiary graduates employed in lower skilled jobs	Employers expecting outdated of skills in 5 years	Underemployed Part-time workers	Structural Vacancies	Long term unemployment rate
Poland	-0.10	-0.04	0.17	0.43	0.06
Romania	0.08	0.14	-0.47	0.39	0.10
Czech Republic	0.26	-0.27	0.31	0.11	0.37
Greece	-0.25	0.02	-0.08	0.14	-0.54
Hungary	0.23	0.11	0.21	0.24	0.06
Slovenia	0.19	-0.32	0.14	0.31	-0.01
Slovakia	0.04	-0.13	0.22	0.17	-0.18
Croatia	0.10	-0.14	0.21	0.04	-0.22
Bulgaria	-0.26	0.42	0.28	0.31	-0.08

Czech Republic leads the way with the top scores across all of EU for life-long learning, VET and performs above average in all the 3 pillars measured. It also has a strong performance in upper secondary education, with participation and attainment ranked highly across Europe in general. Key issues when it comes to Czech for skills are brain drain and engaging high-schoolers in career building skill development activity.

The Czech Republic has been very good at publicly documenting skill and labour trends growth providing detailed analysis per profession on the skill changes and how an individual can improve their potential in the market. A snapshot of budounostprofesi, an online portal for Czech Future Skills on TAG's CEE skill recommendation and top growing skillset for Czech Republic IS/IT Management.³

Summary of present and future requirements:

	Current relevancy of skills	Future relevancy of skills
ICT	● ● ● ● ○	● ● ● ● ●
Sales marketing, law	● ● ○ ○ ○	● ● ● ○ ○
Processes, management, organization	● ● ● ● ○	● ● ● ● ●
Soft skills	● ● ● ○ ○	● ● ● ○ ○
Languages	● ● ○ ○ ○	● ● ● ○ ○
Interdisciplinary knowledge	● ● ● ○ ○	● ● ● ● ○
Specialized technical knowledge	● ○ ○ ○ ○	● ● ○ ○ ○
General technical knowledge	● ● ○ ○ ○	● ● ● ○ ○

Poland follows Czech in many areas with has great results across in the board, falling below EU average only in skills activation. This shows that young graduates aren't necessarily equipped with the right skills and though are employed fairly well by the Polish market right off the bat still need training to increase productivity with a focus on specialization. Slovenia is another strong contender with great scores for VET and post-secondary education. Slovenia falls behind in activating the aging population from 50 onwards and keeping them engaged before retirement. Another factor is that Slovenia has very high rates of Skills obsolescence with a lot of skills completely being replaced by new ones.

Dr Ioannis Nikolaou, Work & Organizational Psychologist, Associate Professor in Organisational Behaviour and Director of the MSc in Human Resources Management at Athens University of Economics and Business, mentions that governments need to invest heavily in education. East European countries need to follow the example of countries such as Poland, Bulgaria and Hungary which have increased their educational budgets, as % of their GDP. Education is the best response in dealing successfully with skills mismatch. Further, governments should encourage an alignment between education (especially universities) and industry, in order to reduce shortage in specific occupations and also provide reskilling into professions suffering from increased surplus and high unemployment rates. As a whole Greece ranks the lowest across the 28 member

states of the EU, with scores well below the EU average for each of the three pillars with a particularly low score for long-term unemployment.

Konstantinos Milonas, Country Manager of Adecco Group Greece, says: In a recent survey conducted by Adecco Group Greece, in Greece 80% of employers stated that they believe that the education system in Greece does not equip graduates with the necessary skillset required by the labour market. In the same survey we found that the soft skills mostly sought by Companies in Greece are business ethics, teamwork, flexibility and adaptability and communication skills. Answering whether they find these skills in the candidates they assess for job positions in their companies, they told us that they don't find them easily and to the extend they need them. The majority of the respondents think that the most effective way to address the skills gap is through Internship and Apprenticeship schemes that can prepare youngsters for the world of work. It is also important that schools and universities make their students familiar with business practices.

Teach them how to work in teams, give them the opportunity to practice public speaking, improve their presentation and communication skills etc. It is true that we have a big number of highly educated candidates in Greece as far as their academic background is concerned. What we need to focus on more is to empower them with the necessary soft skills that will help them thrive in today's world of work.

Zooming on Country-wise shortages¹

Mismatch of priority occupations defines the direction of need-based education and we look into some top line mismatches. We will go into 3 industries in detail in the next chapter and attempt to answer some important questions:

Croatia

Mismatch priority occupations

Shortage occupations	Surplus occupations
ICT Professionals	Political scientists
Mechanical engineers	Journalists
Medical doctors	Philosophers
Nursing associate professionals	
Secondary education teachers (mathematics)	

Bulgaria

Mismatch priority occupations

Shortage occupations	Surplus occupations
ICT professionals	Street workers
Teachers	Labourers in mining, construction, manufacturing and transport
Health professionals	Refuse workers
Financial and mathematical professionals	Agricultural, forestry and fishery labourers
Sales and purchasing agents and brokers	Cleaners and helpers
Administration and business services professionals	

Greece

Mismatch priority occupations

Shortage occupations	Surplus occupations
Business services and administration managers	Building frame and related trades workers
ICT operations and user support technicians	Mining and constructions labourers
Sales, marketing and development managers	Wood treaters, cabinet-makers and related trades workers
	Painters, building structure cleaners and related trades workers

Czech Republic

Mismatch priority occupations

Shortage occupations	Surplus occupations
Engineers and other technical professionals	Workers in hospitality and gastronomy sector
Nursing and midwifery professionals	Project managers
Medical doctors and other health professionals	General and keyboard clerks
ICT professionals	Architects and urban planners and designers
Teachers	

Slovenia

Mismatch priority occupations

Shortage occupations	Surplus occupations
ICT professionals	Building and related trades workers
Health professionals	Science and engineering associate professionals
Science and engineering professionals	Metal, machinery and related trades workers
	Handicraft and printing workers
	Drivers and mobile plant operators
	Business and administration associate professionals
	Stationary plant and machine operators
	Personal service workers
	General and keyboard clerks

Poland

Mismatch priority occupations

Shortage occupations	Surplus occupations
ICT specialist	Market-oriented skilled forestry and fishery workers
Healthcare specialist	Food processing workers
Managers	Wood working workers
Science and engineering professionals	Garment and other craft and trade related workers
Skilled manual workers	Social, cultural and related associate professionals
Teaching professionals	

Romania

Mismatch priority occupations

Shortage occupations	Surplus occupations
ICT professionals	Client information workers
Health professionals	Clerks
Teachers	Retail and wholesale trade managers
Sales, marketing and public relations professionals	Street vendors (excluding food)
Financial professionals and legislators and senior officials	Building and housekeeping supervisors
Professional services managers	
Forestry and related workers	
Administration services professionals	

Hungary

Mismatch priority occupations

Shortage occupations	Surplus occupations
ICT professionals	Street vendors
Engineers and natural science professionals	Hotel and restaurant managers
Health professionals	Mining and construction labourers Keyboard operators
Economic and financial managers and professionals	General office clerks
	Agricultural, forestry and fishery labourers
	Textile, fur and leather product machine operators
	Garment and related trades workers
	Food preparation assistants, cashiers and ticket clerks
	Shop salespersons

Adecco Group's Recommendations

The Adecco Group addresses the current skills shortages and skills mismatch with these recommendations:

- **Work-based training, such as apprenticeships, make sure that the education “output” matches the need of businesses, while also giving young people a valuable first experience to the realities of the world of work.**
- **Lifelong learning is indispensable in times of rapid technological, economic and demographic change.**
- **Work mobility is an important tool for businesses to find the talent they need despite shortages on the local labour market.**
- **Diversity has become a key component for companies to succeed, encompassing strategies that cater for a diverse workforce (by gender, age, geographical/cultural origins), as well as diversity in labour contracts and forms of work.**

Stay with TAG to explore 3 industries Automobile, IT and Engineering in detail in Chapter 3.

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1. Skills Panorama. cedefop.europa.eu. (2018). Skills Panorama. [online] Available at: <http://skillspanorama.cedefop.europa.eu/en>
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3. [http://www.praguebest.cz], P. S. (n.d.). Budoucnost profes. Retrieved from <http://budoucnostprofesi.cz/en/index.html>



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A Bite of the Apple:

**skills
analysis
of key industries**

IT, Automobile & Engineering

The accelerating pace of technological, demographic and socio-economic disruption is transforming industries and business models, shortens the shelf-life of employees' existing skill sets in the process.

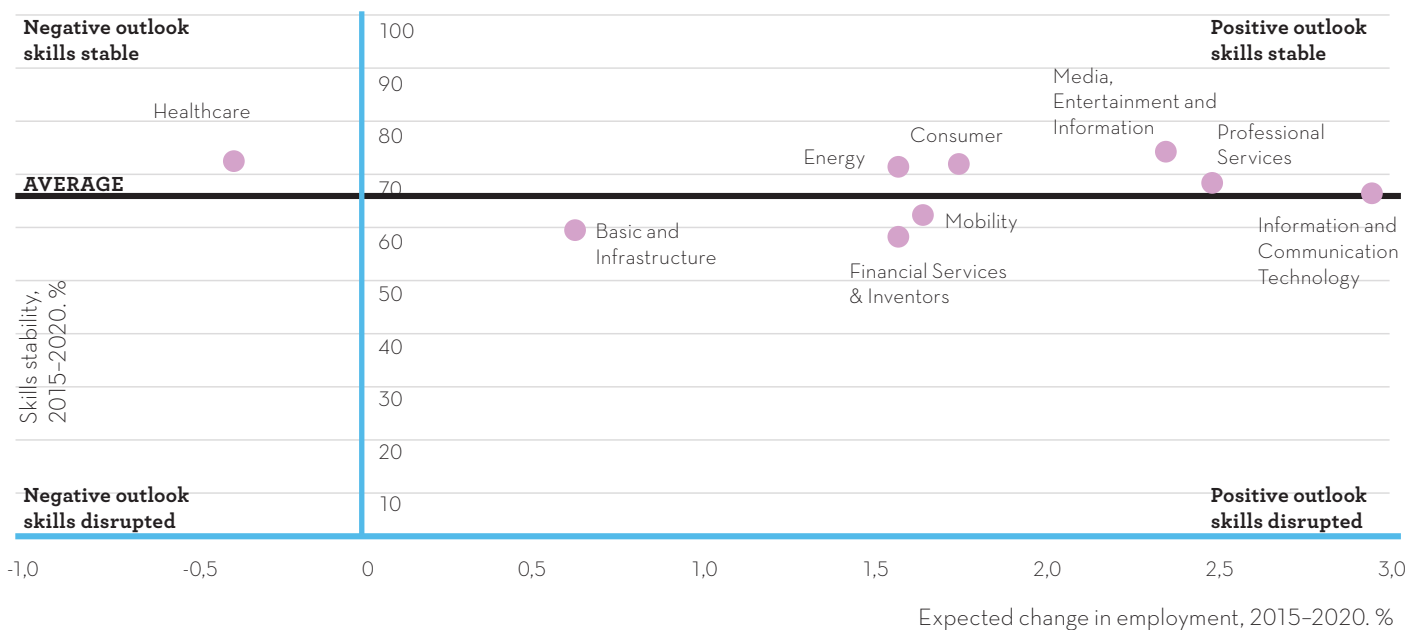
For example, technological disruptions such as robotics and machine learning—rather than completely replacing existing occupations and job categories—are likely to substitute specific tasks previously carried out as part of these jobs, freeing workers up to focus on new tasks and leading to rapidly changing core skill sets in these occupations.

Even those jobs that are less directly affected by technological change and have a largely stable employment outlook require a fresh take on skills – the workforce now needs to re-skill ever 5 years as opposed to every 20-25.

Let's try and break it down: Why is this important?



- Rising geopolitical volatility
- Mobile internet and cloud technology
- Advances in computing power and Big Data
- Crowdsourcing, the sharing economy and peer-to-peer platforms
- Rise of the middle class in emerging markets
- Rapid urbanization
- Changing work environments and flexible working arrangements
- Climate change, natural resource constraints and the transition to a greener economy
- New energy supplies and technologies
- The Internet of Things
- Advanced manufacturing and 3D printing
- Longevity and ageing societies
- New consumer concerns about ethical and privacy issues
- Women's rising aspirations and economic power
- Advanced robotics and autonomous transport
- Artificial intelligence and machine learning
- Advanced materials, biotechnology and genomics



Source: WEF Analysis

Hiring a team of data scientists or the trendiest new job title isn't just the answer, integrating the workforce using AI and technology driven by these new jobs to augment the current workforce's skills has a value that is insurmountable.

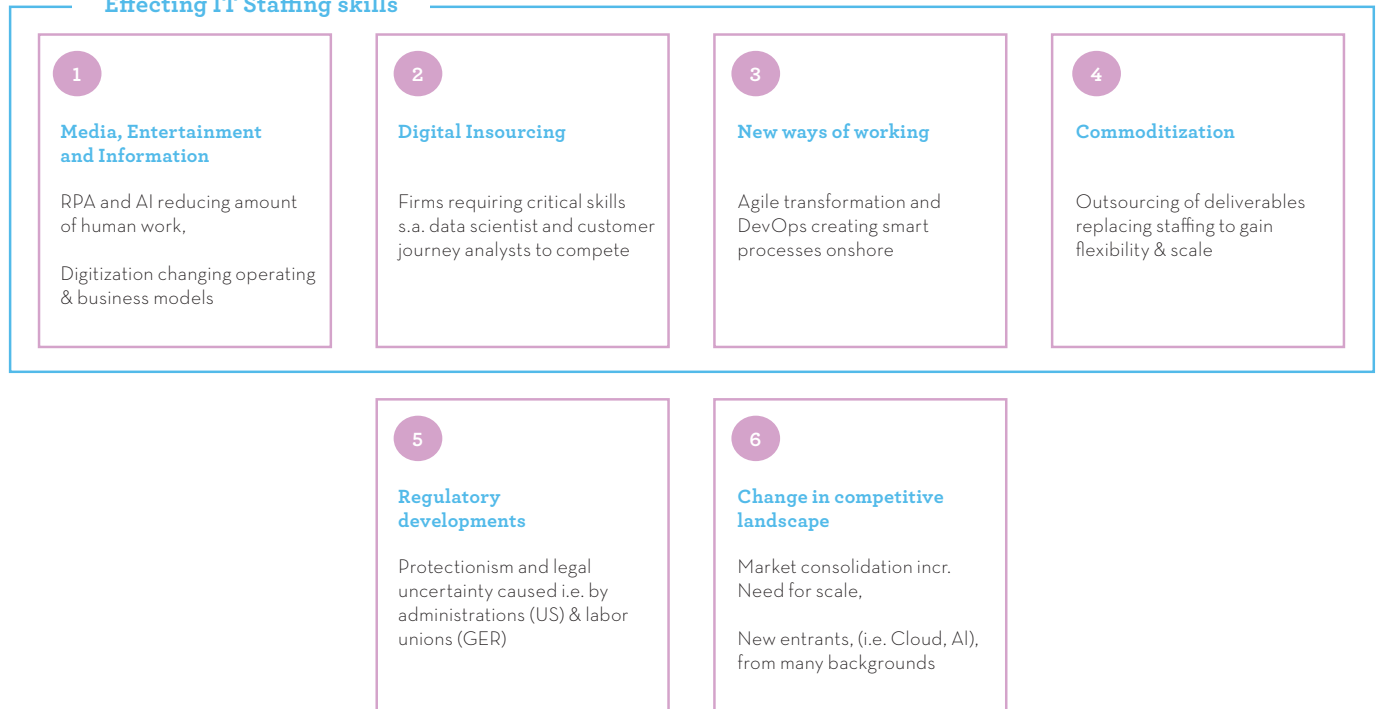
Organizations need a diverse workforce with a 'probability mindset'- this defines the future of management, managers will be focused on managing complexity, juggling and multi-tasking tech with effective empathetic human interaction.

TAG now attempts to tackle 3 key industries – IT, Automobile and Aviation Engineering and map the change in skills with these major CEE industries garnering the largest FDI investment.

Information Technology

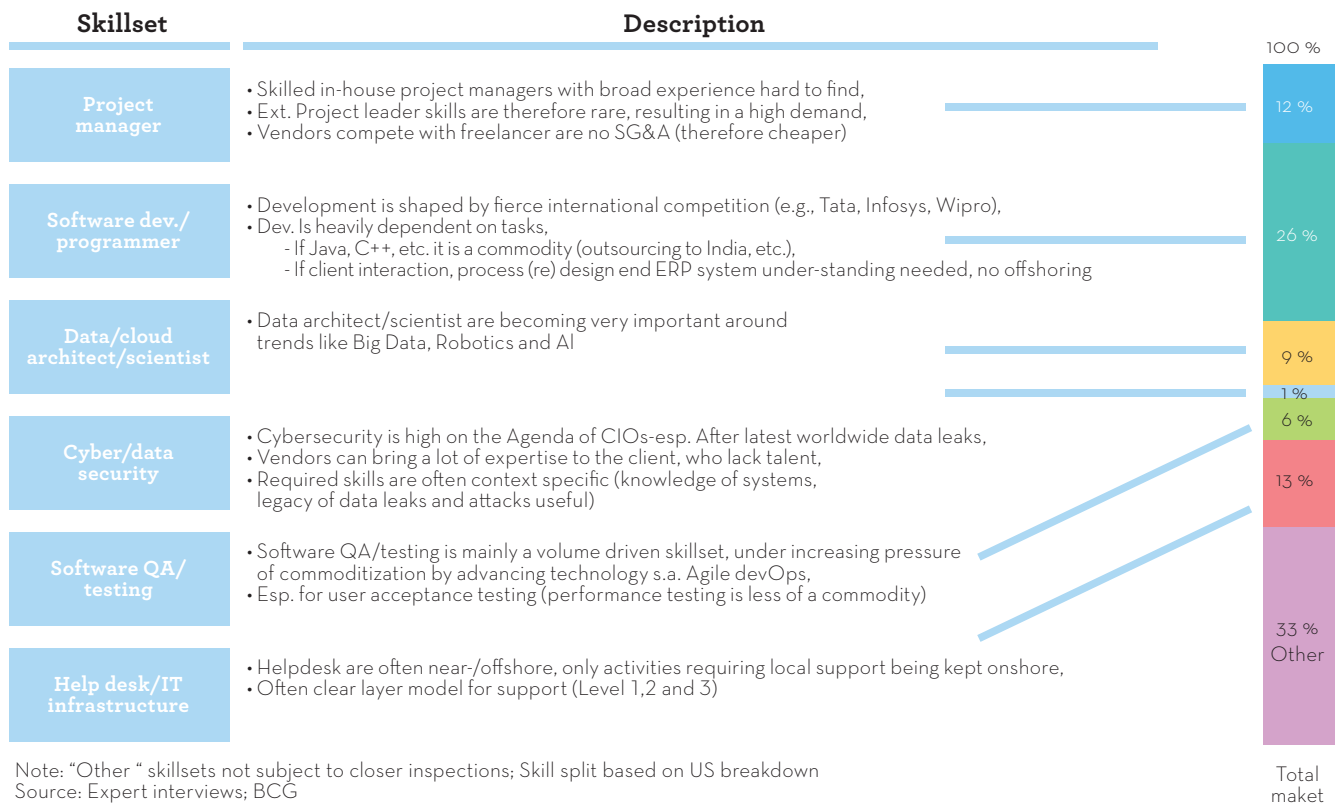
With ICT Skills being the largest scarcity when it comes to skills in the CEE, we take a deep dive into understanding where this lies and what the true drivers of effecting IT staffing skills are.

Effecting IT Staffing skills



What is the largest skill group rapidly in need right now?

Software Developers / Programmers still the largest skill group



Note: "Other " skillsets not subject to closer inspections; Skill split based on US breakdown
Source: Expert interviews; BCG

Skills are largely applicable across verticals

	Tech/Telco	Banking/FS/ Insurance	Retail	HC/Pharma/ Biotech/Med dev..	Public sector	Manufacturing Also drives dependency Engineering PS on IT skills
Project Manager						
Software Dev./ Programmer						
Data/cloud Architect/ Scientist						
Cyber/data Security						
Software QA/testing						
Help desk/ IT infrastructure						

Drives of this shift as mentioned at the start of the chapter is driven by AI and RPA and the rapid change of business models and talent models as touched on in chapter 1.

Description

- RPA and AI reducing amount of human work
- Digitization changing operating & business models
- Firms requiring critical skills s.a. data scientists and customer journey analysts to compete
- Agile transformation and DevOps creating smart processes onshore
- Outsourcing of non core processes as deliverables, replacing staffing to gain flexibility & scale

Description

- Urgent demand for efficient solutions
- Client lacking tools, licenses and facilities
- Old technologies becoming “non-core “
- Lack of internal know-how of processes becoming core or increasingly important
- Business value and IP of core processes
- Low ability or lack of experience to apply agile best practices or DevOps, but need for efficiency and quality & cost advantage
- Technological evolution & globalization result in globally available skillset creating potential for arbitrage

Adecco Group Greece Country Manager **Konstantinos Milonas** takes us down a snapshot of digitalization and ICT Skills in Greece: The technological advancements are implemented so fast that mapping out a talent acquisition strategy is a challenge HR sector must face. Attracting and retaining key digital talent can differentiate the winners from the losers of today's business world. In Greece, it seems that we are still striving to keep pace with other European Countries in digital evolution. Europe's Digital Progress Report (EDPR, 2017) tracks the progress made by Member States in terms of their digitization. Greece ranks 26th out of the 28 EU Member States. Overall Greece does not progress as fast as other EU Member States. In Human Capital, Greece's performance is well below EU average even though it is slightly progressing. In 2016, the percentage of the Greek population using the internet on a regular basis (66%) was one of the lowest among European countries (EU average is 79%). We though see that the number of individuals having at least a basic level of digital skills is progressing with 46% in 2016 compared with 44% in 2015. The share of the STEM graduates remains relatively high and this is promising for Greece's digital future. Currently, though, Greece still has the lowest proportion of ICT specialists in the workforce (1.2%) in the EU as shown on the EDPR 2017.

With Greece suffering a lot lately from a "brain drain", attracting and retaining ICT specialists remains crucial for supporting the Country's digital transformation. With the recent technological advancements and the rapid changes they bring in the way we work, digital skills and competences are needed for nearly all jobs. Not being able to cope with the need of dealing with digital talent shortages could increase barriers for the country's economic development.

Tibet Egriglou, Zone Director, MENA and Turkey comments on the need for ICT skill development in Turkey.

Technology, artificial intelligence and robots are inevitable facts that need to be adapted in business world. You need to adapt to the new technologies. You can observe technological developments in all industries. The most important point is the open-minded view of individuals to continue a life-long learning.

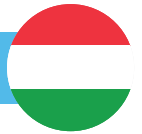
We aren't ready for artificial intelligence yet, neither as a society nor as individuals. Although we strive to reach it. With high rates of youth unemployment in Turkey, it is not only a responsibility, but is also a strong investment for the future. Hence, investing in the digital area and improving the skills of the existing work is a must.

Technological changes, greater adoption of robots and artificial intelligence brings about a great change in the field of Human Resources. Human Resources need not only to be aware of the change to prepare their companies for the future, but also predict the changes. They should also lead the way for better education of professionals in terms of skills.

As the speed of development of the technology increases, we shouldn't oversee that new skills will be needed. It is very important for the companies to foresee the skills and develop them constantly.

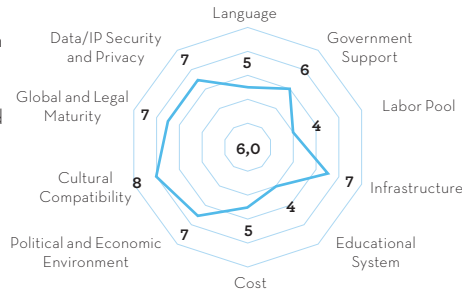
A further look into some of our IT focus countries courtesy of Modis, Adecco Group:

HUNGARY – ITO MARKET 2016



Hungary's value proposition is based on cost-competitiveness, geographic and time-zone proximity to European countries, educated workforce, political and economic stability through the EU membership, close cultural affinity with Western Europe and the USA, and government incentives for inward investment. Approximately 42,000 workers deliver exported business services, based predominantly in Budapest, with much smaller workforces in Debrecen, Székesfehérvár, Pécs, Békéscsaba and Szeged.

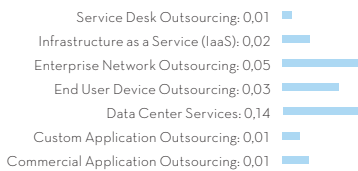
Offshore/Nearshore Comparative rating



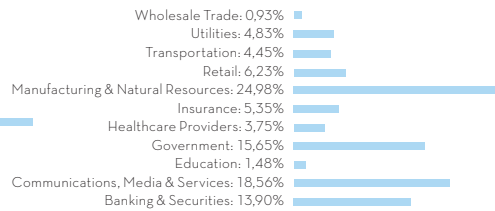
Country Indicators

Minimum wage	2,3 € / h
Unemployment	4,5 %
GDP growth	+2,2 %
Population	10 million
Offshore location	Yes

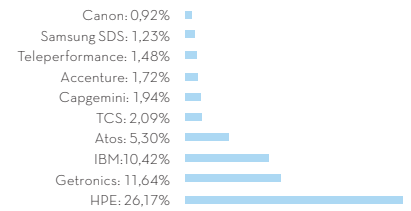
IT Outsourcing Market 2016



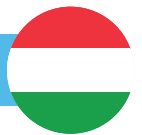
ITO Market 2016 – split per vertical



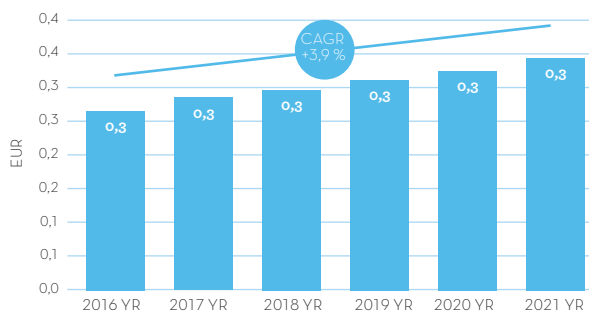
Top 10 vendors – Market share 2016



HUNGARY – Market forecast



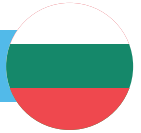
IT outsourcing market forecast 2016-2021



Market highlights

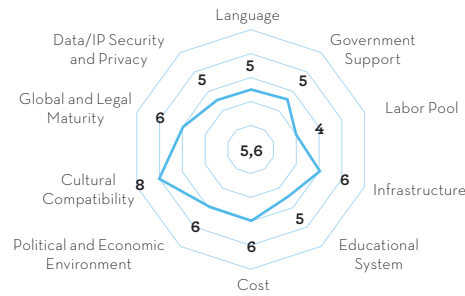
- Hungary's value proposition is based on its stable economy, educated workplace, attractive labor rates and government incentives for inward investment
- Delivery centers are heavily centralized around Budapest, which supplies more than 80% of the capacity for nearshore services. Approximately 42,000 workers deliver exported business services, based predominantly in Budapest.
- The Hungarian government has continued a program to attract foreign direct investments, which it started in 2014. It offers regional grants, training subsidies and various tax breaks.
- Foreign language capability is lower than many other locations in Europe, and although most fresh graduates now have English language skills, it is not widely spoken. Other languages spoken in Hungary include German and French, but again, they are not widely available.
- The tax system is gradually moving from an income-based system to a consumption-tax-based system. Currently, there is a flat-rate tax system with a 16% personal income tax and corporate tax rate of 10% (up to 500 million forints).

BULGARIA – ITO MARKET 2016



Building on its legacy as a key hardware and software supplier to Russia, Bulgaria has become a major provider of technical skills within southeast Europe, with service exports now contributing over 3% of the country's economy. Despite relatively low numbers of staff, Bulgaria's service export industry is growing rapidly due its healthy economy, political stability and strong foreign language offerings. Supported by a business-friendly environment and a legislative base derived from its EU membership, Bulgaria is being used as an outsourcing destination by an increasing number of European and North American businesses.

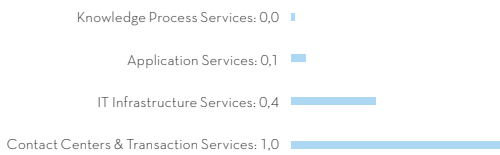
Offshore/Nearshore Comparative rating



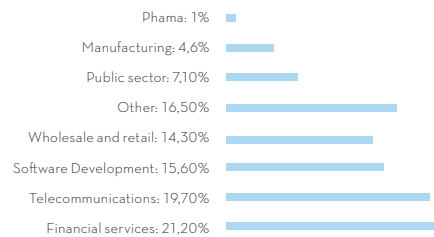
Country Indicators

Minimum wage	1,4 € / h
Unemployment	7,1 %
GDP growth	+7,0 %
Population	7 milion
Offshore location	Yes

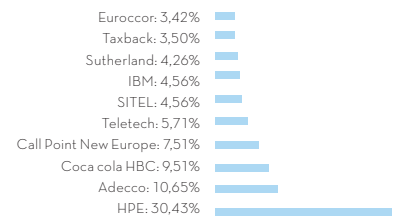
IT Outsourcing Market 2016



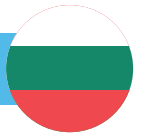
ITO Market 2016 – split per vertical



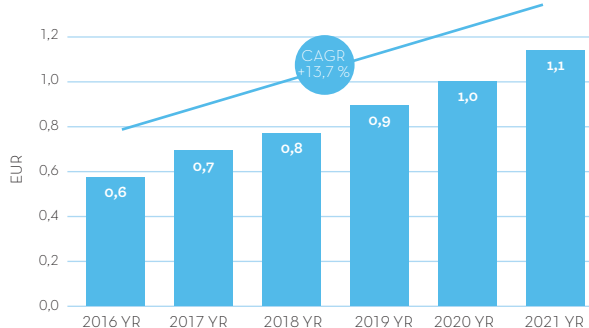
Top 10 vendors – Market share 2016



BULGARIA – Market forecast



IT outsourcing market forecast 2016-2021



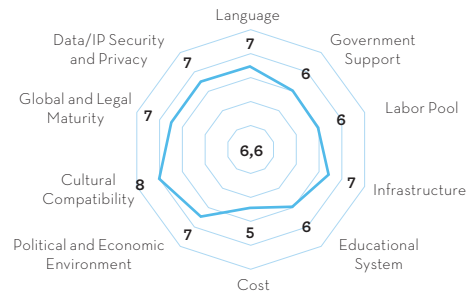
Market highlights

1. Stable growth forecasted for the outsourcing industry in Bulgaria
2. Bulgarian outsourcing industry (incl. BPO) is expected to reach more than EUR 2.7 bln and contribute over 6,0% of the country's GDP by 2020
3. Language proficiency and IT skills remain crucial and outsourcing companies
4. ITO/BPO sector is expected to contribute more and more to the national economy in the period 2016-2020
6. The outsourcing industry is becoming an increasingly important taxpayer
7. The differentiation between ITO and BPO is gradually fading because of the growing complexity of the processes and overlapping of activities performed by the company
8. The most perspective outsourcing subsectors are shaved service centres and cloud services.
9. UK's withdrawal from the EU may boost Bulgarian outsourcing industry, as companies operating in Britain come under increased cost-cutting pressure following the Brexit.
10. Bulgaria's offshoring industry is growing at a 13% compound annual growth rate through a combination of low labor costs and a stable economic environment.
11. Bulgaria's government supports the export of services through a low corporate tax rate (10%), a fixed personal income tax rate, and a two-year value-added tax (VAT) exemption on the import of high-tech equipment.
12. Costs in Bulgaria (labor, RE, Infrastructure) are lower than the other CEE countries.
13. No1 in Europe in IT-certified specialists per capita
14. No3 worldwide in the number of certified IT professionals
15. AWARDS:
 - Offshoring destination of the year 2015 (European Outsourcing Association) AT Kerney's 2016 Global Service Index
 - 2nd most preferred destination in Europe (after Poland)
 - 12th most preferred destination worldwide

POLAND – ITO MARKET 2016

Poland was one of the first countries in Eastern Europe to build a nearshore service capability, and it remains one of the most successful. Over 900 delivery centers operate from the country, with 140,000 people working for service providers, and a further 70,000 working in captive and shared service centers operated by multinational corporations. About 60% of the labor pool is in Krakow, Warsaw and Wroclaw.

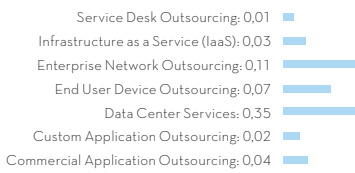
Offshore/Nearshore Comparative rating



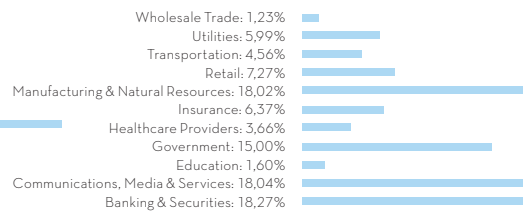
Country Indicators

Minimum wage	5,0 € / h
Unemployment	7,4 %
GDP growth	-1,1 %
Population	39 million
Offshore location	Yes

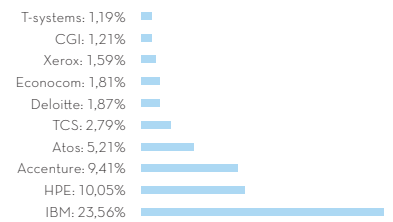
IT Outsourcing Market 2016



ITO Market 2016 – split per vertical

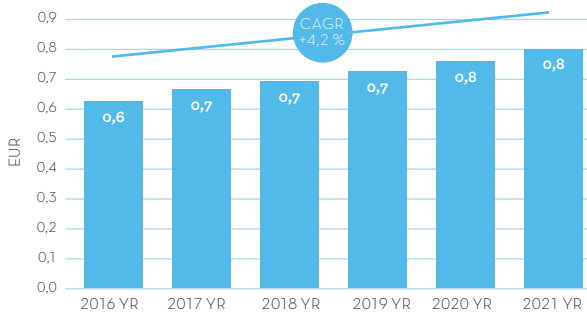


Top 10 vendors – Market share 2016



POLAND – Market forecast

IT outsourcing market forecast 2016-2021



Market highlights

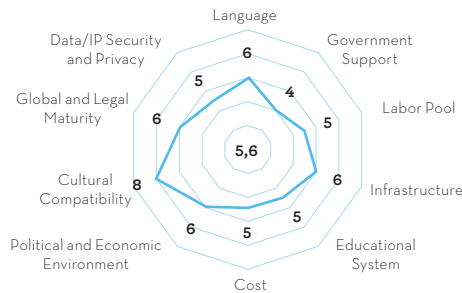
- Over 900 delivery centers operate from the country, with 140,000 people working for service providers, and a further 70,000 working in captive and shared service centers operated by multinational corporations
- Over 450 companies have now located delivery centers in Poland, and the service export economy has grown at an 18% CAGR since 2009.
- Krakow is the largest cluster of delivery centers, with 30,000 workers, Warsaw and Wroclaw both offer around 20,000 workers, and Lodz has a further 10,000. Smaller secondary cities include Katowice, Lublin, Bydgoszcz, Posnan and Szczecin.
- The availability of resources with strong foreign language skills is very good in Poland.
- The Polish government established 14 Special Economic Zones where businesses can claim exemption from corporate income tax.
- Gartner estimates a labor pool of 198,000 FTEs (30% IT, 21% business process services, 14% R&D and 35% shared-service centers.
- AT Kerney's 2016 Global Service Index
 - 1st most preferred destination in Europe

ROMANIA – ITO MARKET 2016



According to the Association of Business Service Leaders in Romania (ABSL), the country's IT service industry is worth over \$2,5 billion and is expected to continue growing due to its labor costs and technical and language skills. Romania has invested heavily in technology parks, with 2,25 million square meters of office space available in Bucharest and increasing options in cheaper secondary cities such as Clujnapoca, Iasi and Timisoara.

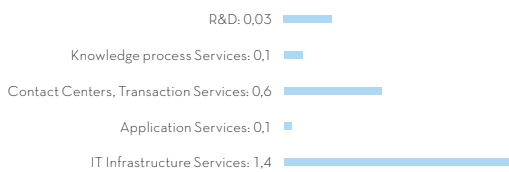
Offshore/Nearshore Comparative rating



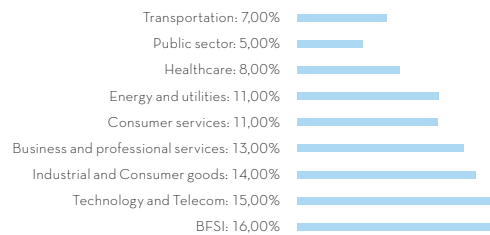
Country Indicators

Minimum wage	1,8 € / h
Unemployment	5,4 %
GDP growth	+5,3 %
Population	19 milion
Offshore location	Yes

IT Outsourcing Market 2016



ITO Market 2016 – split per vertical



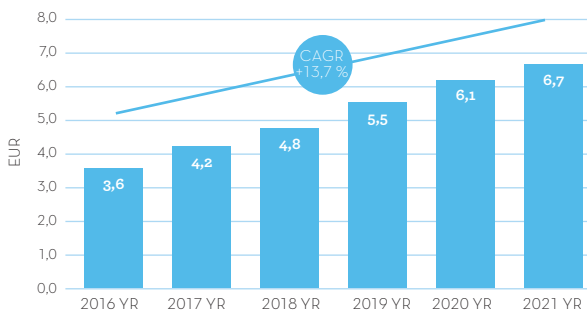
Main players:

- Oracle
- Microsoft
- IBM
- HPE
- Orange
- Vodafone
- BRD
- P&G
- Emerson
- Bosch

ROMANIA – Market forecast



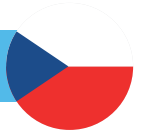
IT outsourcing market forecast 2016-2021



Market highlights

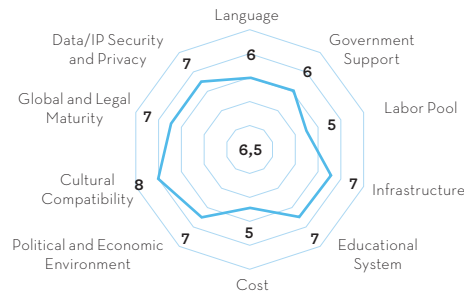
1. The country's IT service industry is worth over \$2,5 billion and is expected to continue growing due to its labor costs and technical and language skills.
2. Romania's political stability has improved as an established member of the EU, and service exports continue to grow at above 10% per year
3. The demand of skilled labor is creating challenges in attracting and retaining the best talent.
4. Romania has invested heavily in technology parks, with 2.25 million square meters of office space available in Bucharest and increasing options in cheaper secondary cities such as Cluj-Napoca, Iasi, Timisoara.
5. In addition to English language skills, Romania is an interesting option for customers needing other European languages: 27% of IT workers speak French, and in total, Romania offers 2.7 million French speakers. German, Italian and Spanish speakers are also widely available.
6. Romania's political stability has improved as an established member of the EU, and service exports continue to grow at above 10% per year. Romania is now home to delivery centers for more than 50 well-known multinational brands.
7. Gartner estimates a labor pool of approximately 60,000 FTEs²⁴ (50% IT services, and 70% business process services).

ROMANIA – ITO MARKET 2016



The Czech Republic is a well-established nearshoring location for business operations in EMEA, for both business process services and, increasingly, IT outsourcing. As an EU member, and with a stable political situation, it provides a mature business environment for outsourcing service operations. Its location at the center of Europe and well-developed infrastructure give it strong connectivity to the rest of the Continent, while a tradition of quality higher education produces over 80,000 well-educated graduates each year, many with the ability to speak a second language.

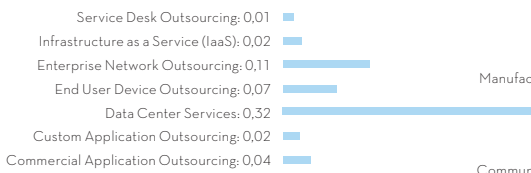
Offshore/Nearshore Comparative rating



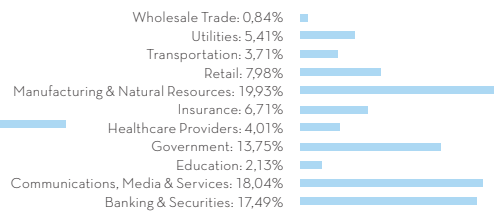
Country Indicators

Minimum wage	3,7 € / h
Unemployment	4,0 %
GDP growth	+6,1%
Population	11 milion
Offshore location	Yes

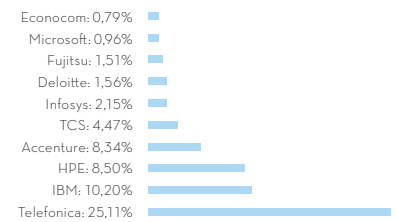
IT Outsourcing Market 2016



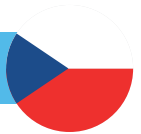
ITO Market 2016 – split per vertical



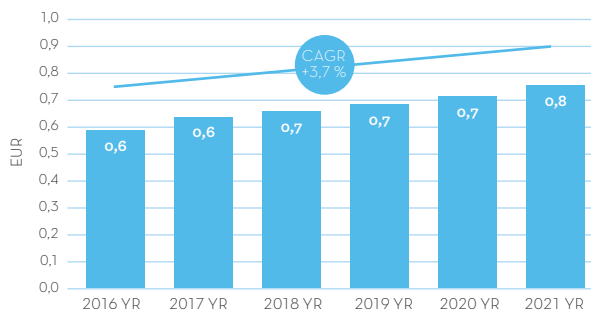
Top 10 vendors – Market share 2016



ROMANIA – Market forecast



IT outsourcing market forecast 2016-2021



Market highlights

1. The Czech Republic is a well-established nearshoring location for business operations in EMEA, for both process services and, increasingly, IT outsourcing
2. As an EU member, and with a stable political situation, it provides a mature business environment for outsourcing service operations
3. More than 200 businesses use the Czech Republic as a nearshoring location, employing over 75,000 staff here.
4. The outsourcing service sector in the Czech Republic grew by 19% in 2016. As a result, competition has increased for resources, leading to rising costs of operation.
5. The Czech Republic is well-connected by transit corridors (air, road and rail) to all major European countries and ranks positively on quality of air transport compared with the other major European economies. Its IT infrastructure is also relatively well-developed.
6. A wide range of IT skills continues to be fueled and supported by a strong educational system.
7. Eighty-five percent of graduates speak English. Smaller pools (less than 5% of the population) also speak German, French, Spanish and Italian.
8. The main geographic hubs for IT operations are Prague, Brno and Ostrava. Prague, however, has a low level of unemployment and a high cost of living. This has contributed to raising costs in the capital while forcing the government to divert financial support to more deprived areas. Labor inflation is 13% per year, and annual attrition rates are 14% per year.
9. Brno has long been a traditional area for offshore operations, with strong levels of competition for IT skills and consequent raising costs. The opportunities to set up new centers are limited to Ostrava.

Dr Ioannis Nikolaou, Work & Organizational Psychologist, Associate Professor in Organisational Behaviour and Director of the MSc in Human Resources Management at Athens University of Economics and Business, reminds us not to take the lack of soft skills lightly, especially in this space: Soft skills have now become the most highly sought employee characteristic between employers in Europe. The importance of inter-personal skills, such as teamwork, adaptability, resilience, flexibility and decision-making have radically increased in the dawn of the 21st century, even among professions, such as software developers, mechanical and electrical engineers and data scientists, where in the past soft skills were only considered a nice-to-have skill.

Automobile

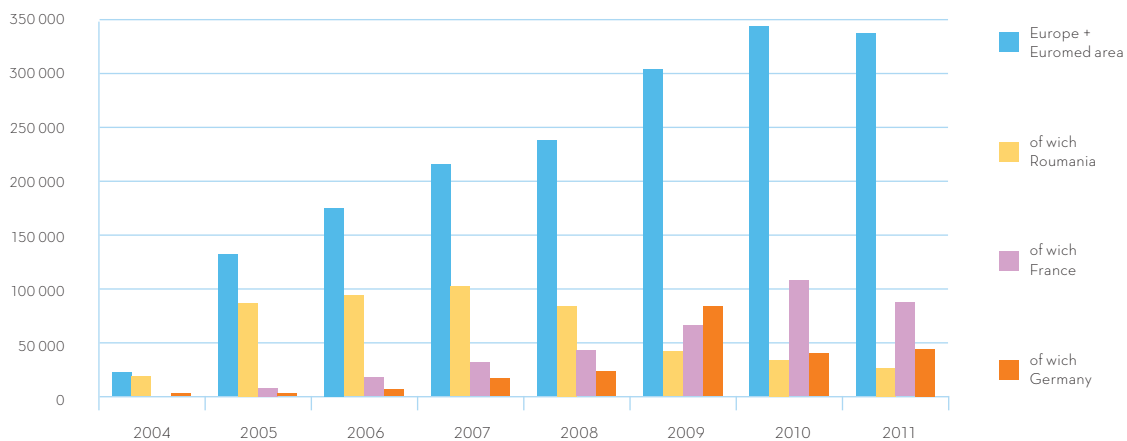
Eastern Europe has turned into major automobile production centers competing with their Western counterparts in a regional market that had gone flat. Although the initial intention may not necessarily have been to close plants in the West, the reality is that European production had shifted eastwards.

The key hindrances about this industry in CEE is excessive bureaucracy and poor infrastructure. Most CEE companies believe that being complacent about the fact that further growth and economic developments will be automatic is not the right way to approach this industry.

Box 1: Romania, where the micro-economic shapes the macro-economic

The example of Romania (and Renault's Dacia subsidiary there) is noteworthy, since it partially illustrates a process that is ongoing in Eastern Europe. When Renault first launched its acquisition of Dacia in 1998 (an action completed in 1999), the goal was to have a tool enabling the company to design a car that would be "modern, robust and affordable at \$6,000" (Jullien, Lung, Midler, 2013, p.9). The Logan project satisfied this objective, as did the creation of authentic entry-range vehicles such as the Logan MCV (2006), Logan pick-Up (2007), Sandero (2008) and Duster (2010), followed by the Lodgy and Dokker (2012, which were made in Morocco (in Tangiers)). Dacia's success turned Mioveni-Pitesti into a major automaking site. Initial plans targeted other CEECs but sales never really took off. Indeed, besides from the countries' domestic markets, most sales were in Western Europe and North Africa.

Dacia sales (in units)

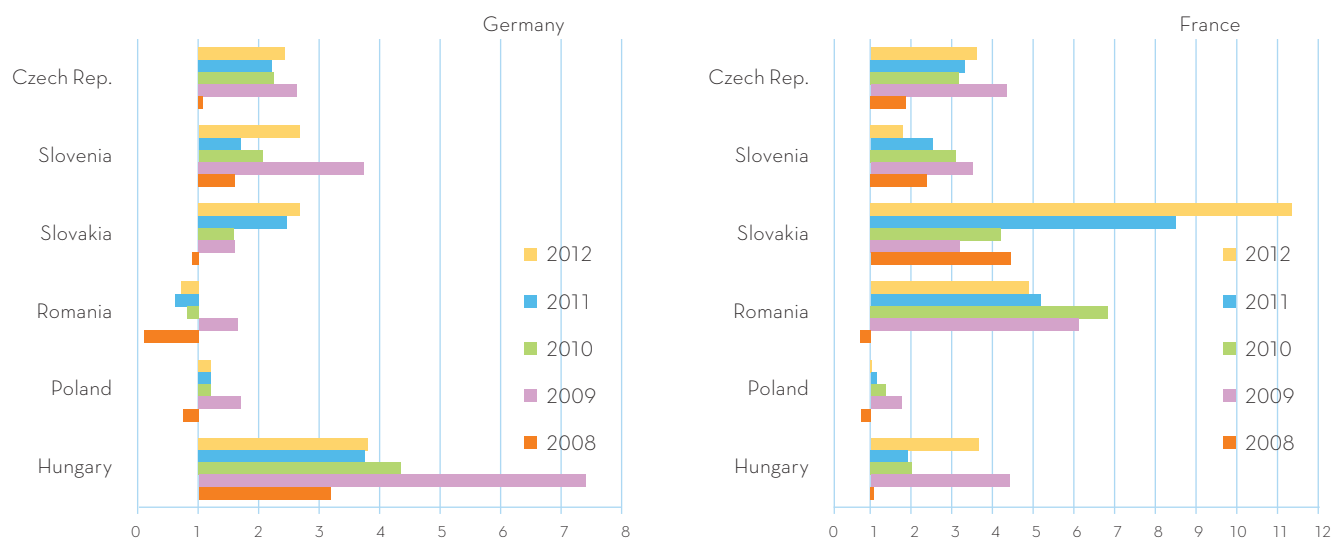


Massive growth in Automobile output over the past years

2012 output totals, variation over 2000-2012 (units, %)

COUNTRIES	2000-2012	Production in 2012 (units)
Germany	2,2%	5,649,269
Spain	-34,7%	1,979,179
France	-41,2%	1,967,765
UK	-13,1%	1,576,945
Czech Republic	158,8%	1,178,938
Turkey	148,8%	1,072,339
Slovakia	395,1%	900,000
Italy	-61,4%	671,768
Poland	28,3%	647,803
Belgium	-47,6%	541,874
Romania	332,1%	337,765
Hungary	58,5%	217,840
Portugal	-33,7%	163,561
Sweden	-46,0%	162,814
Austria	1,2%	142,662
Slovenia	6,5%	130,949
Netherlands	-81,0%	50,862
Serbia	-13,4%	11,032
Finland	-92,5%	2 900
Total Europe	-10,3%	17, 406, 265

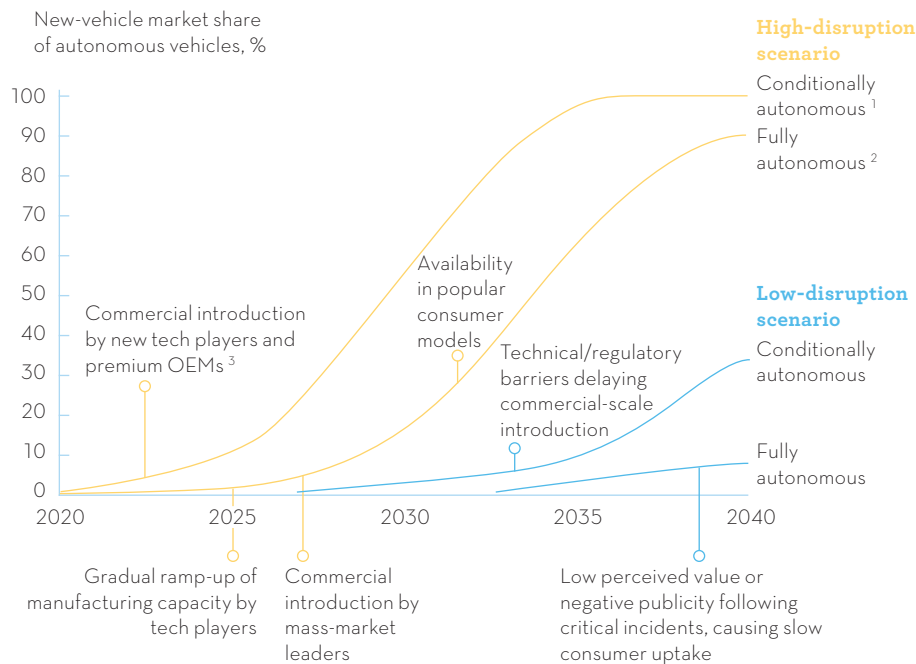
Bilateral motor vehicle cover rate: sample of Eastern European countries vis-à-vis Germany and France



Key Industry Disrupters which will affect skills:

- **Driven by shared mobility, connectivity services, and feature upgrades, new business models could expand automotive revenue pools by about 30 percent, adding up to \$1.5 trillion.**
- **Despite a shift toward shared mobility, vehicle unit sales will continue to grow, but likely at a lower rate of about 2 percent per year.**
- **City type will replace country or region as the most relevant segmentation dimension that determines mobility behavior and, thus, the speed and scope of the automotive revolution.**
- **Once technological and regulatory issues have been resolved, up to 15 percent of new cars sold in 2030 could be fully autonomous.**
- **New market entrants are expected to target initially only specific, economically attractive segments and activities along the value chain before potentially exploring further fields.**

How many new cars may be fully autonomous by 2030?



Factors in disruption scenarios:

Regulatory challenge,
 Safe, reliable technical solutions,
 Consumer acceptance, willingness to pay

High disruption:

Fast,
 Comprehensive,
 Enthusiastic

Low disruption:

Gradual,
 Incomplete,
 Limited

¹ Conditionally autonomous car: the driver may take occasional control

² Fully autonomous car: the vehicle is in full control.

³ Original-equipment manufacturers.

What are the top skills the Automobile industry is currently recruiting for?

The top 10 'critical now' jobs

1. Design Engineer
2. Production Engineer
3. Buyer
4. Senior Design Engineer/Lead
5. Maintenance Technician
6. Programme Manager
7. Quality Operations Engineer
8. Manufacturing Team Leader
9. Programme Engineer
10. Quality Operations Technician

The top 10 'future' jobs

1. Design Engineer
2. Production Engineer
3. Maintenance Technician
4. Manufacturing Technician
5. Tool Maker
6. Manufacturing Team Leader
7. Maintenance Engineer
8. Supplier Quality Engineer
9. Design and Development Technician
10. Buyer

There is also an increased demand in the number of specialist skills required due to technological advancements in areas such as engineering, mechatronics and robotics, etc. This need is borne out of the lack of currently qualified and experienced professional engineers available in the market place to perform these types of role.

Success in 2030 will require automotive players to shift to a continuous process of anticipating new market trends, exploring alternatives and complements to the traditional business model, and exploring new mobility business models and their economic and consumer viability. This will require a sophisticated degree of scenario planning and agility to identify and scale new attractive business models.

Aviation Engineering

A recent ICAO report said that in the next 20 years, airlines would have to add 25,000 new aircrafts to keep up with rising air passenger demand. But a lack of skilled engineers to maintain these aircraft is not only threatening airline profits, but also aircraft safety. Impending retirements, a lack of newly trained engineers and advanced skill requirements in this Industry only make for a challenging forecast that will only get worse unless drastic changes happen.

New technology could be the key to this. Already a big hit in the consumer world, augmented reality has the potential to help bridge the skilled engineer gap, simplify maintenance processes and offer expert guidance to newly qualified technicians from hundreds of miles away. The rising passenger demand for air travel has resulted in a global expansion for airlines, but maintenance expertise is struggling to keep up.

It takes a lag of some 5 years to get a B1 or B2 EASA license as a qualified aircraft engineer. In many countries, there simply is no training infrastructure yet to drive this.

While General managers are aware of the growing problems caused by shortages, functional leaders seem to be less aware. Low-cost and regional airlines in general don't seem to offer in-house training, while their more established rivals are keeping their engineering teams up to speed.

The biggest issue is finding engineers who are committed to engineering long-term as most engineers feel the only career path is now through management and growing their commercial and financial or business skill sets. Very few, if any, aspire to vice-president of engineering roles and instead move into sales orientated roles leaving a huge gap in senior management for engineering.

The competencies of the executive engineering roles are also changing. To the deep functional skills must be added commercial acumen and strategic thinking. An overwhelming majority of survey respondents say that future leaders will need high levels of business understanding, with 65% strongly agreeing that these skills would be needed and 27% agreeing "a little". Across the board, a third of the respondents point to shortages and difficulties in recruiting top talent.

Aircraft manufacturers, airlines, training equipment manufacturers, training delivery organizations, regulatory agencies and educational institutions need to step up to meet the increasing need to train and certify pilots and technicians."

After Asia Pacific, North America was second as far as new aircraft technician staff needed with 113,000, followed by Europe (+101,000), Middle East (+66,000), Latin America (+47,000) and Africa and Russia/CIS (both +22,000).⁴

Conclusions

Invest in Employability to boost Youth Employment, Business Growth and Competitiveness

Florin Godean, Country Manager Adecco Romania observes that Adecco's first EE focused quarterly initiative clearly shows that the things we learn at school become irrelevant under the rapid changes brought by the 4th Industrial Revolution. In Romania, we will soon need re-skilling, not every 20 years, as it has been until now, but every 5 years. This means that employees have to take part in new training courses "on the go", while they activate on the labor market, if they want to remain relevant to future job posts. At the same time, employers have to invest in such training courses if they want to keep their employees and to be able to grow their business in the future. Without decisive steps towards reskilling, Romania risks losing investors and high salary employment opportunities.

Stefano Longo, Country Manager Adecco Hungary, emphasizes that the report brings our attention to the rapidly changing labour market needs, what is felt in day to day lives in Hungary. The time of the life long lasting jobs is over and instead of "only" one profession other skills need to be picked by the new generations as the ability to develop, to learn new things, to be able to start in a different field. This is not only true in case of white collar professions, but also the blue ones. The need of the labour market should drive the scope of the educational system not vice versa. At the moment we need to focus on to make popular dual trainings and skilled trainings offered by employers in the group of youth. Adecco Hungary, as one of the biggest staffing companies takes this as its main challenges creating real added value for the upcoming generations and Hungary.

Today, globally, some 73 million youngsters are without jobs, while 40% of employers say they cannot find people with the right skills, TAG attempts here to address the misalignment that spells a lack of prospects for millions of people and subpar growth for all. In too many countries, the skills gap is the result of a mismatch of the education young people receive at school and the needs of employers.

With increasing digitization and automation of labour, pressure is mounting for young people looking to enter a labour market. On the upside, research also shows that technology will lead to the creation of millions of new jobs, provided workers have the right skills to fill them. With demographic changes occurring in many societies, the issue of skills is relevant for workers of all ages.

TAG is always available for more enquiries on this important topic of Skills and hopes to be in touch with all of this report's readers for feedback, new & continued partnership and forward thinking mutual growth.

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Special Thanks

Professor Partners:

Dr Ioannis Nikolaou

Dr Ioannis Nikolaou is a Work & Organizational Psychologist, Associate Professor in Organisational Behaviour and Director of the MSc in Human Resources Management at Athens University of Economics and Business.

Dr Nikolaou has gained wide working experience as an Assistant Manager for PricewaterhouseCoopers, Greece at the department of Global Human Resources Solutions and as Head of the Training Department at Egnatia Bank before starting his academic career. He has written the books "Organizational Psychology & Behaviour" and "Managing Human Capital - Greek Case Studies" (in Greek) and co-edited with Janneke Oostrom the book Employee Recruitment, Selection, and Assessment.

Contemporary Issues for Theory and Practice. (Routledge/Psychology Press).

He has also published in international peer-reviewed academic journals, while his research interests lay in the field of Organisational Behaviour and Human Resources Management, and more specifically in employee recruitment, selection and assessment.

He teaches courses in undergraduate (Organisational Psychology and Personal Skills Development) and post-graduate level (Employee Selection, Performance Appraisal and Development, Organisational Behaviour & Human Resources Management, Personal Skills Development) at Athens University of Economics and Business, while maintaining active links with the industry through Human Resource consulting projects (National Bank of Greece, Emporiki Bank, Kantor Management Consulting, Attika Bank) and executive training. His most recent collaborations in executive training and management consulting include companies, such as Metro, OTE Academy, EFG Eurobank, Ethniki Asfalistik, Misko-Barilla, Lion Hellas, Pfizer, SEAT, Infote, Dodoni, OSE, Metaxas Diagnostics, Intracom, AB Vasilopoulos, etc.

Affiliated university

The Athens University of Economics and Business (AUEB) was founded in 1920 under the name of Athens School of Commercial Studies. It was renamed in 1926 as the Athens School of Economics and Business, a name that was retained until 1989 when it assumed its present name, the Athens University of Economics and Business.[1]

It is the oldest university in Greece in the fields of Economics and Business, its roots tracing to the establishment of a Merchant Academy in Athens. Up to 1955 the school offered only one degree in the general area of economics and commerce.

In 1955 the duration of study at the School is increased from three to four years and two cycles of study leading to two separate degrees: one in economics and the other in business administration. In 1984 the school was divided into three departments, namely the Department of Economics, the Department of Business Administration and the Department of Statistics and Business Informatics, the latter renamed to the Informatics Department in 1995.

In 1989, the university expanded to six departments.

From 1999 onwards, the university developed even further and nowadays it includes eight academic departments, offering eight undergraduate degrees, 28 master's degrees and an equivalent number of doctoral programs.



Prof Krzysztof Martyniak

A sociologist, graduate of the Faculty of Social Sciences of the University of Gdańsk and doctoral studies at the University of Warsaw. A member of the team of the Social Change Theory Laboratory and the Solidarity and Social Movement Research Center at the Institute of Sociology of the University of Warsaw. He specializes in social analyzes, evaluations, public policy research, and urban sociology. Participant and co-author of many prestigious research projects. Lecturer, trainer, commentator on social phenomena for nationwide and regional media (including TVP1, TVP2, TVP Info, TVP Warszawa, PR 4).

Expert and advisor on social consultations, as well as the creation of strategic documents in local government units (strategies for solving social problems, programs for the development of foster care, preventing domestic violence and family support). He worked, among others in the ESF Regional Center in Warsaw and the Mazovian Voivodship Office.

He was a street worker, he ran a community club in the Praga district of Warsaw. A graduate of the post-graduate "Course for lecturers and activists - Human Rights and Freedom" of the Helsinki Foundation for Human Rights. President of the Board of the Mazovian Foundation for the Development of Innovation and the Foundation of Innovation and Development. From 2014, the owner of the EGO DIRECTION company.

Affiliated University

University of Warsaw (Uniwersytet Warszawski) The University of Warsaw (Polish: Uniwersytet Warszawski, Latin: Universitas Varsoviensis), established in 1816, is the largest university in Poland. It employs over 6,000 staff including over 3,100 academic educators.

It provides graduate courses for 53,000 students (on top of over 9,200 postgraduate and doctoral candidates). The University offers some 37 different fields of study, 18 faculties and over 100 specializations in Humanities, technical as well as Natural Sciences.

Today, the University of Warsaw consists of 126 buildings and educational complexes with over 18 faculties: biology, chemistry, journalism and political science, philosophy and sociology, physics, geography and regional studies, geology, history, applied linguistics and Slavic philology, economics, philology, pedagogy, Polish language, law and public administration, psychology, applied social sciences, management and mathematics, computer science and mechanics. The University of Warsaw is one of the top Polish universities.

It was ranked by *Perspektywy* magazine as best Polish university in 2010, 2011, 2014 and 2016. On the list of 100 best European universities compiled by University Web Ranking, the University of Warsaw was placed as 61st. QS World University Rankings positioned the University of Warsaw as the best higher level institution among the world's top 400.



Dr Cristian Marinaș

Dr Cristian Marinaș is a professor at the Faculty of Management and since 2004 he coordinates the Master of Human Resource Management (MASTER_MRU) program of the Academy of Economic Studies in Bucharest.

Cristian Marinaș is also a director of postgraduate studies: Human Resources Management, Career Development and Development and Human Resources Training. His professional experience in human resources brings together both didactic and practical work as a consultant and trainer for many organizations.

Cristian Marinaș is certified in the use of HOGAN (HPI, MVPI & HDS) and Human Synergistics (LSI1, LSI2, GSI & OCI) tools. Over time he has been a member or coordinator of several scientific and/or European research projects. Consultancy in the field of European funding is another area of expertise of Cristian Marinaș. The most relevant project that he coordinated was the project Practice in the Human Resources Field - PREUS, funded by the European Social Fund, a project that was designated within the Good Practices in HR, best practice projects in the field of human resources. He also coordinated an another important HR project Job design and analysis in The Bucharest University of Economic Studies – FP ASE. Cristian Marinaș has published 16 books and over 55 specialized articles.

Affiliated university

The Bucharest University of Economic Studies (Romanian: Academia de Studii Economice din București, abbreviated ASE) is a public university in Bucharest, Romania. Founded in 1913, it is now the leader of Romanian higher education institutions in the field of Economic Sciences and Public Administration. The Bucharest University of Economic Studies is classified as an intensive research university by the Romanian Ministry of Education, hosting 23 research centers acknowledged and endorsed by the National Council for Scientific Research in Higher Education.

The Bucharest University of Economic Studies has over 22,000 students (undergraduate and graduate levels) in twelve faculties, which organize study programs and scientific research in the fields of Economic Sciences, Administrative Sciences, Sociology and Humanities. Students are offered the opportunity to pursue a full academic path by attending study programs in Romanian, English, French or German, as follows: 24 Bachelor's programs, more than 80 Master's programs, Doctoral studies in 10 fields, and more than 145 postgraduate continuing education programs. In addition, ASE organizes a preparatory year of Romanian language for foreign citizens, continuing training programs, teacher training programs, postgraduate programs, as well as MBA and EMBA study programs. At regional level, ASE undertakes the complex role of Central and South-Eastern European regional hub in education and advanced scientific research.

At international level, ASE is ranked 151-200 in Top Shanghai 2017 in the field of Economics - the best position held by a Romanian university in Shanghai Ranking's Global Ranking of Academic Subjects 2017. Moreover, ASE is the Romanian university with the best employer reputation, according to QS World University Rankings 2018, which is confirmed by ASE's own alumni surveys, according to which 81.35% of graduates find employment within 3 months from finishing their studies.



Dr. Robert Kaše

Dr. Robert Kaše is an Associate Professor of Management at the Faculty of Economics of the University of Ljubljana, Department of Management and Organization, where he teaches various courses at the undergraduate, graduate, MBA and PhD level.

His current research interests include social networks (relationships at work), strategic and international HRM, careers, and teamwork/emergence. His doctoral dissertation was among EDAMBA's distinguished papers and won the Emerald/EFMD Outstanding Doctoral Research Award in the HRM category.

His work has been published in journals such as the Organization Science, the Human Resource Management, the International

Journal of Human Resource Management. He is past Associate Editor of the Human Resource Management (Wiley) and on advisory/editorial boards of Journal of Organizational Effectiveness: People and Performance (Emerald), Human Resource Management Review (Elsevier) and Economic & Business Review. He is frequently involved in organization of academic conferences, workshops and tracks.

Supporting interaction between research and practice he is an active member of the Slovenian HR Association, regular speaker at professional conferences, lecturer at executive trainings, and time-permitting works on applied projects, where he disseminates knowledge and learns from interesting organizations and talents.

Affiliated University

The University of Ljubljana (Slovenian Univerza v Ljubljani , Latin Universitas Labacensis) in Ljubljana (Ljubljana) is the oldest, largest and internationally best-rated university in Slovenia . It is ranked among the top 500 or top three percent of the world's top universities by the Shanghai ranking. With over 63,000 enrolled students and doctoral students, it is one of the largest universities in Europe. The University of Ljubljana was founded in 1919 in the center of Ljubljana.

As early as the 17th century, humanist and theological academies existed in Ljubljana, and in 1810 under French rule a first university was founded, but it had only a short existence. Today it employs about 3,500 professors and scientific assistants as well as nearly 900 technical and administrative staff. Until the founding of the universities in Maribor (University of Maribor - 1978) and in Koper (University of Primorska - 2001), she remained for almost 50 years the only university in Slovenia The role of the University Library is exercised by the Slovenian National and University Library.



University of Ljubljana

Partner Universities

Adam Mickiewicz University in Poznań (UAM)

The university was ceremonially opened on May 7, 1919 (the 400th anniversary of the foundation of Poznań's Lubrański Academy). For the first 20 years it educated students in law, economy, medicine, humanities, mathematics, natural sciences, agriculture and forestry.

In 1920 famous sociologist Florian Znaniecki founded the first Polish department of sociology at the university, one of the first such departments in Europe. In the same period of the university's history, botanist Józef Paczoski founded the world's first institute of phytosociology. The university has been frequently listed as a top three university in the country.



Academia de Studii Economice din București (ASE)

The Bucharest University of Economic Studies (Romanian: Academia de Studii Economice din București, abbreviated ASE) is a public university in Bucharest, Romania. Founded in 1913 as the Academy of Higher-level Commercial and Industrial Studies (Academia de Înalte Studii Comerciale și Industriale (AISCI)) it has become one of the largest economic higher education institutes in both Romania and South-Eastern Europe. The Bucharest Academy of Economic Studies is classified as an advanced research and education university by the Ministry of Education. It is one of the five members of the Universitaria Consortium (the group of elite Romanian universities)

The Bucharest University of Economic Studies has 22,684 students (undergraduate and graduate levels) in eleven faculties.

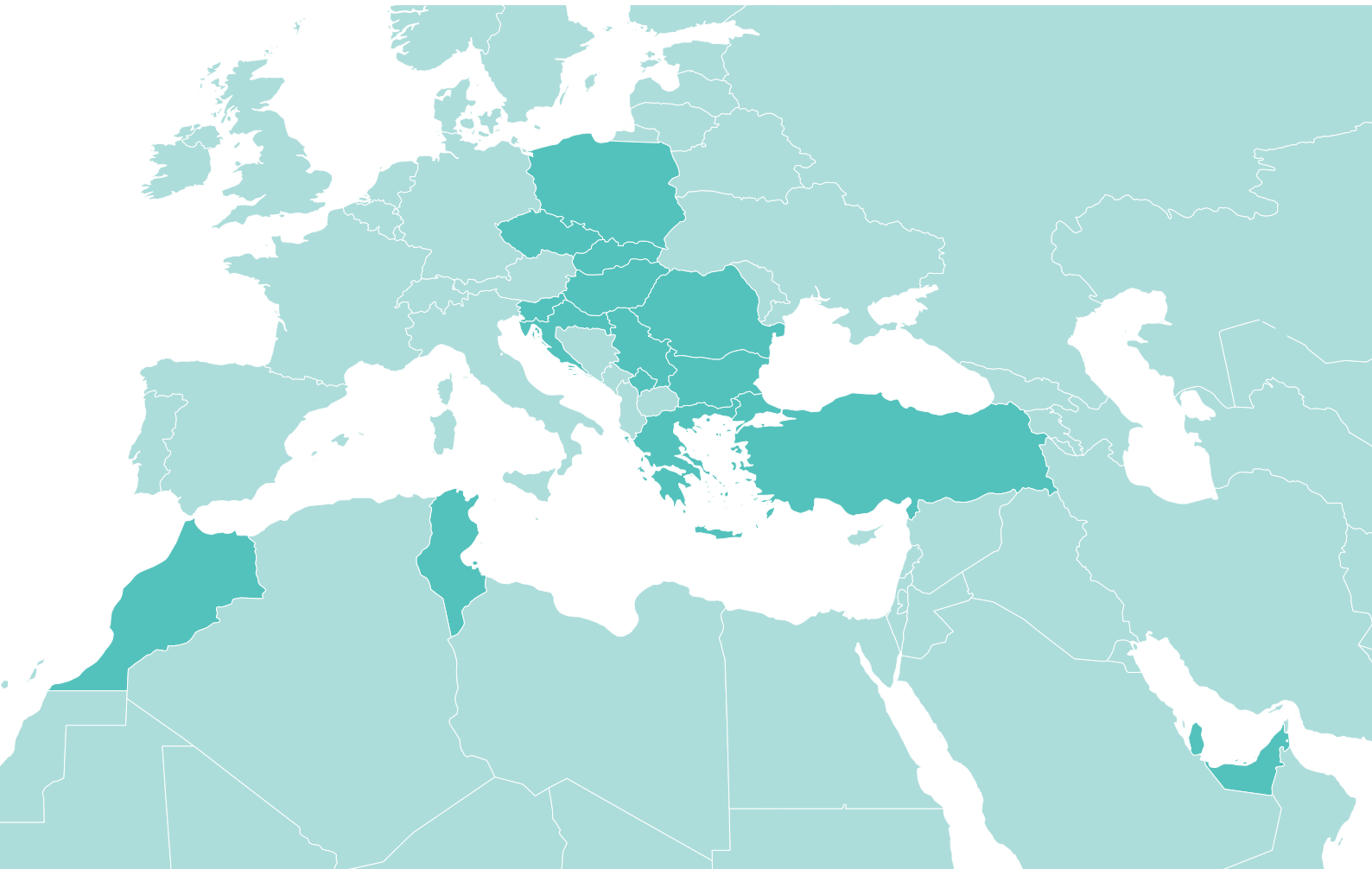
The university has positioned itself as a research institution, hosting 13 centers of research acknowledged and endorsed by the National Council of Scientific Research in Higher Education.

A notable presence inside ASE is the Business Information Technology department (Romanian: Informatică Economică) which is an entity that promotes an educational philosophy based on combining economics and software development as a way of creating experts suitable for the Information Age.



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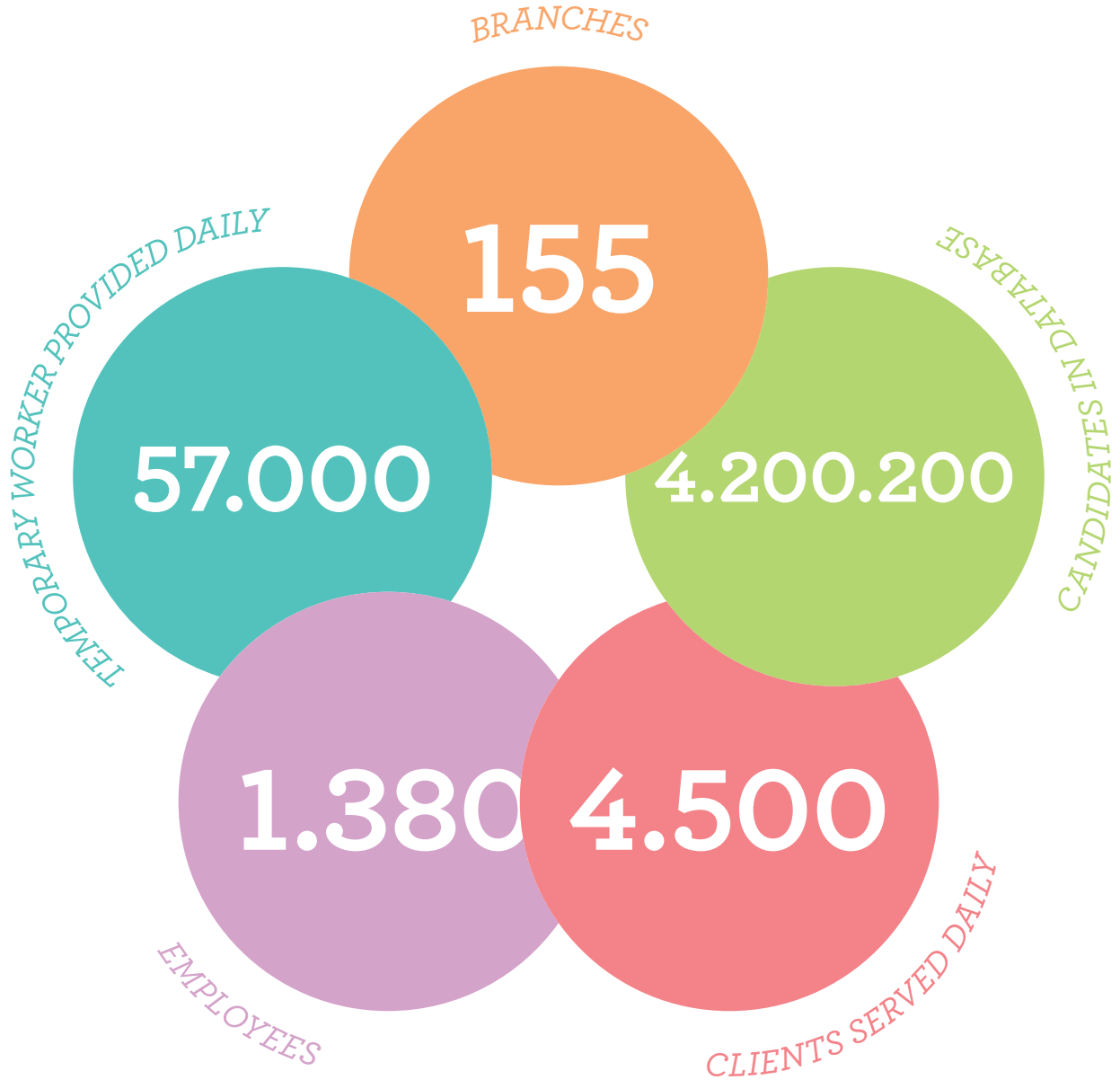


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