



Bulgarian CEO Survey as part of PwC's 22nd Annual Global CEO Survey

Changes in the Economic Environment – Reality Check



Foreword

“**Capturing the insights** of the CEOs of leading organizations on the Bulgarian market as part of PwC’s CEO Annual Global Survey has already become a tradition. This is the fourth consecutive survey that we have conducted with a special focus on Bulgaria.

I extend my appreciation to all respondents who have made this possible and shared their thoughts, expertise and concerns. We value your opinion and insight.

Several major themes have emerged during the discussions we had with business leaders:

- ✓ Caution about the pace of the economic growth and expectations for a slowdown bring sobriety in CEOs’ views on growth perspectives.
- ✓ Concerns about the global spread of nationalistic and populist trends bring uncertainty and shift expansion and investment plans towards markets closer to home.
- ✓ Workforce demographics and availability of key skills, including such needed to bridge the gap between data and information in the organisations, continue to plague businesses.
- ✓ Disruptive technologies (such as artificial intelligence) are climbing higher on the agenda to enable utilisation of big data and to offset the shortage of skilled resources in the organisation.

All these topics cannot be solved by a single organisation and require a broader collaborative platform to exchange ideas and work on solutions. Hence, I encourage you to read the results of the survey as a source of inspiration for the way you address your own organisation’s topics.

The voice of the Bulgarian CEOs matters and can shape the environment all of us operate in the coming months and years.

Bojidar Neytchev

Senior Partner, PwC CEE



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Reality Check: Economic Growth Slowdown

35%

of Bulgarian CEOs believe that global economic growth will decline over the next 12 months

60%

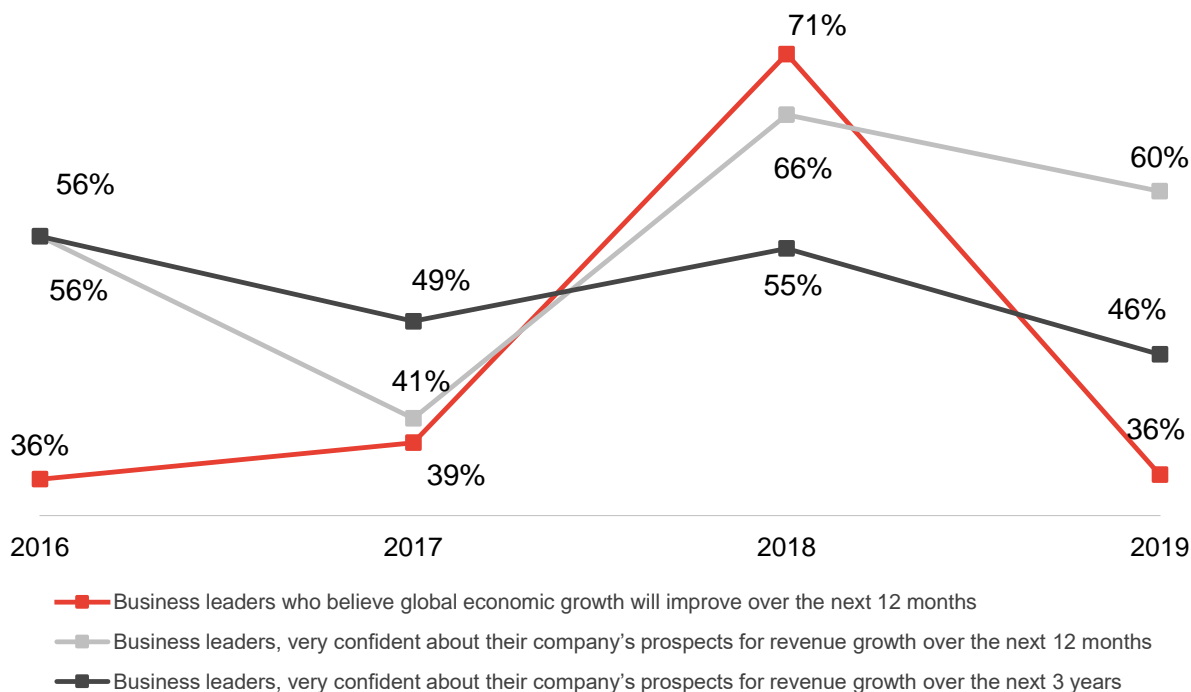
of Bulgarian business leaders are very confident in their company's revenue growth prospects for the next year

Caution in the air

The percentage of Bulgarian CEOs with optimistic expectations for global economic growth during 2019 has decreased by half, while the level of confidence in their own organisations' growth prospects has remained high

Figure 1a Q: Do you believe global economic growth will improve, stay the same, or decline over the next 12 months?

Q: How confident are you about your organisation's prospects for revenue growth over the next 12 months?
 Q: How confident are you about your organisation's prospects for revenue growth over the next 3 years?



1) IMF, World Economic Outlook Update, January 2019: A Weakening Global Expansion; January 21, 2019

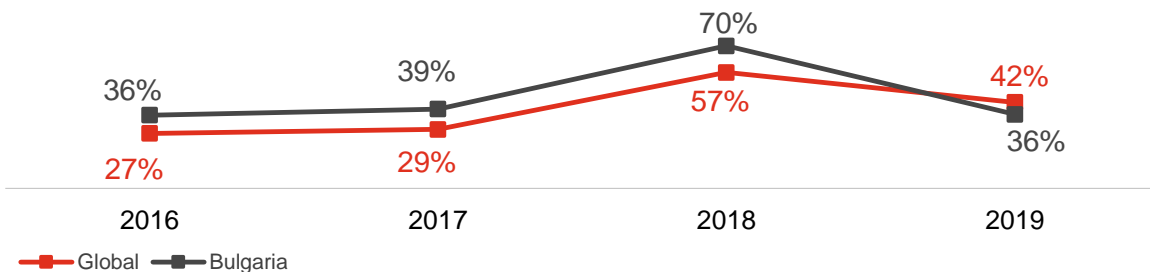
After last year's surge in optimism, this year's CEO survey results depict a significant shift in the expectations of Bulgarian CEOs and a sobering view on economic growth. It seems the time has come for a reality check.

In 2018 71% of the Bulgarian survey participants expected that global economic growth will improve in the next 12 months. This year only 36% express optimistic view on the economic outlook for the coming year, while 35% believe it will decline. This is a major drop, considering the fact that last year Bulgarian respondents were among the most optimistic ones about the development of the global economic climate (Figure 1a provides details on the prevailing sentiment about the improvement of economic growth over the span of 2016 to 2019).

For the first time ever Bulgarian CEOs are more cautious about the coming months when compared to their global and CEE counterparts (42% on global level and 38% on CEE level are confident about the economic growth) (Figure 1b). This sentiment is aligned with institutional economic analyses and outlooks for an expected slowdown in economic growth in 2019-2020¹.

Still, despite the downward plunge in optimism, expressed by all CEOs, the "improve" answers everywhere outnumber the "decline" ones (in Bulgaria 35% of the respondents voted "decline" vs. 29% globally and 31% in CEE).

Figure 1b Percentage of Bulgarian vs global believers in positive economic outlook in the coming year, compared over the last 4 years

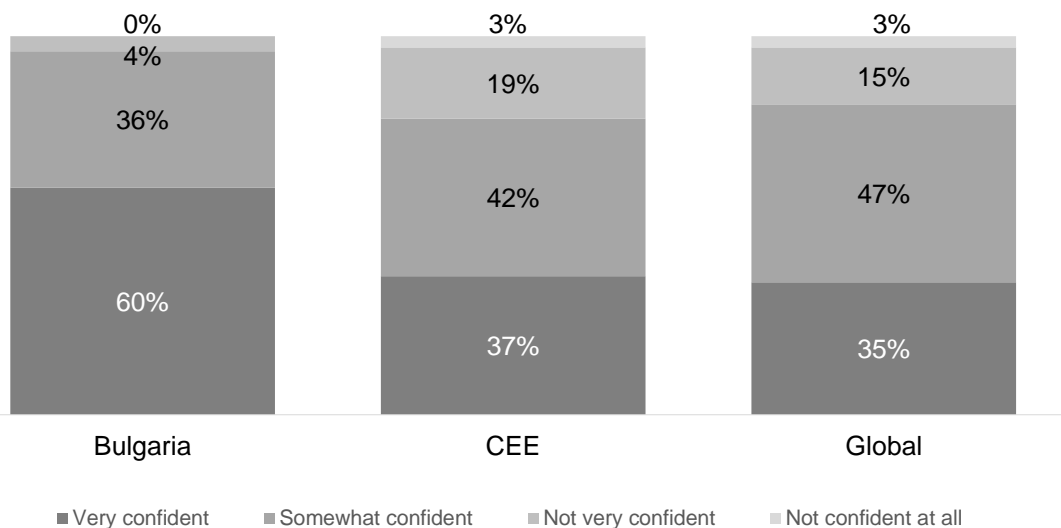


Caution in the air

Globally 35% of CEOs are very confident in the short-term (12 months) revenue growth prospects of their organisations, while 36% are very confident in the medium-term of 3 years (Figure 1c). The downward change in short-term confidence on a year-on-year basis (from 42% to 35%) follows the downward change in the confidence in the overall economic growth (from 57% to 42%).

In comparison, the confidence of Bulgarian CEOs in their organisation's capabilities to achieve revenue growth in the short-term is curbed only marginally (from 66% to 60% in 2019) and is high above the levels expressed by their global and CEE counterparts. None of the Bulgarian CEOs responded that they have no confidence at all in their organization's growth prospects in the coming 12 months, while both globally and in CEE 3% of the respondents were deeply concerned about their companies' revenue prospects (Figure 1d).

Figure 1d Q: How confident are you about your organisation's prospects for revenue growth over the next 12 months?

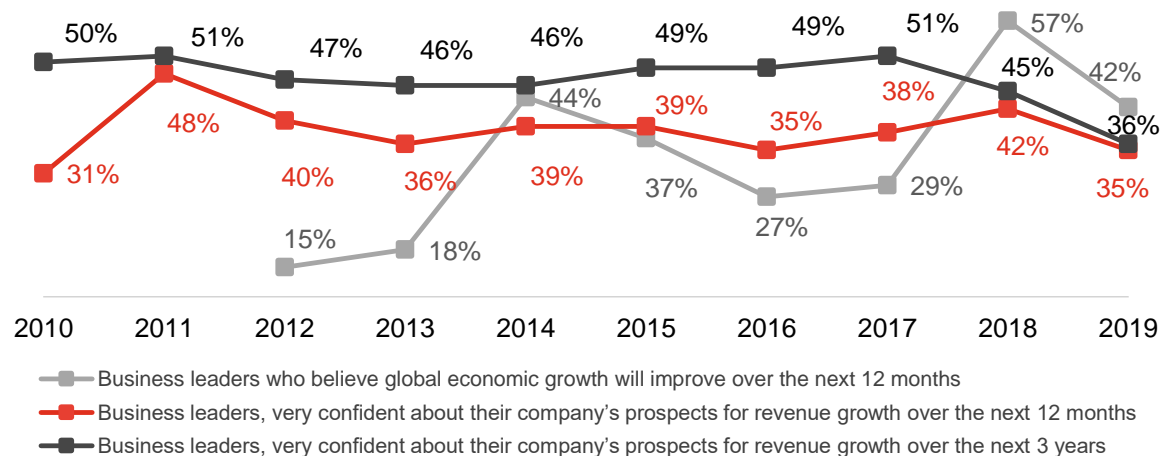


Globally the confidence of CEOs in the short-term capacity of their organisations to achieve revenue growth is curbed less than the expectations in global economic growth

Figure 1c

Q: How confident are you about your organisation's prospects for revenue growth over the next 12 months?

Q: How confident are you about your organisation's prospects for revenue growth over the next 12 months?
Q: How confident are you about your organisation's prospects for revenue growth over the next 3 years?



Such conviction of Bulgarian CEOs in their organisations' expected performance in light of the somewhat pessimistic expectations for economic growth can be attributed either to anticipated time lag – the CEOs expecting that negative economic trends will affect the Bulgarian market later than bigger economies – or to them having considered already all possible scenarios and mitigation steps. Whichever the explanation, they seem to be looking with unperturbed confidence for the coming months.

Looking ahead in the next 3 years, the expectations for organisations' prospects for revenue growth are not as exuberant – the very confident CEOs in Bulgaria in the revenue growth of their companies in the mid-term are 46% vs 36% on global level and 26% on CEE level.



As a general trend over the last couple of years, globally CEOs were less certain about short-term success of their organisations and were counting more on the mid-term growth potential. Interestingly, this year the global share of very confident CEOs in their organisations' growth prospects in the short-term and the mid-term is almost the same – 35% and 36% respectively.

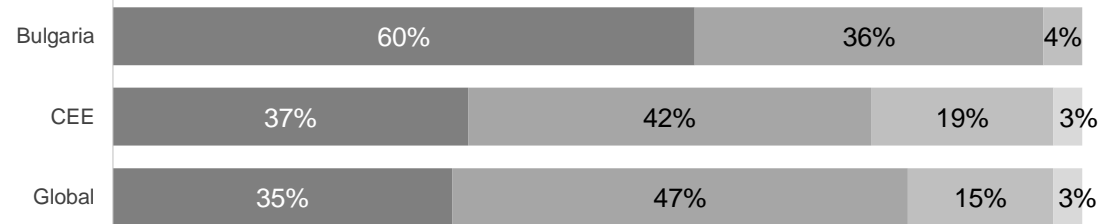
In comparison, this year in Bulgaria and across CEE the short-term belief in the achievement of revenue growth is higher than the mid-term one (Figure 2). Contrary to the global CEOs, for the last 2 years Bulgarian business leaders have been more inclined to put faith in the short-term results of their companies than in the mid-term ones. It may be that most CEOs believe that further operational improvements can be achieved within their organisations to boost growth and profitability. Indeed, the survey's results support such a conclusion.

Bulgarian CEOs are more optimistic about the short-term and mid-term revenue growth prospects of their companies than their peers globally and in CEE

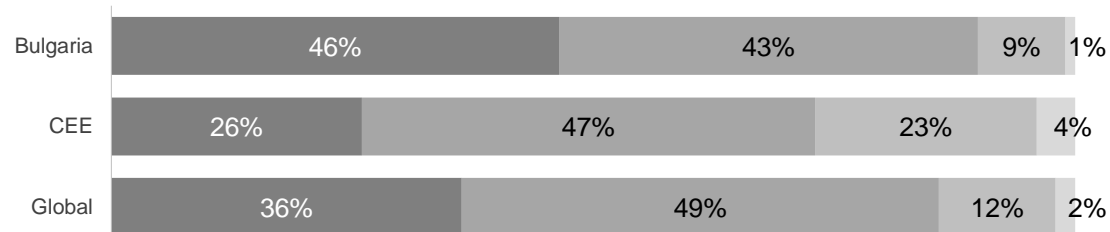
Figure 2

Q: How confident are you about your organisation's prospects for revenue growth over the next 12 months / 3 years?

Short-term prospects



Mid-term prospects



■ Very confident ■ Somewhat confident ■ Not very confident ■ Not confident at all



Getting fitter



Bulgarian CEOs plan to achieve short-term growth mainly by realizing operational efficiencies (82% of the respondents) and organic growth (76%). Launching a new service or product is also an important driver for 59% of them. (Figure 3)

The top 3 drivers are all internal for the organisations and show that revenue growth is expected to come from within. Any external reasons for growth – such as strategic alliances or mergers and acquisitions – are not the obvious choice for Bulgarian CEOs.

Attracting the right talent from the market is another internalized growth driver. Despite the somewhat curbed confidence in the revenue growth perspectives in the coming months and in the next 3 years, the willingness of organisations to increase headcount is not significantly affected (Figure 4). Similar to last year, more than half of the CEOs globally and in CEE are planning increases in headcount, while 42% of the Bulgarian business leaders plan to hire new people in 2019. The results for Bulgaria show a significant boost compared to the numbers from last year, when only 18% of the CEOs were planning headcount increase.

Our discussions with CEOs show that plans are not purely about boosting workforce numbers, but more about finding and recruiting the right talent that would bring new and complementary skillset and mindset to the organisations, helping them to enhance and sustain their competitive advantage.

There is a certain misalignment between Bulgarian CEOs' higher expectations for revenue growth and lower readiness to hire in comparison with their peers. They may expect this growth to be achieved via advancement in deployed technologies, or they may plan for reskilling and retraining the existing workforce in order to address the new reality and needs. Or simply Bulgarian CEOs recognise the challenge of hiring in light of aging workforce and scarcity of skilled personnel – and tailor their plans accordingly.

Industry Insight

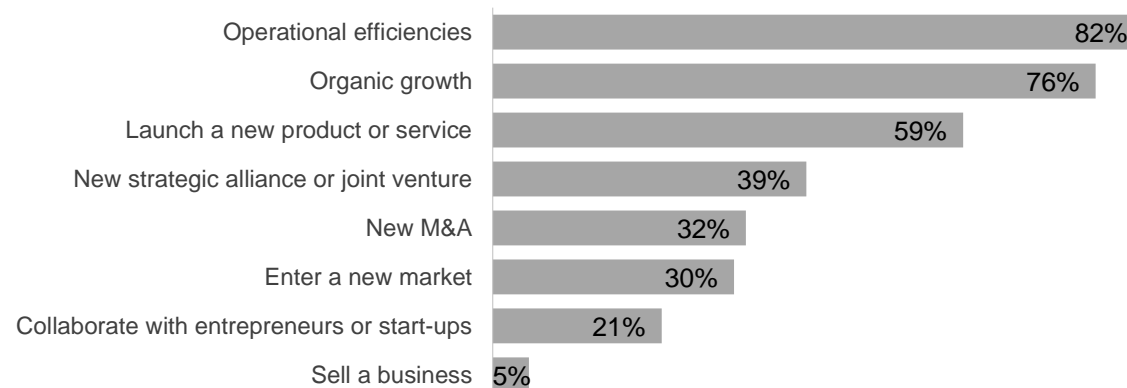
The most willing to hire new talent in 2019 is the Industrial, Manufacturing & Automotive (IMA) sector (50% of IMA CEOs) and the Technology, Media & Telecommunications (TMT) sector (45% of TMT participants), followed closely by the Financial Services (FS) sector (43% of FS CEOs).



Bulgarian CEOs are looking at operational excellence as the main driver of short-term growth

Figure 3

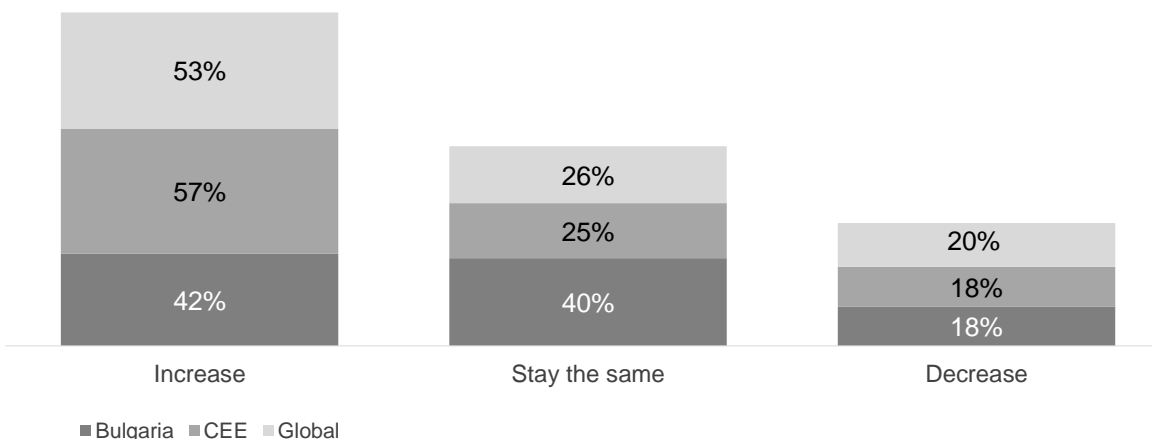
Q: Which of the following activities, if any, are you planning in the next 12 months in order to drive revenue growth?

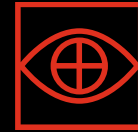


Bulgarian CEOs' willingness to increase personnel is up from last year but below global and CEE levels

Figure 4

Q: Do you expect headcount at your organisation to increase, decrease or stay the same over the next 12 months?





Financial Services Industry Insight

Financial Services CEOs lay out their mid-term plans for revenue growth, where the main driver in the next 3 years is associated with deploying emerging technologies (for 73% of FS CEOs in Bulgaria and 68% globally), closely followed by focus on people strategy (for 64% in Bulgaria and 42% globally) and investing in core capabilities and reducing expense elsewhere (for 64% in Bulgaria and 39% globally).

Clearly utilisation of technologies is considered key for success in the Financial Services industry, as well as is underpinning the core financial capabilities. FS CEOs are some of the frontrunners when it comes to using the latest technologies and are not shy of implementing artificial intelligence solutions.

Yet, attracting the right people continues to be of concern in Bulgaria – quite understandably, as this topic is becoming more and more an impediment for future growth.

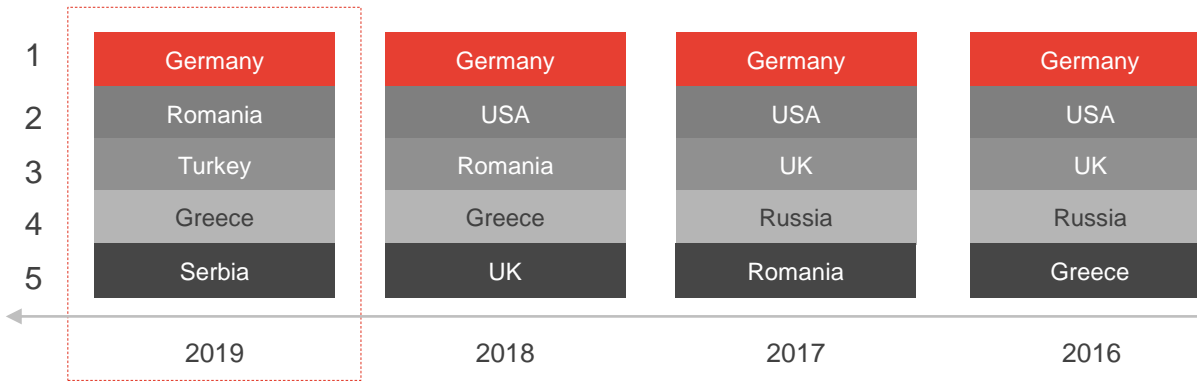


Would you be my neighbour?

Germany continues to be the most important foreign country for Bulgarian CEOs, while Romania makes it to the second place

Figure 5a

Q: Which three countries, excluding the country in which you are based, do you consider most important for your organisation's overall growth prospects over the next 12 months? (Top 5 countries of choice shown)



Staying relevant to the local market has never been more valid. The results from the Bulgarian 2019 CEO survey convey the same message as increasingly the markets considered of importance for growth are closer to home.

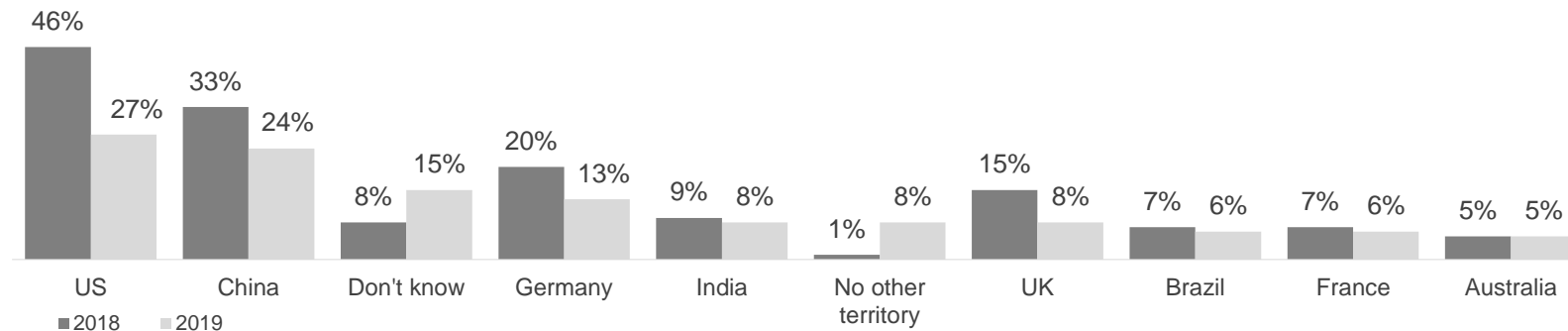
Germany continues to be the most significant country impacting growth for Bulgarian CEOs (35% vs. 13% globally), with Romania (25%) climbing to second place from third last year. Turkey and Serbia appear in the top 5 markets for the first time since 2016. Russia steps down to 7th place and 6th place is taken by Italy.

The Brexit uncertainty causes UK to disappear from top positions in 2019 and USA does not make it either, reflecting a trend to look closer at our neighbors.

Still, the Technology, Media and Telecommunication sector continues to see USA as the biggest market ensuring growth for the industry, driven mainly by exported technology services. The other top choice from industry perspective is Romania, pointed as important market for the Energy, Utilities and Resources sector. China is the number 3 territory for the Retail & Consumer industry, since the majority of the suppliers for the sector are based there.

Figure 5b

On a global scale, business leaders are continuing to consider USA and China as top markets of importance. Yet, it seems that the globe has shrunk and CEOs are not focused so much on expansion on other markets. They are looking inside for growth - both organisationally and territory-wise.



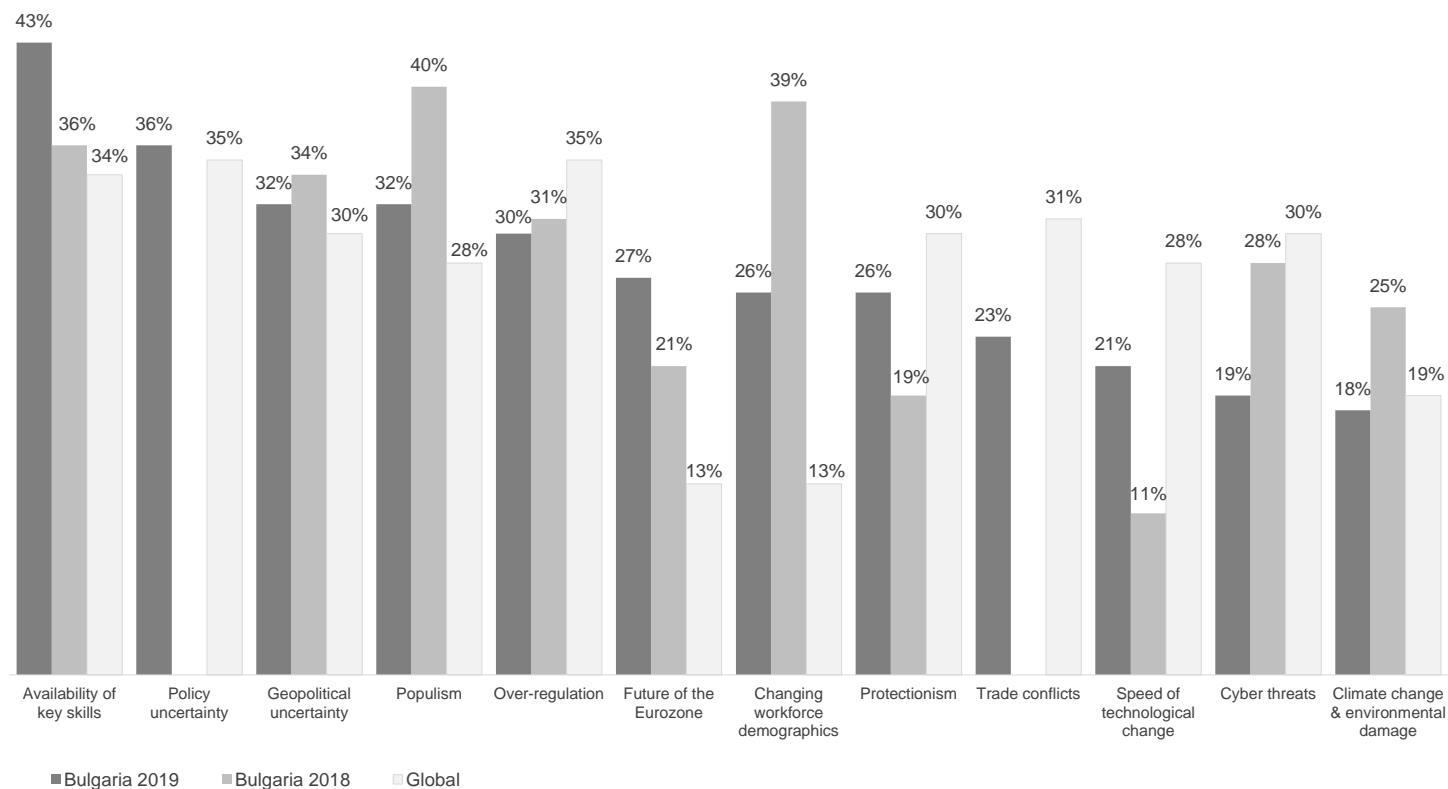
Overall, the global trend seems to be that CEOs are more cautious with brave expansion plans, choosing to play safer on more familiar turf – and Bulgaria is no exception to that.

Troubles close to heart

Bulgarian CEOs are extremely concerned about the availability of key skills, the lack of which threatens their long-term prospects, and about policy uncertainty as solid foundations cannot be built on moving sands

Figure 6

Q: How concerned are you with the following potential economic, policy, social, environmental, and business threats to your organisation's growth prospects?¹



1) Percentage of respondents who indicated Extremely concerned. The questions related to policy uncertainty and trade conflicts were asked for the first time in 2019

This year CEOs are troubled less by global issues such as geopolitical uncertainty, populism or climate change, but rather by the ease of doing business and ensuring growth.

Bulgarian CEOs are extremely concerned about ensuring sustainable operations and the lack of key skills is the number one concern (43% from 36% last year). It comes up even stronger in CEE, with 51% of the CEOs being extremely concerned.

In Bulgaria this topic is reinforced by concern over changing workforce demographics (26%) landing among the top 10 voiced concerns. The aging population, the changes that Millennials are bringing in the workplace, the increasing number of Generation Z in the workforce and the increasing need for digital skills are all forces with significant implications on how business leaders in all sectors of the economy manage their companies.

This year for the first time we asked about threats that policy uncertainty and trade conflicts are posing for organisations' growth and these resonated with Bulgarian CEOs. Policy uncertainty ranked second (36% extremely concerned) and trade conflicts made it to the top 10 (23% extremely concerned). This may signify insufficient transparency by policy makers, as frequent changes without clear direction or long-term stability affect negatively the business climate and the ability to plan growth and investments.

The future of the Eurozone has become a bigger concern in 2019, as Bulgaria made clear indications of wishing to become a Eurozone candidate and join the ERM II.

Speed of technological change has prominently risen up in ranking as a threat compared to the 2018 results in Bulgaria, showing that being able to keep up with technological advancement will become a key "make it or break it" business factor in the future. Surprisingly this is coupled with a decrease in anxiousness about cyber threats.

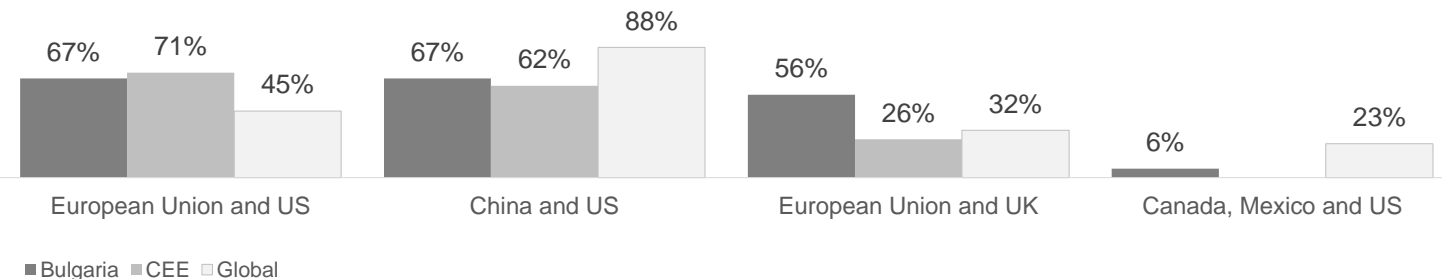
Globally, over-regulation is the perennial top threat, maintaining first place since 2008. It is joined in the top five threats by policy uncertainty, availability of key skills and trade conflicts. All of these are more immediate concerns tied to the business conditions within the economic infrastructure of one's own markets. Top of mind among CEOs' concerns is what dominates the headlines. Terrorism events dropped off while trade conflicts and policy uncertainty rose to the fore. Government actions under new populism regimes have taken centre stage and are of more immediate concern than shifts in global temperature.



Trading places

Despite showing propensity to trade closer to home, Bulgarian CEOs show concern about global trade conflicts

Figure 7a Q: What specific trade conflicts are you concerned about?

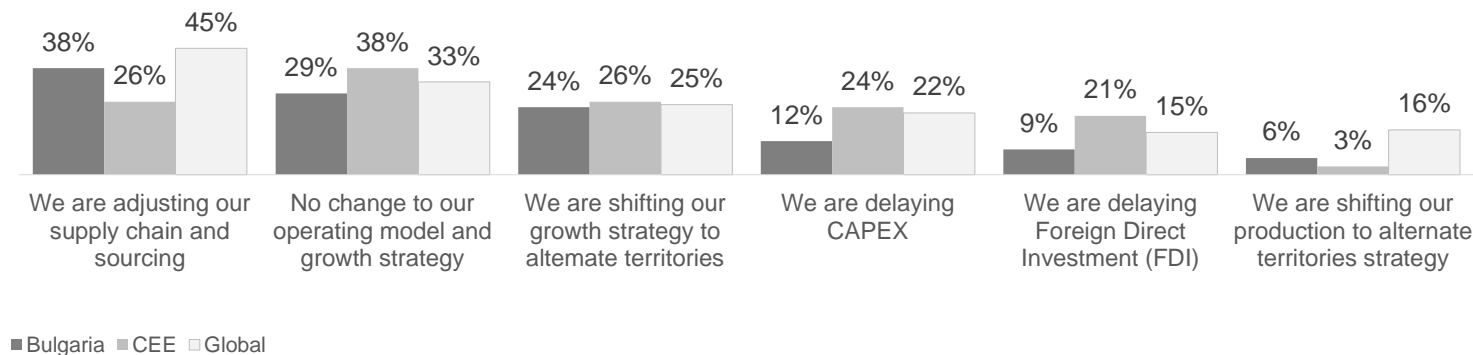


Looking closer to home when it comes to trading relations does not make the Bulgarian CEOs indifferent to trade conflicts that might shape the overall economic landscape and have a ripple effect around the globe.

In terms of level of concern, the trade conflict between China and US received the same ranking as the trade conflict between EU and US (67% as shown in Figure 7a), driven mainly by the responses of the Bulgarian CEOs coming from the Financial Services sector and the Technology, Media and Telecommunications sector. This may reflect concerns about the volatility of financial markets in response to the conflict between the large global economies.

CEOs see the change in sourcing and suppliers as the prevailing reaction to trade conflicts' impact

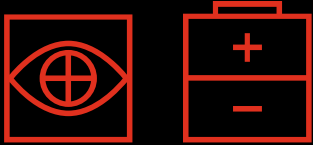
Figure 7b Q: How are trade conflicts affecting your operating model and growth strategy?



To counteract the adverse effects of trade conflicts between different countries / unions, businesses adjust their sourcing strategy and supply chain – the most immediate reaction that will affect the operating models of organisations.

Bulgarian CEOs are in alignment with global ones on this topic (38% vs 45% respectively), with the Retail & Consumer CEOs mainly choosing this counter measure, closely followed by the Industrial, Manufacturing and Automotive ones.

The Financial Services CEOs in Bulgaria are the ones that mostly choose not to change their operating model or growth strategy in response to trade conflict developments.



Energy, Utilities & Resources Industry Insight

Despite climate change and environmental damage not being stated among the top threats to growth prospects this year, the Energy, Utilities & Resources (EUR) Sector is the one affected by stricter environmental regulations imposed on businesses.

On a global level, EUR CEOs state that the highest impact on the way their businesses operate and deliver growth in the next 5 years will be the use of renewable energy resources (61%), followed by decarbonisation of the economy (55%), resource and materials substitution with new sources and technological solutions (43%) and electric vehicles (43%).

Bulgarian EUR CEOs deviate from their global peers, as they rank highest in terms of impact on their businesses new market entrants from other sectors such as technology (80% of the Bulgarian EUR CEOs vs. 36% on global level). Traditionally, the sector has been relatively closed, with limited number of participants, who now have difficulties adjusting to the ongoing disruption in the value chain. Apart from this and in line with global responses, Bulgarian EUR CEOs also consider the resource and materials substitution as having major impact on the way they will operate in the long run (80%).



2

People:

Looking Within for
Opportunities
to Grow

85%

of Bulgarian business leaders report that it has become more difficult for them to attract talent

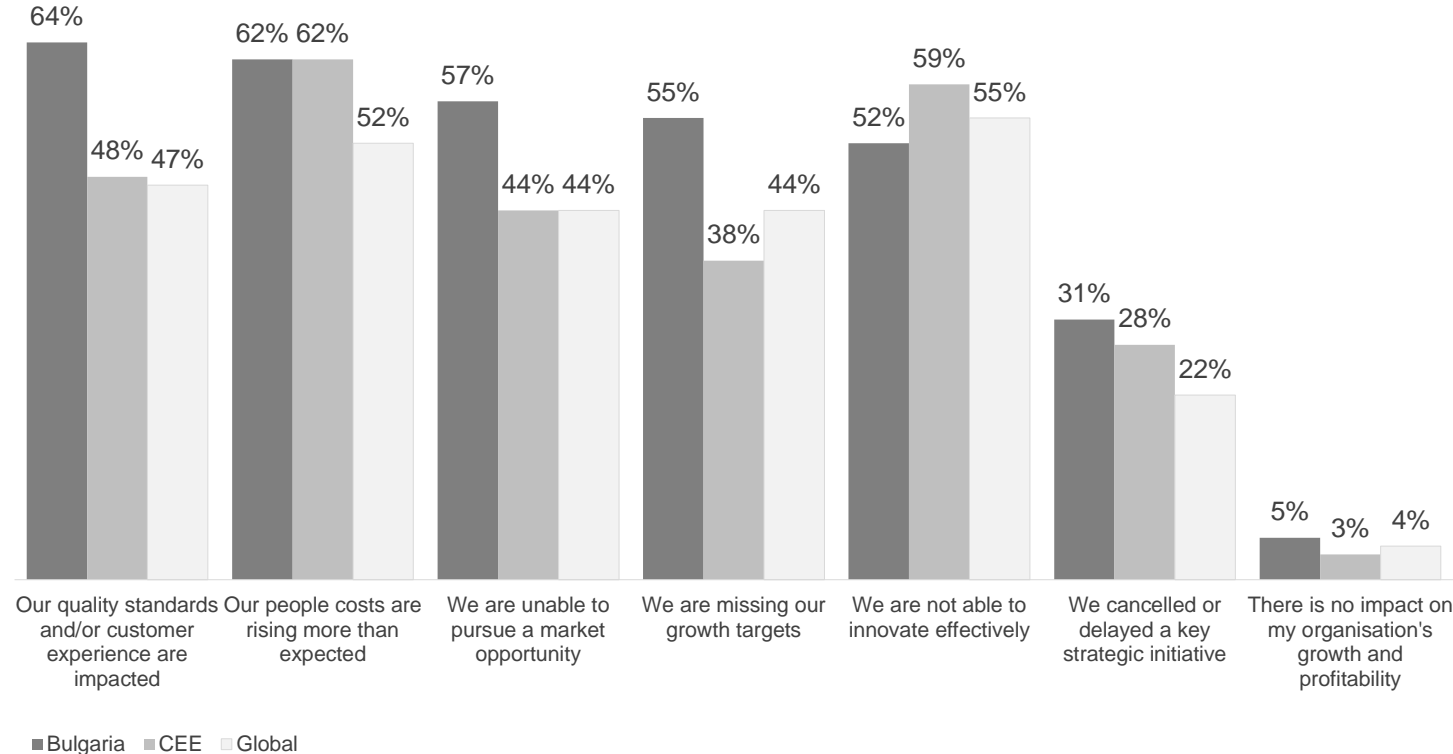
36%

of business leaders identified compensation expectations as a top reason for the difficulty to hire new employees

On the lookout for skilled resources

Not having the right people with the right skills has the highest negative impact on customer experience and quality standards according to Bulgarian CEOs

Figure 8 Q: What impact is "availability of skills" having on your organisation's growth prospects?



As already seen, Bulgarian business leaders feel that growth prospects are threatened by the scarcity of key skills among their existing and potential workforce. What is considered key skills and how these impact the business differs in the responses at global, CEE and local level (Figure 8).

Globally, CEOs are mostly concerned about attracting and retaining people with skills that will allow the businesses to innovate effectively (55%), a capacity that is put at the core of the organisation's growth prospects. In comparison, Bulgarian CEOs' attention is drawn towards more operational issues and "hygiene" factors such as the ability to provide appropriate customer experience and quality standards (64% of the respondents). This provides an interesting perspective on the local labour market, implying potential lack of educated workforce with the right attitude and work culture, instrumental to retaining customers and enhancing quality.

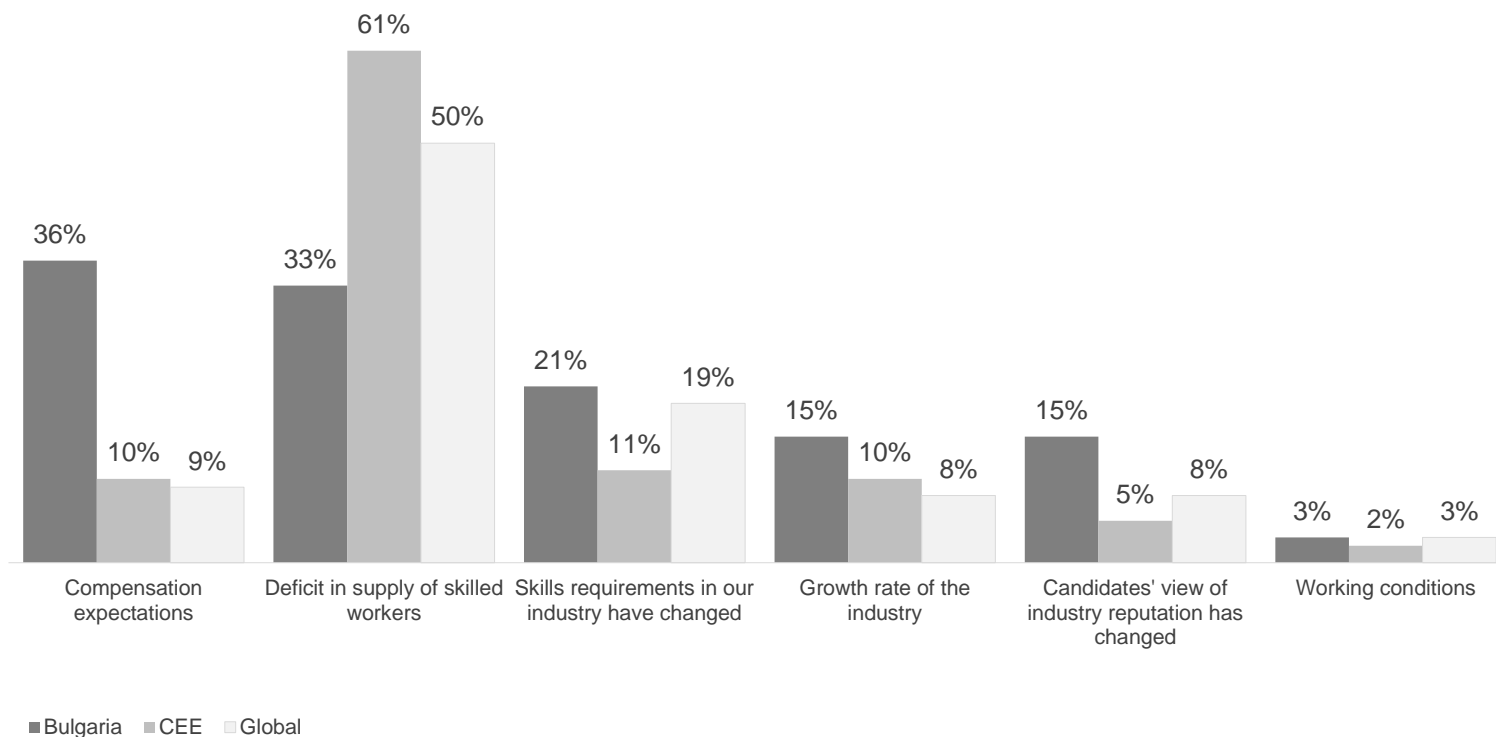
The rise in people costs that scarcity of skilled resources brings comes second but still high in importance according to Bulgarian CEOs (62%), while at CEE level remuneration levels rising faster than foreseen is the number one concern (for 62% of the CEOs). It seems that the right skills are both highly valued and requiring higher remuneration. Yet the speed of technological advancement is such that soon it might become cheaper to combine the opportunities offered by artificial intelligence with fewer but highly skilled personnel, thus ensuring long-term profitability and growth.

Overall, Bulgarian CEOs seem more worried about most of the implications of unavailable key skills in comparison with their global and CEE peers. And for a good reason. Clearly workforce quality (and quantity) is turning into a major limitation factor for the growth of the Bulgarian economy.

Reasons for the talent shortage

Rising compensation expectations, insufficient supply and changed skills requirements are the top 3 difficulties for CEOs in hiring workers

Figure 9 Q: Which of the following is the primary reason why it has become more difficult to hire workers in your industry?



Last year the low unemployment rates raised concerns as more than half of Bulgarian CEO survey participants reported that it is “somewhat difficult” or “very difficult” to attract talent in the digital world. This year 85% of them say it has become more difficult to hire workers in their industry. In the CEE region hiring people is more difficult for 78% of the business leaders, while globally 62% of the CEOs are anxious about finding sufficient number of employees.

By the end of 2018 unemployment in Bulgaria has reached remarkably low levels - 2.5% in the Southwest region and 3.9% in South region¹. Similar results (5.0% at national level) were measured 10 years ago, just before the global economic downfall in 2008 – 2009.

In this extremely tight labor market CEOs need to pay higher wages to attract people, which leads to rising wage inflation. In Bulgaria CEOs identified compensation expectations as the top reason for the increasing difficulty to hire people in their industry (Figure 9). Respondents from the Financial Services sector are most concerned with this factor, as the rapid adoption of disruptive technologies and increased regulatory complexity drive fierce competition for talent with specific skills and experience.

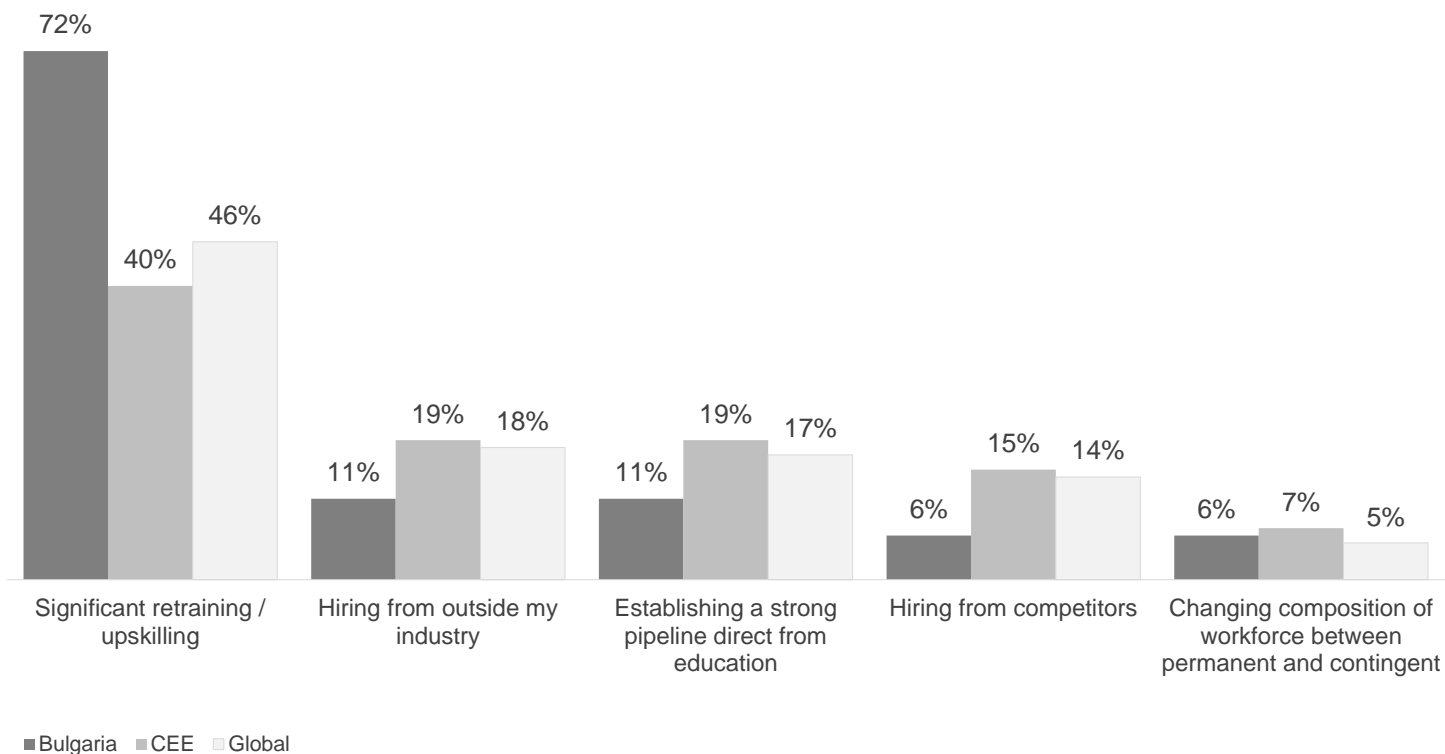
On a global level and across CEE business leaders are less concerned with the ability to offer the expected remuneration than with finding the right quantity and quality of skilled workers (61% and 50% respectively).

1) www.nsi.bg

Means to close the gap

Bulgarian CEOs seem to rely more on their internal abilities to train and develop the right skills in their workforce than on the educational system

Figure 10 Q: Which of these is the most important to close a potential skills gap in your organisation?



Less than a quarter of the Bulgarian and global CEOs agree that skills requirements in their industry have changed. Still the most wanted skillset today inevitably includes digital competencies. And while the digital natives are still pursuing their university degrees, CEOs need to close the skills gap in order to guarantee their own survival and success in the AI and IoT era. Compared to business leaders around the world and in the CEE region, executives in Bulgaria are the strongest believers that retraining or upskilling of their employees is the best way to catch up on the changing work environment and industry needs (Figure 10).

To a certain extent this focus resonates with the more operational and mundane issues that the lack of adequate skills brings for Bulgarian CEOs - customer experience and quality standards are topics that well-designed corporate training programs can successfully resolve. Of course, these programs need to be supported by the right mechanisms for staff retention so that the organisation is able to reap the benefits of this investment.

Notably Bulgarian business leaders are less interested in leveraging the skills and experience that can be brought in from other industries. Arguably such practices may enhance innovation in organisations, given today's dissolving boundaries between sectors and their increasing competition for the same customer and talent pools.

Today, the need to access diverse talent pools is amplified by a decline in new workers entering the workforce in most European markets. Bulgaria is not an exception as one of the top ten threats to economic growth identified by CEOs is the changing workforce demographics. It might be the right time to reconsider traditional talent practices and strategies that sometimes could inadvertently filter out diversity and sideline older workers. In a recent PwC survey "Preparing for tomorrow's workforce, today"¹, 60% of the participants ranked having community outreach, internship and apprenticeship programs to recruit people from less privileged and/or more diverse backgrounds as very important. More than half of the employers interviewed said they were doing this already. The survey showed that 35% of respondents considered hiring, engaging and retaining workers over the age of 60 a key part of their people strategy, and one-fifth said they were actively doing this.

Somehow, technology is narrowing the gap between generations. Considering the implications for the world of tomorrow, more experts agree that next generations will be more like a psychographic group who share similar traits, ideologies or lifestyle and can span multiple age ranges.

In order to maximize the potential of the available workforce, organisations should nourish a culture of adaptability and lifelong learning. E-learning platforms in organisations, enabling peer-to-peer information sharing and the ability to set up communities around content are some examples of what is happening now. Companies should think about how to incentivize employees who develop the skills that will enable them to add value and be employable in the future.

1) <https://www.pwc.com/gx/en/services/people-organisation/publications/preparing-for-tomorrows-workforce-today.html>

3

AI:

Disruption as a Path to Growth

72%

of CEOs believe that in the next 5 years AI will reshape the way of doing business

82%

of business leaders believe AI-based decisions need to be explainable in order to be trusted

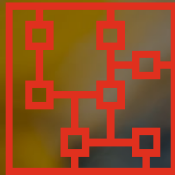
The Essential Eight



Artificial Intelligence



Augmented reality



Blockchain



Drones



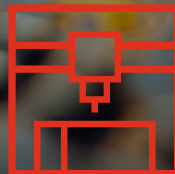
Internet of things



Robotics



Virtual reality



3-D printing

A summary of PwC's Guide to the emerging technologies revolutionizing business now

More than half of the CEOs acknowledged that the exponential technological progress all across the globe has transformed their business over the past five years. However, few are taking advantage of the technological advances today.

To help companies focus their emerging tech efforts, PwC analyzed the business impact and commercial viability of more than 250 emerging technologies and narrowed them down to the "Essential Eight".

These are the core technologies which will have the greatest impact for businesses across every industry and every country, over the next three to five years.

The "Essential Eight" are the technology building blocks that every organisation must consider. While each company's strategy of exploiting and combining them may vary, these technologies will have a profound global impact on business, employees, and customers.

This 8 technologies are essential and reshaping today. Stop waiting. Start exploring.

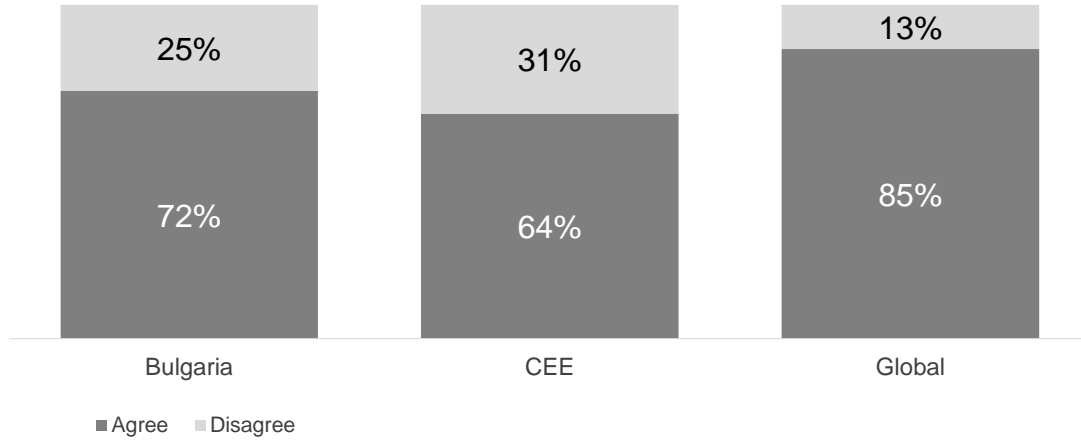


AI on focus

CEOs worldwide believe that AI will be a catalyst for business transformation

Figure 11

Q: To what extent do you agree or disagree that Artificial Intelligence (AI) will significantly change the way you do business in the next 5 years?



This year the overall sentiment across regions is that AI will be a catalyst for business transformation. CEOs across the globe are aware of the growing impact of this technology solution, but only a few have started implementing it in their business models.

In Bulgaria, 72% of CEO participants agree that AI will significantly change the way they do business in the next five years, while globally this number is even higher – 85%.

CEE CEOs are the most skeptical about the forthcoming change in comparison with their global and Bulgarian peers, as only 64% expect significant change (Figure 11).





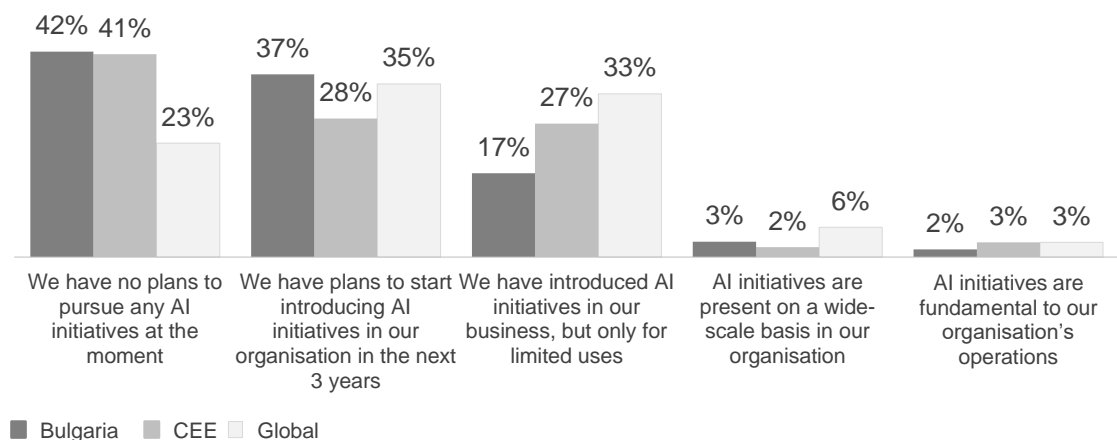
When asked about specific AI-related implications for their businesses, 42% of the Bulgarian CEOs, 41% of the CEE CEOs and 23% of the global CEOs declare no plans to pursue any AI initiatives at the moment (Figure 12). But more importantly, more than half of the interviewed Bulgarian business leaders seem to realize the opportunity offered by the disruptive technology, as 37% of them plan to introduce AI in the next 3 years and 22% already apply AI to a different degree. Overall Bulgarian respondents rank well and in line with their global peers in terms of openness and receptiveness of AI-related innovations, while CEE CEOs seem more skeptical on the topic.

Further analysis shows that the “early adopters” are evenly spread across most sectors included in the surveyed sample. Still, the players that lead the way in terms of wide-scale AI implementation seem to come from Financial Services as well as Technology, Media and Telecommunications sectors.

According to the PwC 2019 AI Predictions Report¹, AI power grows when it is integrated with other technologies, including analytics, IoT, blockchain and, eventually, quantum computing. This convergence will maximize the ROI on technology investments, in combination with standardized and integrated data to train AI as well as enhanced security mechanisms to prevent related risks.

Close to one-third of the CEOs are planning to start introducing AI initiatives in their organisations in the next 3 years

Figure 12 Q: Which of these is the most important to close a potential skills gap in your organisation?



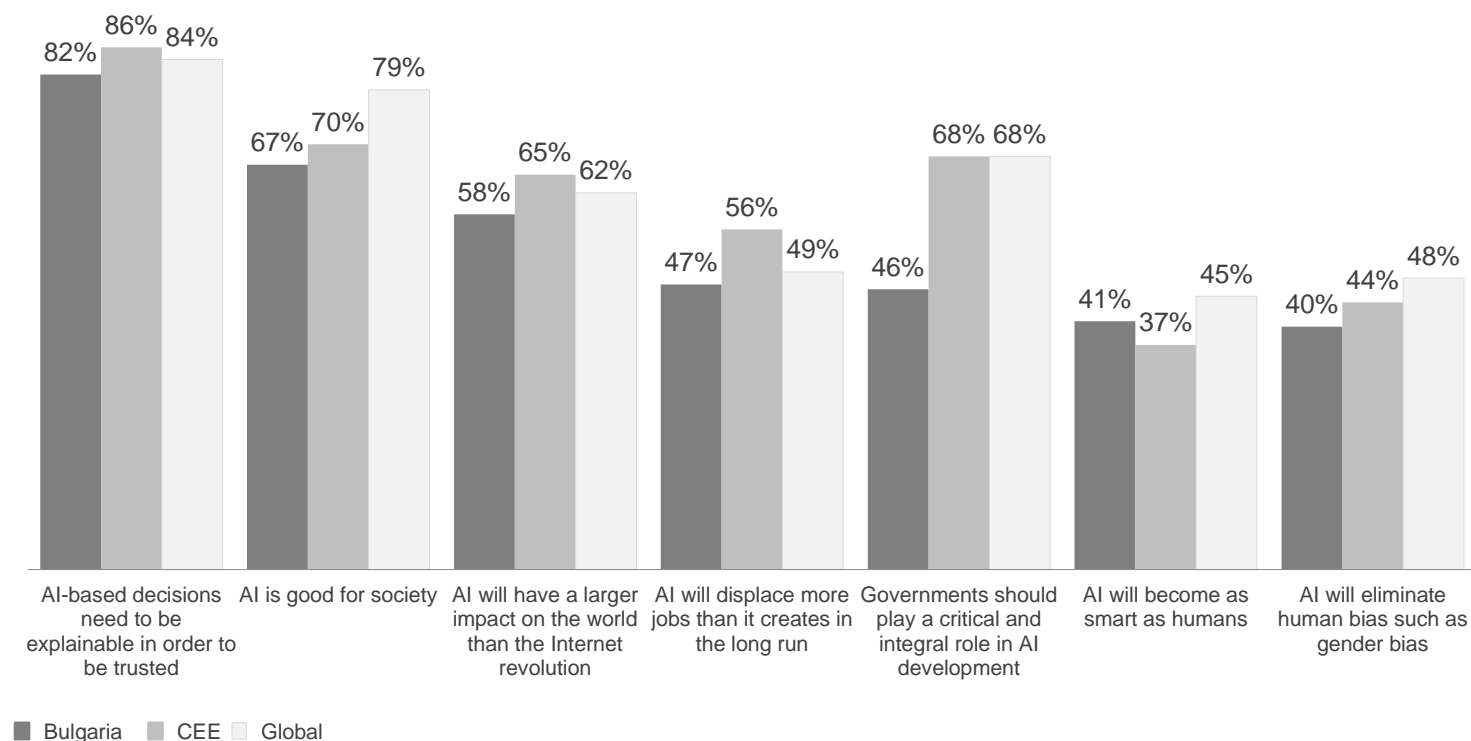
1) <https://www.pwc.com/us/en/services/consulting/library/artificial-intelligence-predictions-2019.html>



Why are so many CEOs hesitant to take action?

The ability to explain in a comprehensible manner how the AI model makes the right decisions will be crucial for building trust in this new technology

Figure 13 Q: How strongly do you agree or disagree with the following statements about artificial intelligence (AI)?



1) <https://www.pwc.com/us/en/services/consulting/library/artificial-intelligence-predictions-2019.html>

What CEOs overwhelmingly 'agree' on is that AI-based decisions need to be understandable in order to be trusted. This is the position of 82% of the Bulgarian CEOs, 84% of global CEOs and 86% of CEOs in CEE (Figure 13).

In PwC's 2019 AI Predictions report, AI is defined as a collective term for computer systems that can sense their environment, think, learn, and take action in response to what they're sensing and their objectives. In order to build trust in AI, business leaders should also build processes for an easier interpretation and explanation of the way AI models support right decision making. Overcoming the fear of opening the algorithmic 'black box' is crucial to AI's success in the business field, as the complexity and the scale of its impact grows (e.g. in medical diagnoses and self-driving cars). An AI specialist should be able to communicate the rationale behind an AI app design in a simple manner, pinpoint its strengths and weaknesses, and draw its future trajectory and goals for the client.

AI brings contrasting expectations for the future. Most of the CEOs seem to align that AI is beneficial to society and that its impact will be comparable with or exceed the one brought years ago by the internet revolution. At the same time they are skeptical that AI will outperform the human brain or overcome its tendency to have a biased view of the world. Interestingly, CEOs seem to be split over the effect of AI on employment and whether it will create or eliminate more jobs in the long run.

PwC's 2019 AI Predictions report¹ reveals what businesses fear most about AI. Over 1000 executives identify new privacy and cyber threats, legal liabilities and reputational risk. Some of them see AI as too complex to understand or control. In order to overcome and mitigate these risks businesses need to introduce the concept of "responsible AI" by assigning accountability for transparency, interpretability, robustness, security, governance and system ethics.

Will robots really steal our jobs?¹

The impact of AI over the workforce is a matter of social debate. In Bulgaria, 47% of the CEOs believe that AI will displace more jobs than it will create in the long run.

Last year 75% of the Bulgarian CEOs said it is their responsibility to retrain employees whose job functions are automated. This year's survey brings insights as to the role that government should play in this process according to business leaders.

81% of the Bulgarian CEOs believe that there should be incentives for organisations to retrain workers whose jobs are replaced by AI. And 85% of them believe that government should develop national strategy and policies for AI, taking into account the expected impact on communities (Figure 14). According to the World Economic Forum, the main goal of the AI policy is to maximize benefits while minimizing risks and harms.

The estimated proportion of existing jobs at high risk of automation in Eastern European economies for the next 10 years is over 40%. According to PwC estimates, based on OECD PIAAC data² covering 200,000 jobs in 29 countries, AI's job displacement effect will be divided into three waves: from the early 2020s to mid-2030s. Different industries will be affected in a different way. Financial services jobs could be at risk of automation in the relatively near future, while transport jobs are more vulnerable to automation in the longer term. In Bulgaria and other CEE countries industrial production tends to be easier to automate and accounts for a relatively high share of total employment.

The potential rate of job automation will also depend on workforce demographics. In the far future jobs requiring heavy physical labor (usually performed by male workers) and jobs not requiring higher educational degrees will be at risk.

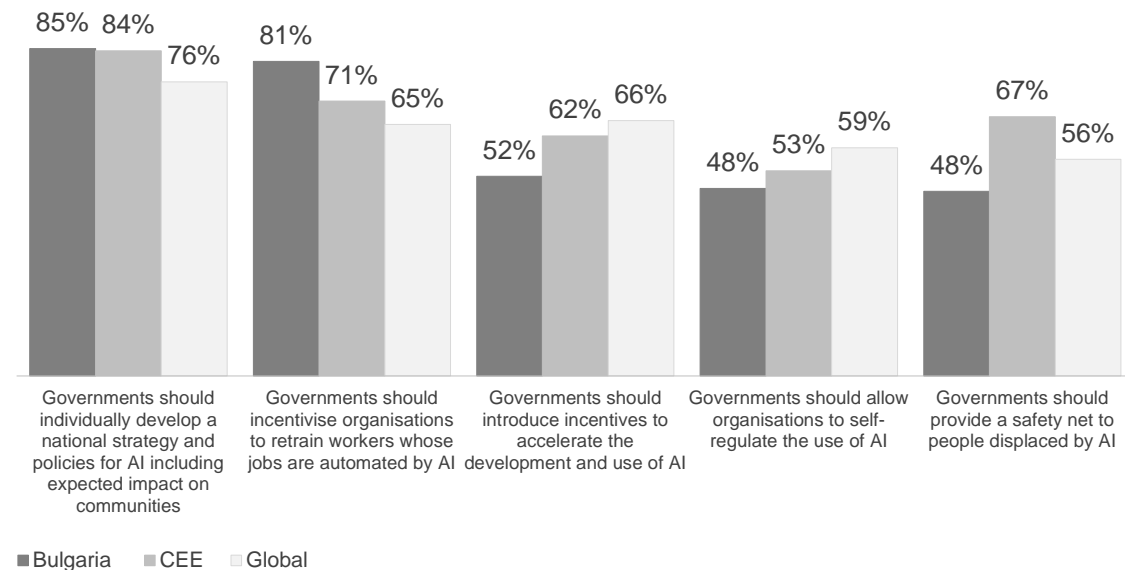
1) Will robots really steal our jobs? An international analysis of the potential long term impact of automation, PwC, 2018, https://www.pwc.com/hu/hu/kiadvanyok/assets/pdf/impact_of_automation_on_jobs.pdf

2) <http://www.oecd.org/skills/piaac/>



Governments should play a critical and integral role in AI development

Figure 14 Q: How strongly do you agree or disagree with the following statements about government involvement with Artificial Intelligence (AI)?



In recent years a number of countries (e.g. Canada, Denmark, Finland, France, Italy, Sweden, UAE and the UK) have developed strategies to promote the use and development of AI. The European Commission recommends its member states to increase public and private sector investment in AI, while pledging billions of euros in direct research and development (R&D) spending.

It seems that in Bulgaria R&D investment is insufficient, combined with a shortage of digital talent. These two are among the reasons why the digitalization process is still slower than in the other member states. To overcome these challenges, the Bulgarian government should develop and implement a comprehensive national strategy on digital transformation, including AI, in close collaboration with businesses, educational institutions and innovation ecosystems.





Industrial, Manufacturing & Automotive Industry Insight

Automation, robotisation, digitalization, industrial Internet of Things, augmented reality, robotic process automation... are no longer mere words for the Industrial, Manufacturing & Automotive (IMA) sector, but spring the CEOs into action now!

The IMA CEOs in Bulgaria unanimously state to be currently pursuing predictive maintenance of assets and products (100% vs. 19% on a global level). This is in clear alignment with the overall tendency expressed by the Bulgarian business leaders to look for organisational growth by ensuring operational efficiencies. The second technology implementation that CEOs see on the agenda at present is that of manufacturing execution systems (MES) (50% of the IMA CEOs in Bulgaria vs. 11% globally).

Both types of solutions are ranked top of mind by the IMA CEOs in Bulgaria and relatively lower by their global counterparts, which might be an indication that on a global scale these are already in place and we are catching up in the utilisation of such technologies, which are considered industry standards already.



4

Data vs. Information: Is the Data Sufficient?

66%

of Bulgarian CEOs believe data about customers' and clients' preferences and needs is critical for strategic decisions

33%

believe the data they have about their brand and reputation is comprehensive

55%

consider poor data reliability and quality being the main reason for the existing data gap

Data that matters



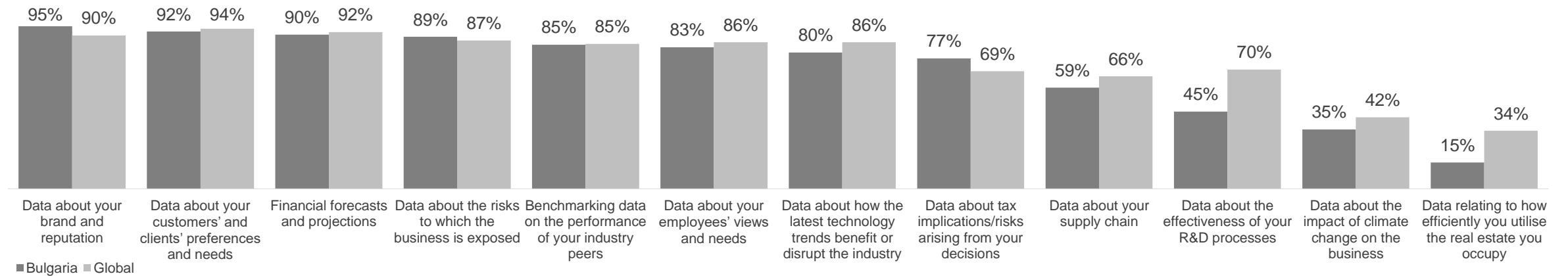
This year CEOs disclose what data they need for decision making to underpin the long-term success of their business. Both globally and locally business leaders consider the same three types of information as the most significant. In Bulgaria, 95% of the participants choose data about brand and reputation as a top priority, while globally this answer ranks third in CEOs' preferences with 90% (Figure 15). 92% of local business leaders point out that data about customers preferences and needs is critical or important to their company's long-term successful development, compared to 94% of global CEOs. Also, financial forecasts and projections are considered critical or important by 90% of the local interviewees and by 92% of CEOs globally.

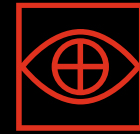
If solely the "critical" responses are filtered out, data about employees' views and needs also makes it to the top 3, together with data about the risks to which businesses are exposed, leaving the financial projections to 4th place.

From the results for Bulgaria it becomes clear that CEOs have already acknowledged the importance of brand reputation in the era of big data. There is an enormous amount of information about companies, products, and services available online. Overwhelmed by the massive amount of information and pressured by the lack of time to make instant decisions, business leaders are searching for alternative ways to integrate the new information they gather into their business practices. A powerful and trustworthy brand can win over its competitors by capturing the selective attention of both employees and customers.

CEOs find data about their brand and reputation, customers' needs and expectations and financial forecasts and projections critical/important for making strategic decisions

Figure 15 Q: Thinking about the data that you personally use to make decisions about the long-term success and durability of your business, how important is:





Retail & Consumer Industry Insight

Being close to customers and anticipating their needs is at the heart of revenue growth for the Retail & Consumer sector. Hence, when discussing the means to reaching out to customers, Bulgarian CEOs state their top ranking advertising activities planned in 2019 to be social media interactive ads (100% of the R&C CEOs), traditional advertising – either TV (100%), or print (64%), and enlisting famous influencers (64%). In comparison, globally R&C CEOs plan to utilise social media (75%), personalized ads to customers based on location (40%) and traditional print (35%).

The focus expressed in Bulgaria on social media interaction with customers is higher than on global scale (100% vs. 52%), however the emphasis is on singular interaction and attraction, rather than on direct sales via social media channels (9%) and on using predominately social media for advertising (9%). Both in Bulgaria (55%) and on a global scale (43%) CEOs envisage to increase their advertising budget in 2019.



Financial Services Industry Insight

When discussing what customers value most, Financial Services CEOs in Bulgaria put first convenience (55% vs. 36% globally) and then trustworthiness (36% both locally and on a global scale). Value for money when choosing a service comes third globally (25%), with only 9% of Bulgarian participants confirming it.

The information gap persists globally ...



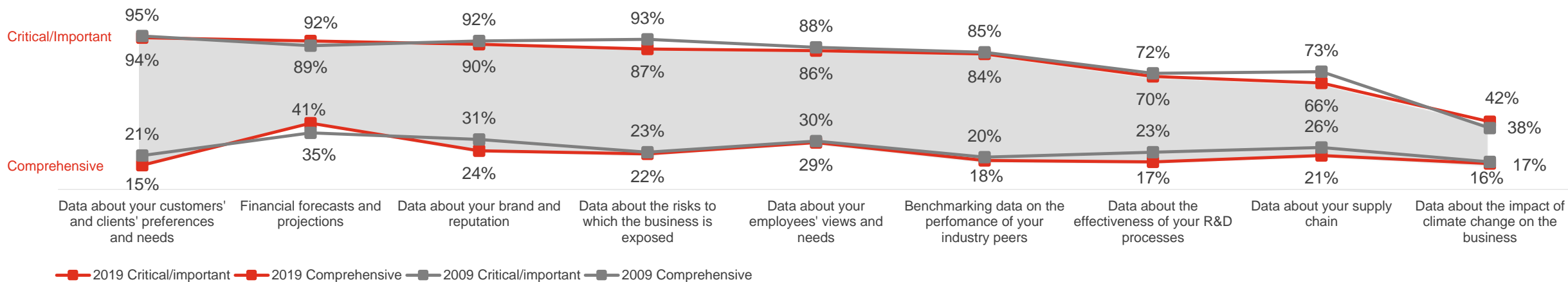
One of the most striking findings in this year's global survey is the fact that the "information gap" between the data CEOs need and what they actually get has not closed in the ten years since PwC last asked business leaders these questions. With the exception of financial forecasting, where CEOs report slightly higher data satisfaction (41% believe it is sufficiently comprehensive), less than a third of them consider the data they receive on critical or important matters as sufficiently comprehensive (Figure 16). Worldwide the information gap is largest on the most critical data: customer needs. So, amidst the exponential growth of data volume, concerns over its adequacy have also risen. Is this a matter of ever-growing expectations, given the opportunities offered by technology? Or is it a matter of being able to clean up, make sense and use all that data that businesses are able to access and collect? Do businesses have the right analytical skills and data governance in place to turn big data into a big asset?

The top reasons provided by global CEOs for the persistent information gap are the lack of analytical talent (54%), followed by data "siloning" and lack of sharing (51%) as well as poor data reliability (50%). In comparison, Bulgarian CEOs point out poor data reliability as the key issue – having erroneous data does not allow for extracting the correct information (marked by 55% of the CEOs, with Retail & Consumer mainly driving the higher percentage). The second problem is the inability to quantify external information (40%) and the third one is the difficulty to access databases, e.g. the fragmentation of data between functions / departments (33%), which results in significant waste of management time. The lack of analytical skills and talent is ranked the fourth reason for the information gap according to Bulgarian CEOs (30%).

The adequacy of the critical/important data CEOs worldwide receive has not improved over the last ten years

Figure 16

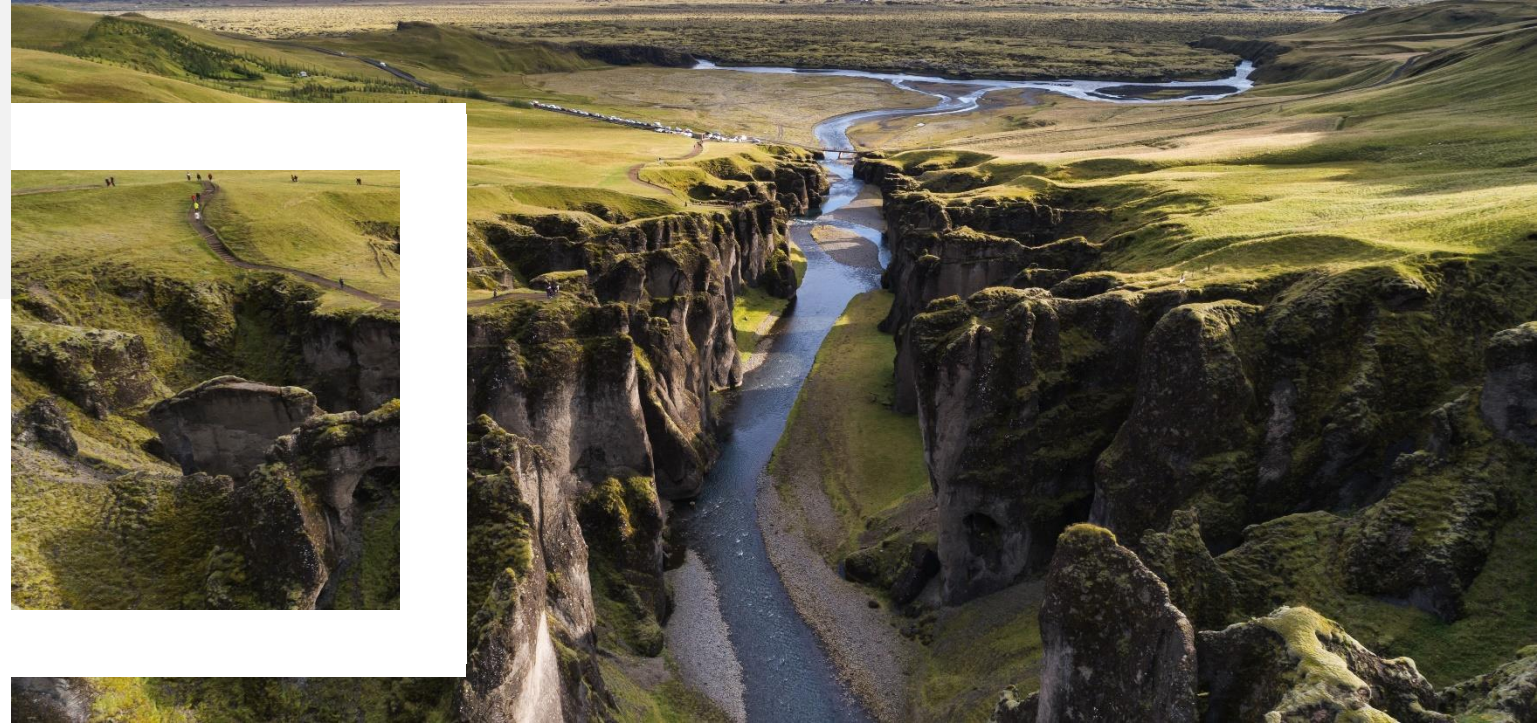
Q: Thinking about the data that you personally use to make decisions about the long-term success and durability of your business, how important is?
 Q: How adequate is the data that you receive? (Global CEOs answers shown)



... and locally



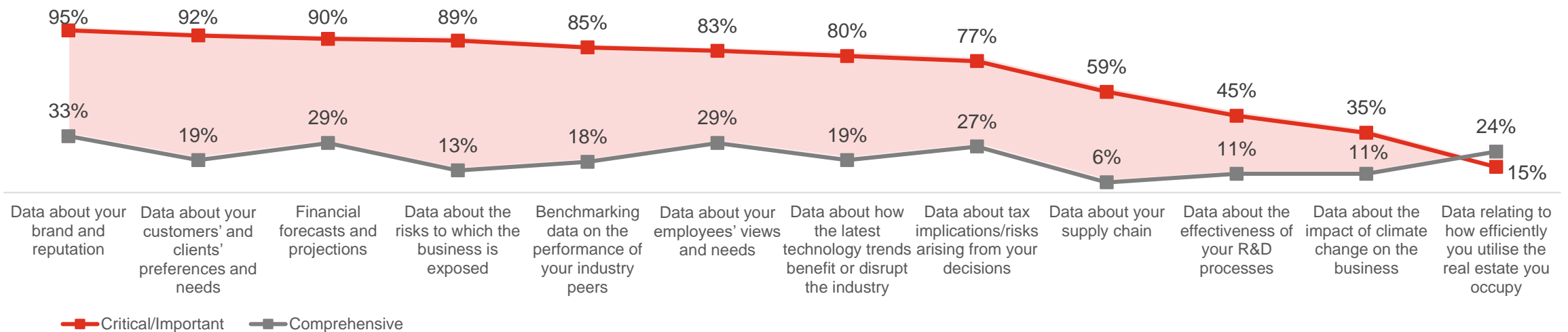
Due to the lack of comparable figures from 2009, Bulgarian CEOs cannot join the “10-year information gap challenge”. At present CEOs in Bulgaria most urgently need to bridge the information gap between the criticality and the comprehensiveness of data about the risks, to which the business is exposed, customers’ and clients’ needs and preferences and benchmarking data on the performance of industry peers (Figure 17).



Bulgarian CEOs most urgently need to bridge the information gap between the criticality and the adequacy of data about the risks, to which the business is exposed

Figure 17

Q: Thinking about the data that you personally use to make decisions about the long-term success and durability of your business, how important is?
 Q: How adequate is the data that you receive? (Bulgarian CEOs answers shown)



5

Participants

snapshot

and credits

68

Bulgarian CEOs took part in the fourth Bulgarian CEO Survey

19%

of them are women

Participants snapshot



68

Bulgarian business leaders completed the CEO Survey



81%

of the respondents are male



59%

of the respondents are between 40 and 49 years of age



72%

of the CEOs' companies are privately owned



28%

of the CEOs manage companies with personnel between 1,000 and 5,000 people

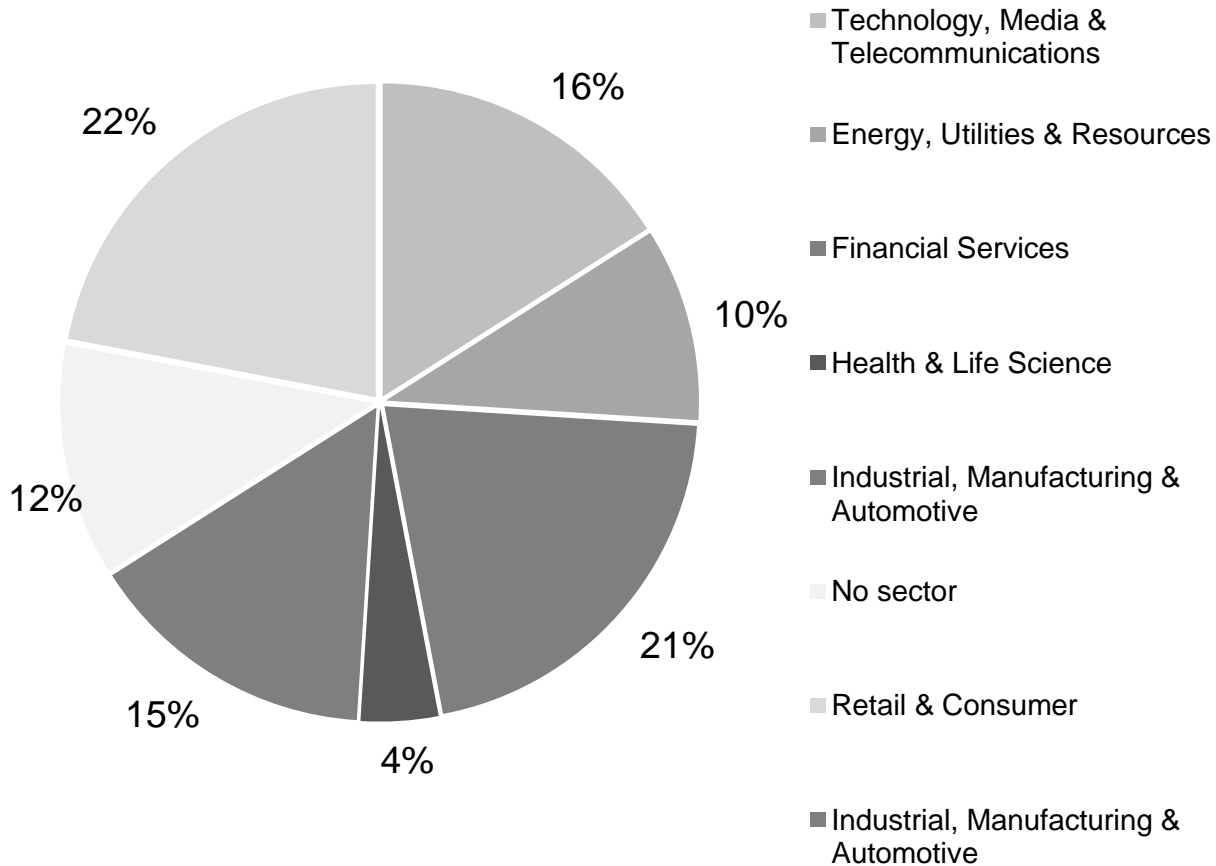


1378

CEOs interviewed in **91** countries **globally**



Industry representation in %



Credits

Research and project team

Zhivka Petkova
Borislava Yakova
Margarita Apostolova
Albena Markova

Data analysis

Data analysis was coordinated by PwC UK, located in Belfast, Northern Ireland

Marketing and editorial

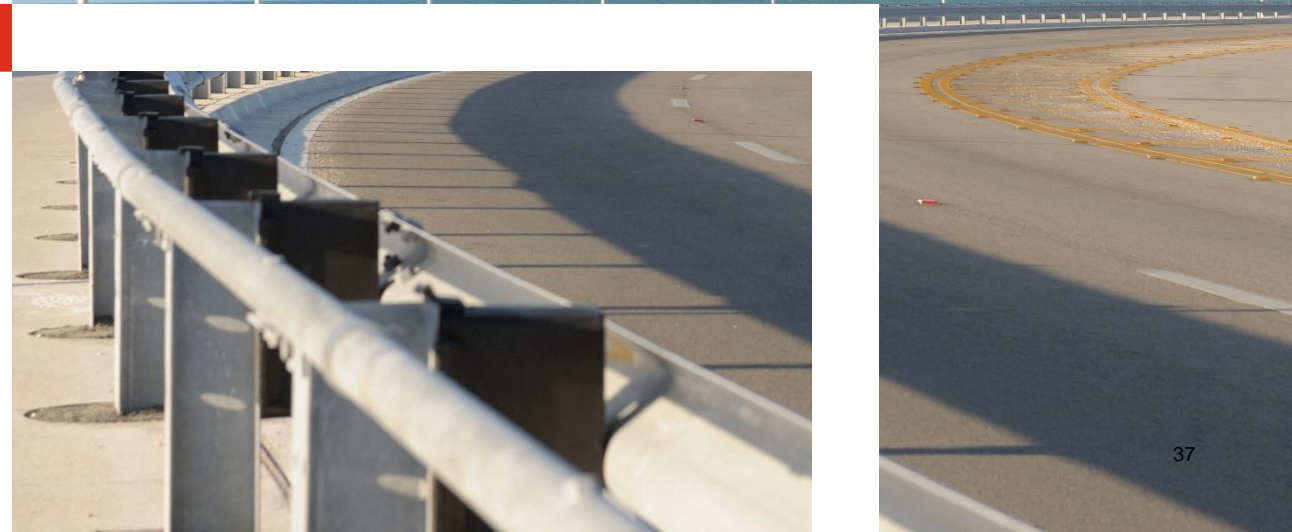
Margarita Apostolova
Borislava Yakova
Velina Yosifova
Lilyana Dinkova
Albena Markova

Find out what global business leaders had to say

by visiting www.pwc.com/ceosurvey, where you can dig deeper and uncover current perspectives

Want to take part in the discussion next year?

If you are a CEO interested in participating in next year's survey, please contact Velina Yosifova (velina.yosifova@pwc.com) and share your thoughts with us



PwC Bulgaria

9-11 Maria Louisa Blvd.

1000 Sofia, Bulgaria

☎ +359 2 9355 200

📠 +359 2 9800 632

www.pwc.com/bg

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