



2016 GE Global Innovation Barometer

Detailed Findings Germany

January 2016



Overview



Now in its **fifth edition** and spanning across **23 countries**, the GE Global Innovation Barometer is an international opinion survey of **senior innovation executives** all actively engaged in the management of their firm's innovation strategy. In addition, this year, the GE GIB also surveyed the views of **informed publics** in **13 countries**.

With both audiences, the Barometer explores how the perception of innovation is changing in a complex, globalized environment, and how they appreciate the **framework for innovation** their country has developed.

In addition, it explores the perceptions of informed publics on the **impact and value of innovation, the associated responsibilities** with driving and supporting innovation and their opinions on the **future of work**.

Innovation Business Executives

All respondents' line of work involves taking part in their company's innovation process/policies

Responsible for making decisions related to innovation, product development or research and development (R&D) activities in their company



2,748 Business Executives,
of which **1,915** are C-suite

Informed Publics/ Informed Citizens

University education or above

In the upper quartile income of their country

Regularly consume top tier business news publications

Regularly follow public policy matters in the news



1,346 Informed Publics

This year, we talked to...

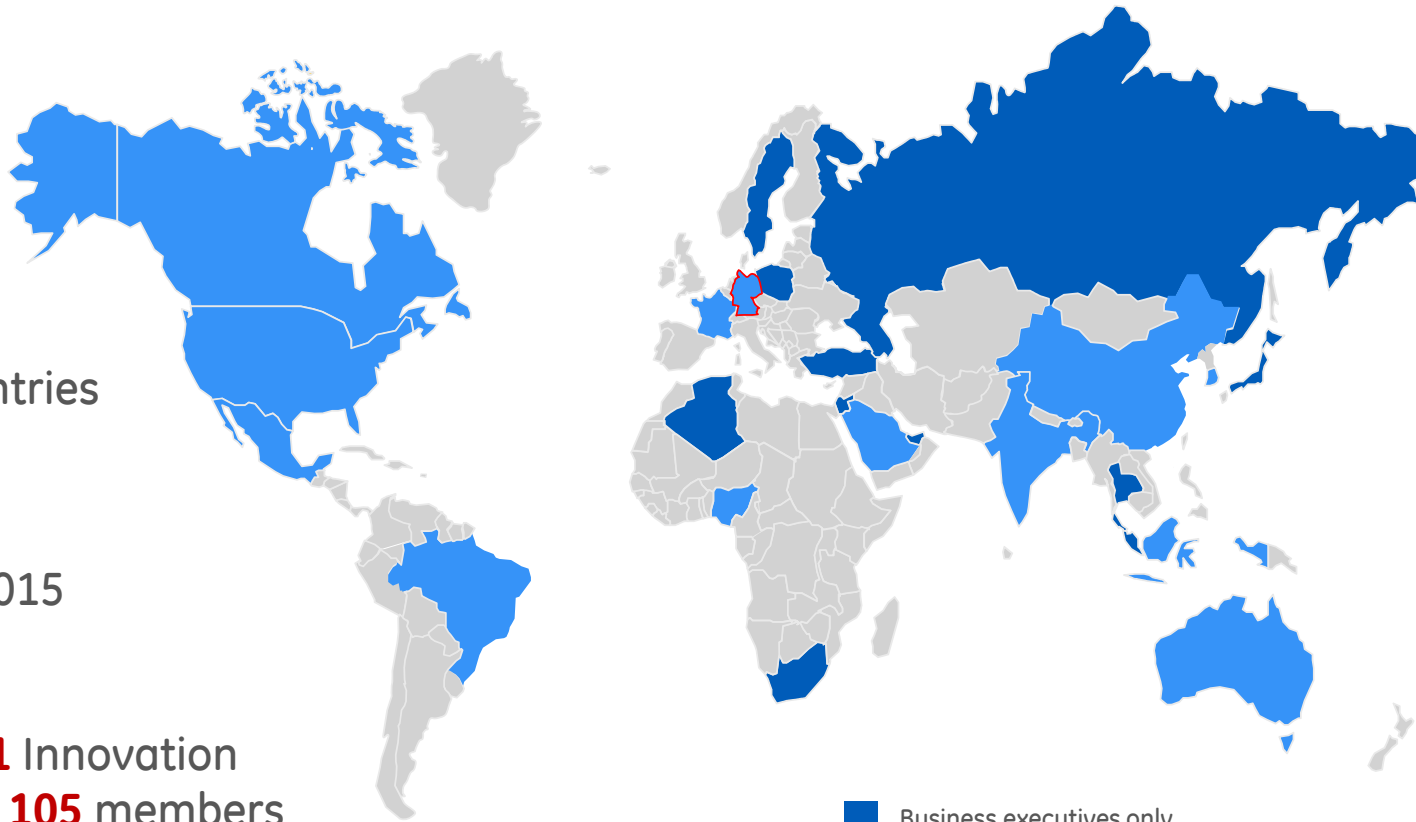
2,748 Innovation Business Executives, of which **1,915** are C-suite, in **23** markets across 10 sectors

1,346 Informed Publics in **13** countries

All answered a **30 minutes** interview

Fieldwork dates:

13th of October – 7th of December 2015



In **2015**, we talked to **101** Innovation Business Executives and **105** members of the Informed Public



2016 GE GLOBAL INNOVATION BAROMETER GLOBAL FINDINGS IN THE LIGHT OF THE GERMANY RESULTS

2016 Key Findings

Welcoming the Revolution: Pressure Rises, Optimism Prevails

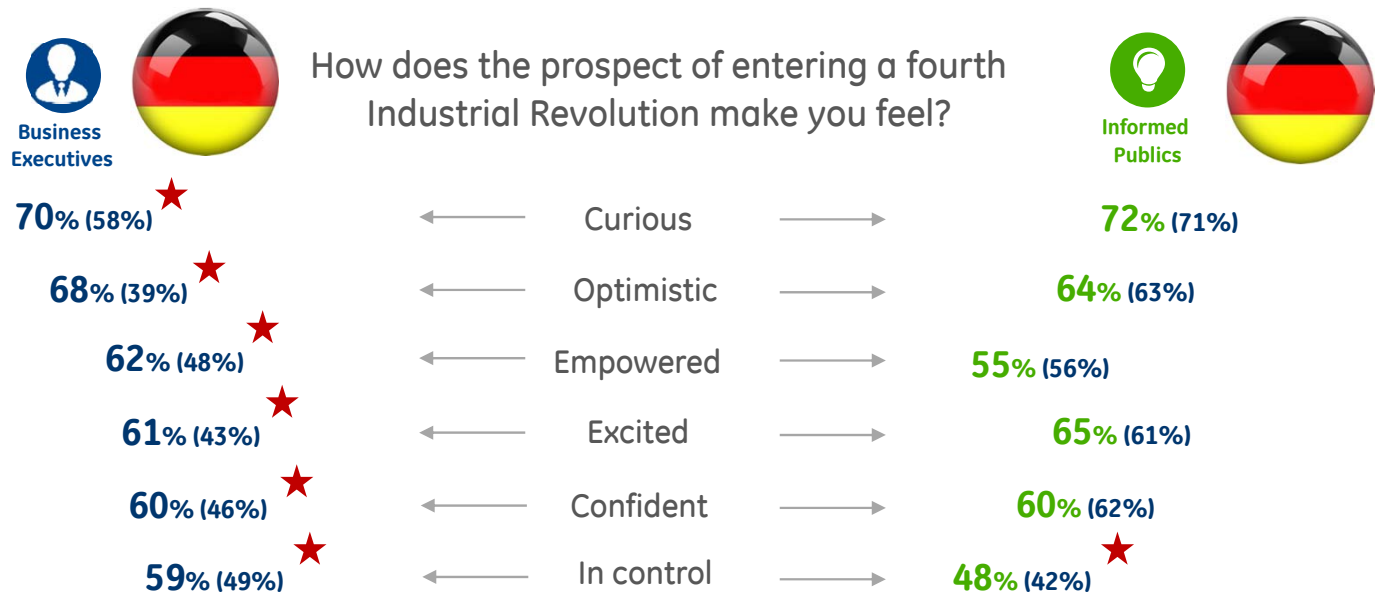
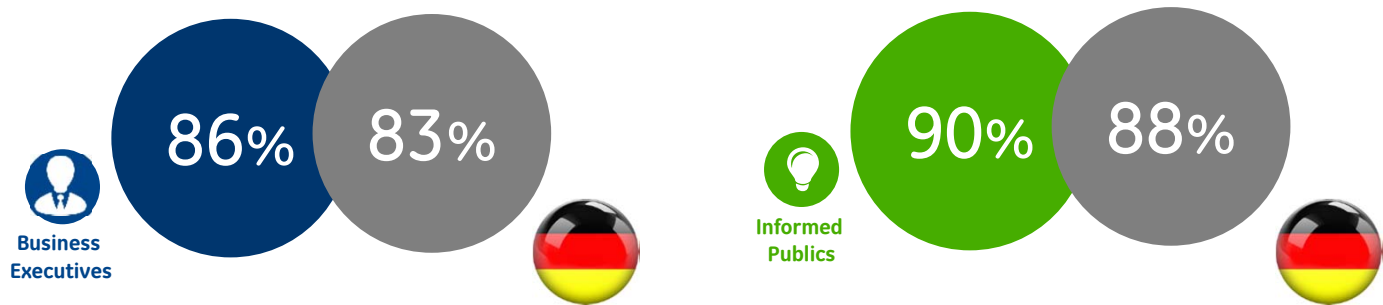
- 1 A Welcome Revolution:** Both business executives and citizens are optimistic about the digital transformation of the world. 68% of execs and 64% of citizens cite a positive anticipation of the 4th Industrial Revolution, while all anticipate a radical transformation of the industrial sector by Advanced Manufacturing. Emerging markets feel especially empowered.
- 2 Embracing New Models and Technologies:** Business executives are adapting through new investments and partnerships. 61% are using big data to inform decision-making (up from 53% in 2014), and 77% are seeing financial results from collaboration (up from 64% in 2014).
- 3 Disruptive Innovation: The Solution and the Challenge:** Although business executives recognize they need to innovate radically to keep up—90% think that the most innovative companies create new markets that didn't previously exist—most are also mindful of the risk of "Digital Darwinism". 81% worry about being left behind as technology evolves faster than they can adapt, creating a fear of becoming obsolete (FOBO).
- 4 Everybody's Starting Up?:** Still, 57% favor a "safer" approach, pursuing incremental innovation and protecting their core business. Inertia and risk aversion are growing. Meanwhile 81% of business executives recognize the "start-up" ethos is increasingly becoming the example norm for creating an innovation culture within companies of all sizes.

A Welcome Revolution:

Both business executives and citizens are optimistic about the digital transformation of the world. 68% of execs and 64% of citizens cite a positive anticipation of the 4th Industrial Revolution, while all anticipate a radical transformation of the industrial sector by Advanced Manufacturing. Emerging markets feel especially empowered.



In the next 10 years, Advanced Manufacturing will radically transform the industrial sector



★ Over-index
★ Under-index

Question text in notes

Embracing New Models and Technologies:

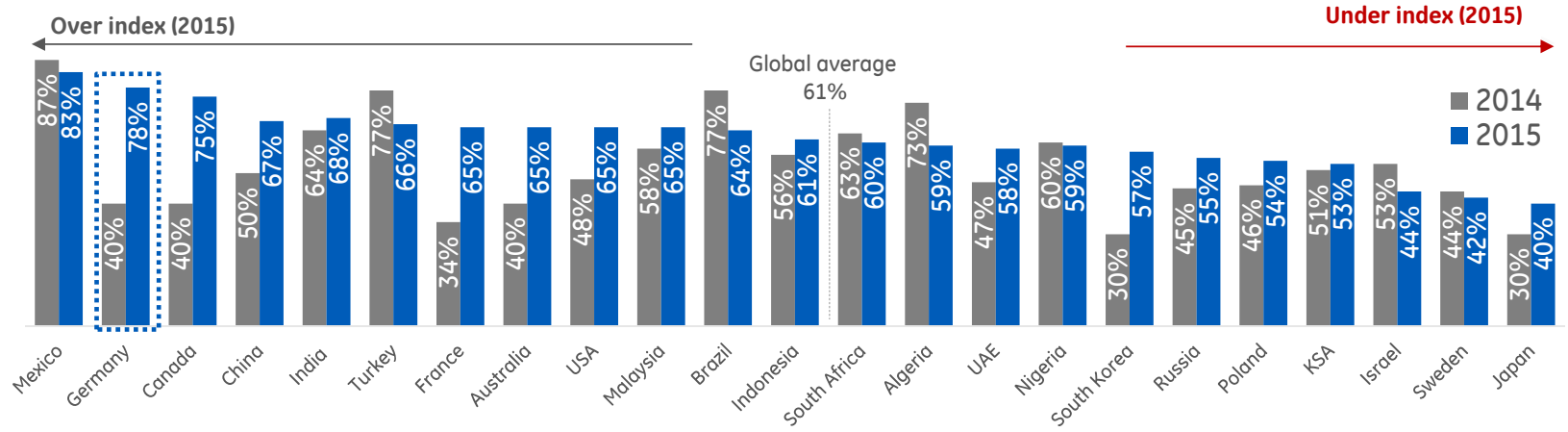
Business executives are adapting through new investments and partnerships. 61% are using big data to inform decision-making (up from 53% in 2014), and 77% are seeing financial results from collaboration (up from 64% in 2014).



Executives are increasingly recognizing the strategic value of data and analytics

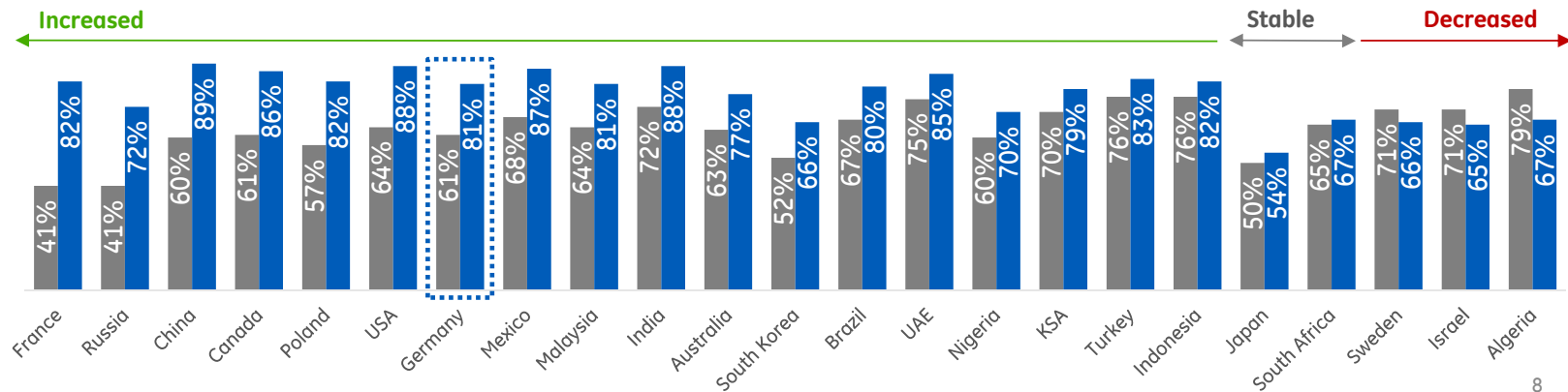


Importance to be able to innovate successfully: To use big data and analytics to improve strategic knowledge and inform decision-making (2015)



Collaboration has increased in most markets

The revenue and profit generated by collaborative innovation activities has been growing over the last year

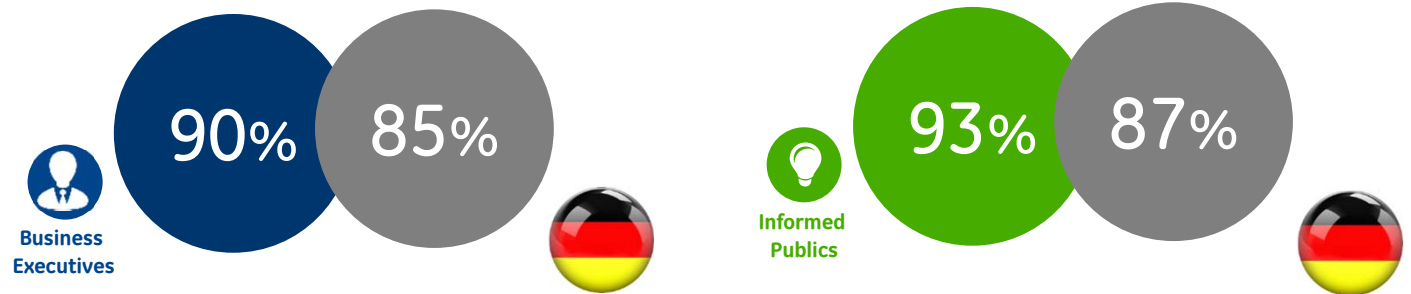


Disruptive Innovation: The Solution and the Challenge:

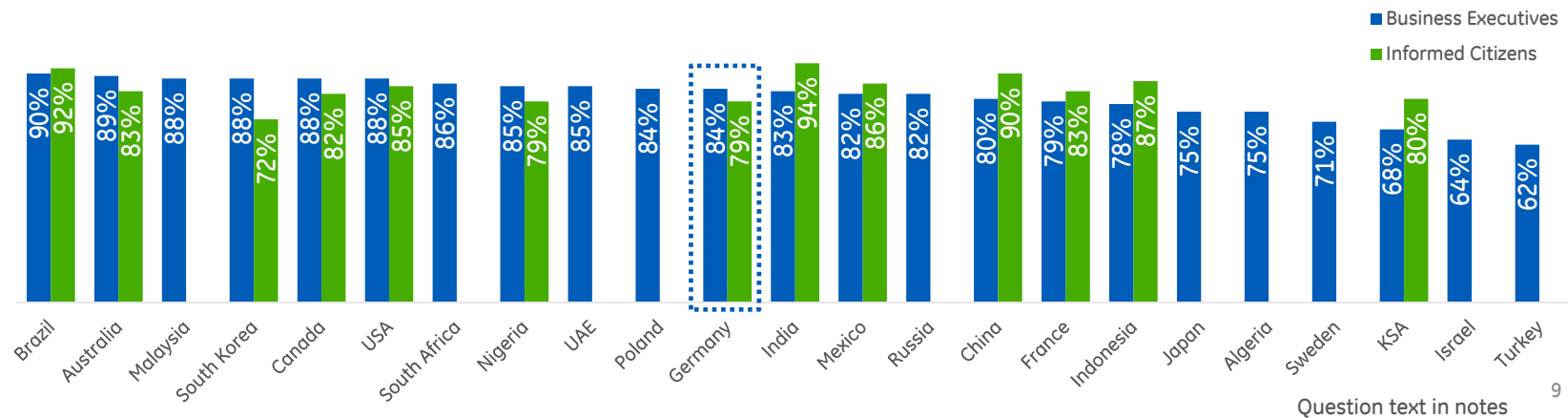
Although business executives recognize they need to innovate radically to keep up—90% think that the most innovative companies create new markets that didn't previously exist—most are also mindful of the risk of "Digital Darwinism". 81% worry about being left behind as technology evolves faster than they can adapt, creating a fear of becoming obsolete (FOBO).



The **MOST INNOVATIVE COMPANIES** not only launch new products and services but also **CREATE A NEW MARKET** that didn't previously exist



Fear of Becoming Obsolete (FOBO) is a view shared across the majority of markets



Question text in notes

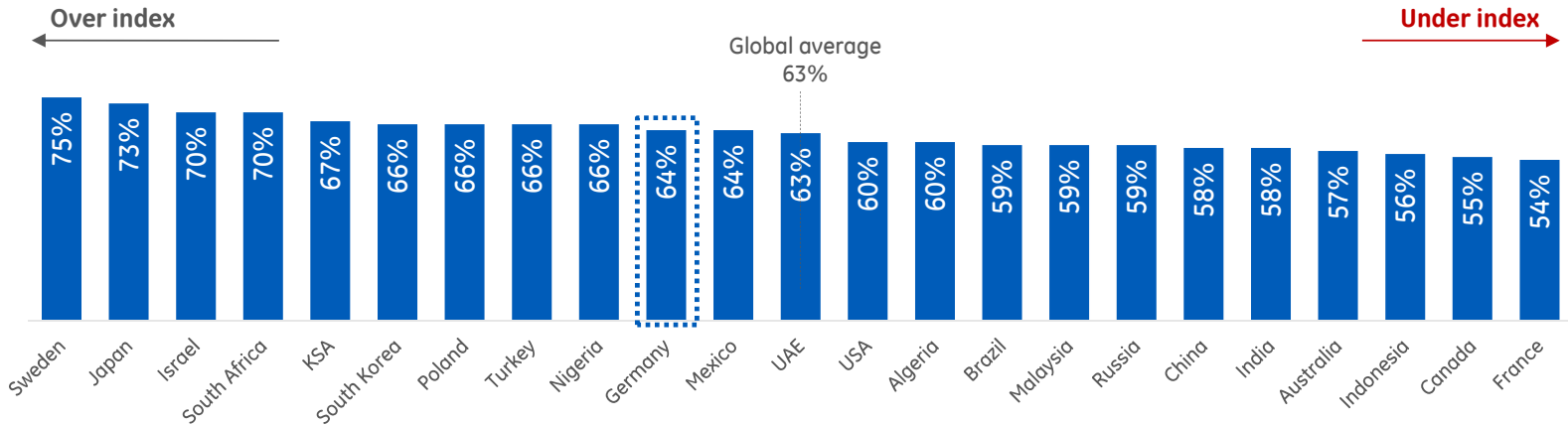
Everybody's Starting Up?:

Still, 57% favor a "safer" approach, pursuing incremental innovation and protecting their core business. Inertia and risk aversion are growing. Meanwhile 81% of business executives recognize the "start-up" ethos is increasingly becoming the example norm for creating an innovation culture within companies of all sizes.



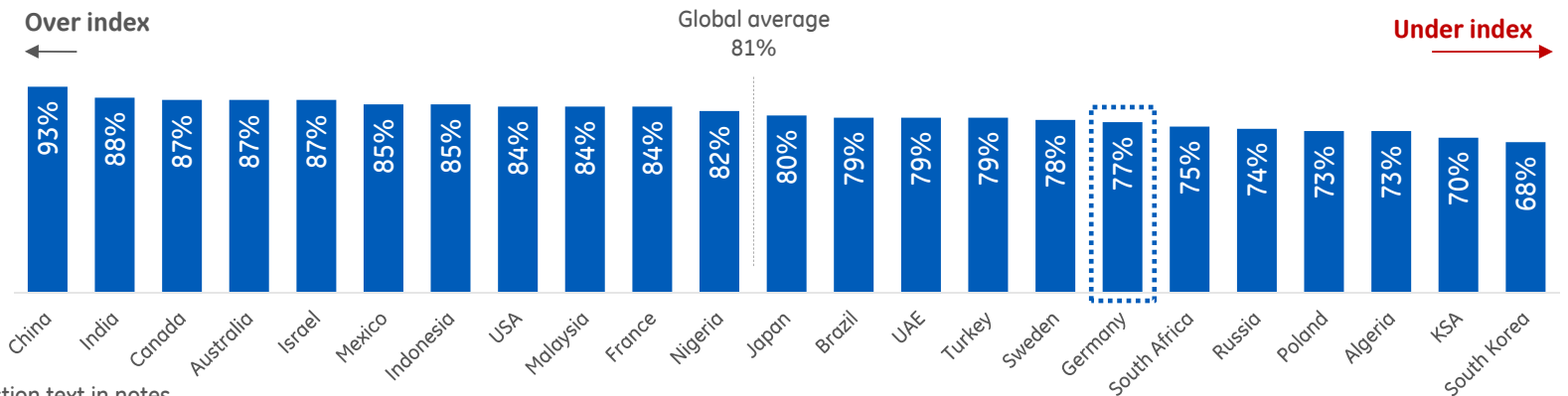
All markets show a preference for incremental innovation

Incremental innovation, improving existing products and solutions vs. breakthrough innovation, launching products that are completely new and have the ability to disrupt their market



The "start-up" ethos is increasingly becoming the example norm

The "start-up" ethos is increasingly becoming the example norm for creating an innovation culture within companies of all sizes



Question text in notes

2016 Supporting Findings

Welcoming the Revolution: Pressure Rises, Optimism Prevails

1 Creativity & Problem-Solving Key for Future Workforce: future worker is changing. Executives are seeking problem solvers (56%) and creativity (54%), and an expected impact of the 4th industrial revolution is that some categories of skilled workers will be in high demand. Citizens are embracing the start-up ethos and value flexible (89%) and remote (79%) work. Only a few countries feel their education system is ready to address future skills, with informed citizens in countries like India (81%), China (78%) and Indonesia (76%) most confident.

2 Minds and Machines Working Together: Business executives expect the digital revolution will make the workplace safer (43%) and create higher-value roles for workers (48%). Few fear any negative impact on employment as a result of the digital revolution; only 17% of business executives and 15% of citizens fear potential negative impact. Executives in the US, India, China or Germany anticipate a positive outcome in their country, while Japanese, French or Swedish execs are more skeptical.

3 The ROI on Collaboration is Increasing: Jumping from 64% in 2014, 77% of executives say revenue and profit generated by collaborative innovation activities have yielded an increase in financial results. 68% of executives declare their firm is open to risk-sharing associated with innovation, including revenue streams or losses that could be generated through collaborative initiatives.

4 Emerging Markets Fearlessly Embrace Innovation: Business executives from emerging markets are feeling more optimistic and more empowered by the 4th industrial revolution than their peers in developing economies. Fewer leaders in emerging markets are also reporting difficulty coming up with radical and disruptive ideas. Asian markets are amongst the most excited and curious, with Informed Citizens in developed markets feeling the least in control.

5 A Call for Greater Government Support: Executives and citizens alike are calling for public authorities to play a more supportive role in innovation. While few citizens (12%) believe their government is the top driver of innovation in their country, more (30%) think it should be. 57% say their country's regulations are not supportive of innovative companies, although emerging markets are more positive in their assessment. Most executives agree that data & privacy regulations are preventing more radical innovation by businesses, while citizens (64%) are willing to share access to their data if it leads to better service.

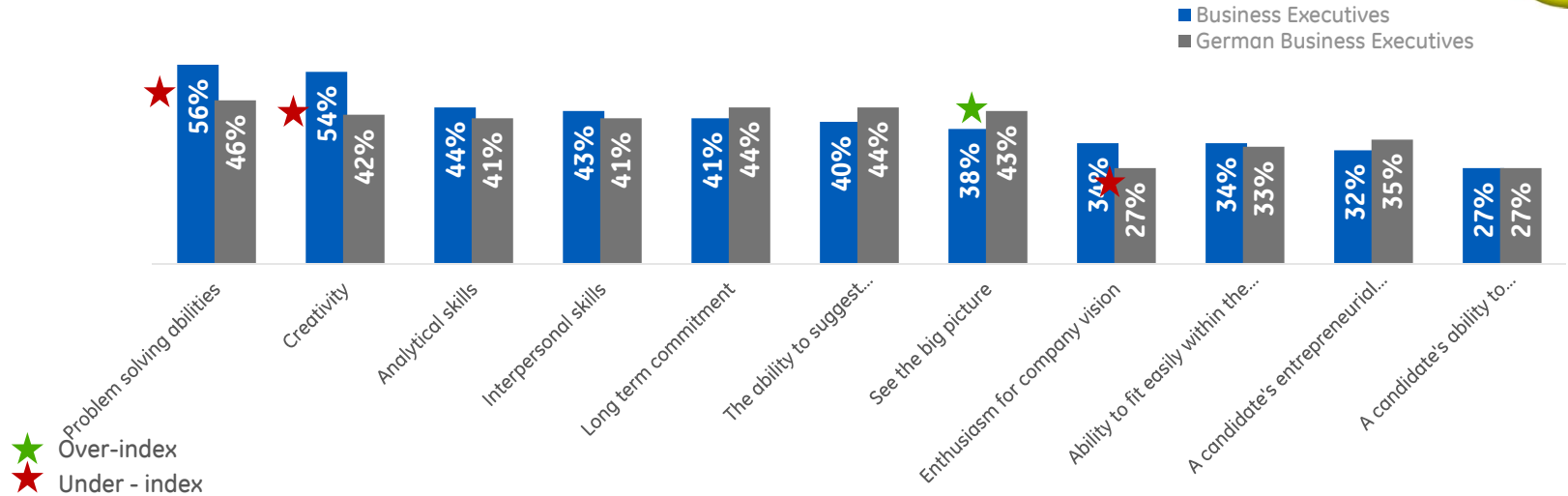
6 The Energy Sector is Ripe for Disruption: Globally, 61% of citizens believe that the energy sector can benefit greatly from new innovation approaches and answer the many challenges it faces. However, energy companies are less confident about the prospect of the 4th industrial revolution compared to other industries (50% confidence vs. 60%).

Creativity & Problem-Solving Key for Future Workforce:

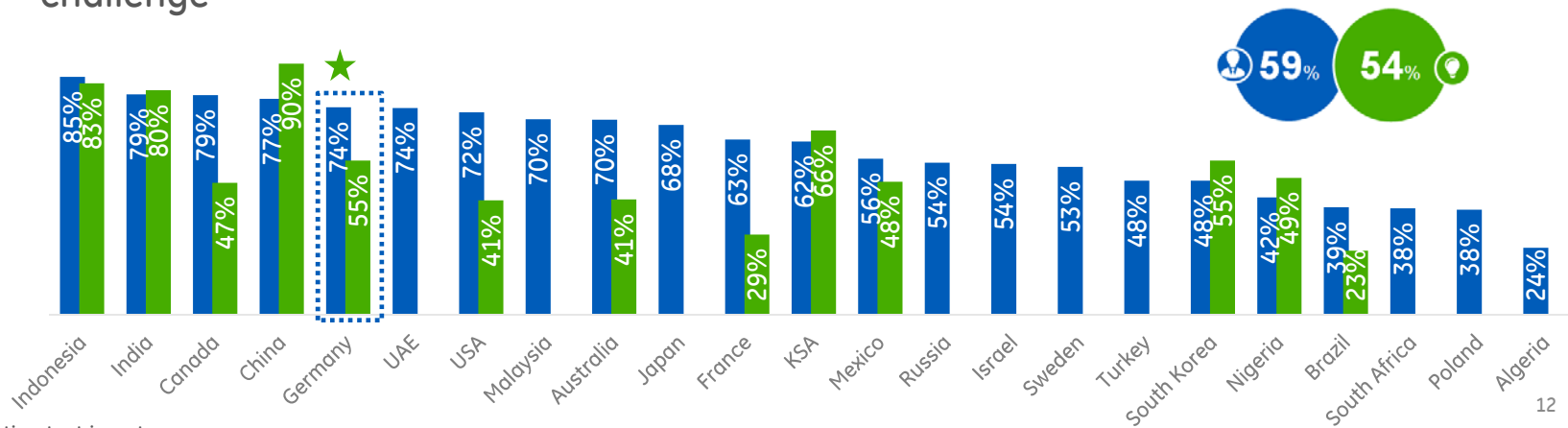
Future worker is changing. Executives are seeking problem solvers (56%) and creativity (54%), and an expected impact of the 4th industrial revolution is that some categories of skilled workers will be in high demand. Citizens are embracing the start-up ethos and value flexible (89%) and remote (79%) work. Only a few countries feel their education system is ready to address future skills, with informed citizens in countries like India (81%), China (78%) and Indonesia (76%) most confident.



The ideal talent are creative problem solvers, but entrepreneurs are not fully embraced



Only a few countries feel their education system is ready to answer the future skills challenge



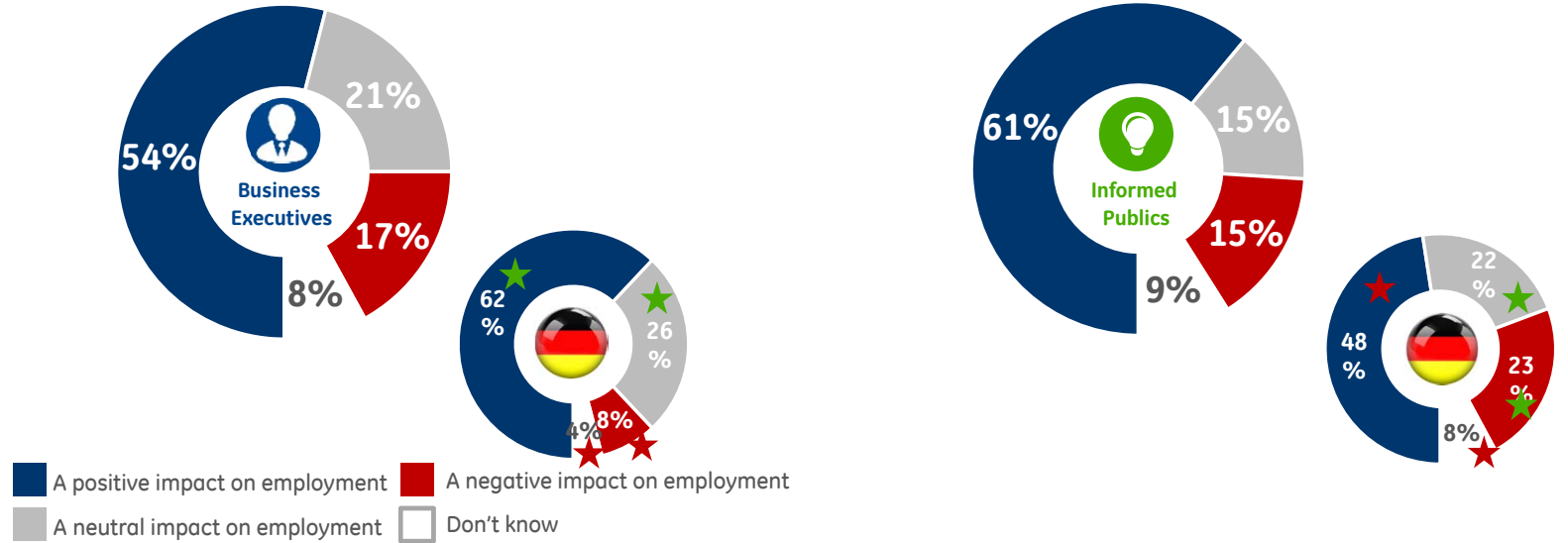
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Minds and Machines Working Together:

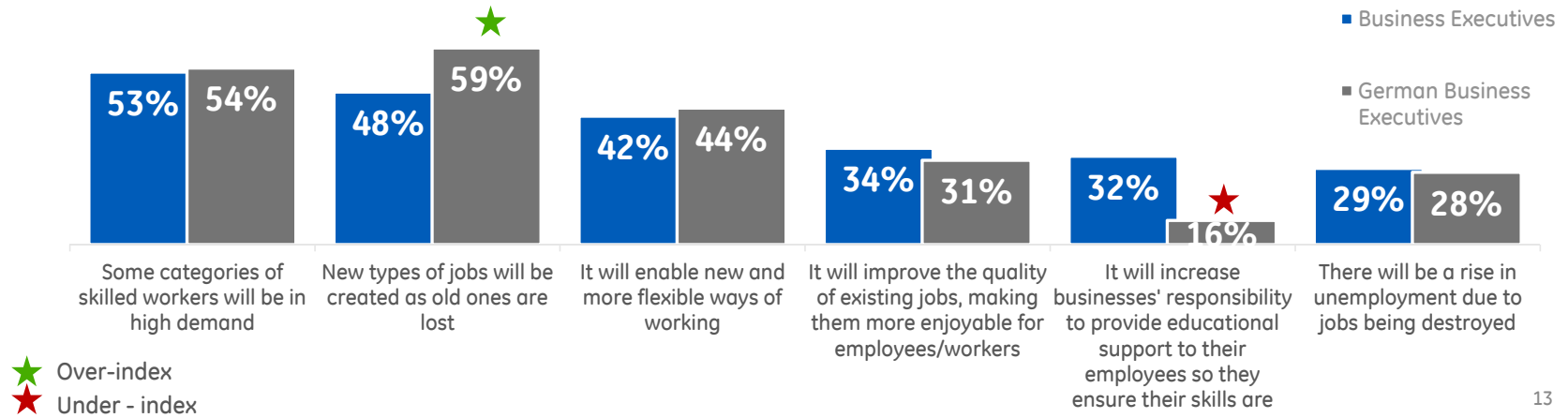
Business executives expect the digital revolution will make the workplace safer (43%) and create higher-value roles for workers (48%). Few fear any negative impact on employment as a result of the digital revolution; only 17% of business executives and 15% of citizens fear potential negative impact. Executives in the US, India, China or Germany anticipate a positive outcome in their country, while Japanese, French or Swedish execs are more skeptical



Executives and citizens anticipate a positive or neutral net impact on employment as a result of the digital revolution



The digital revolution is expected to change the nature of work

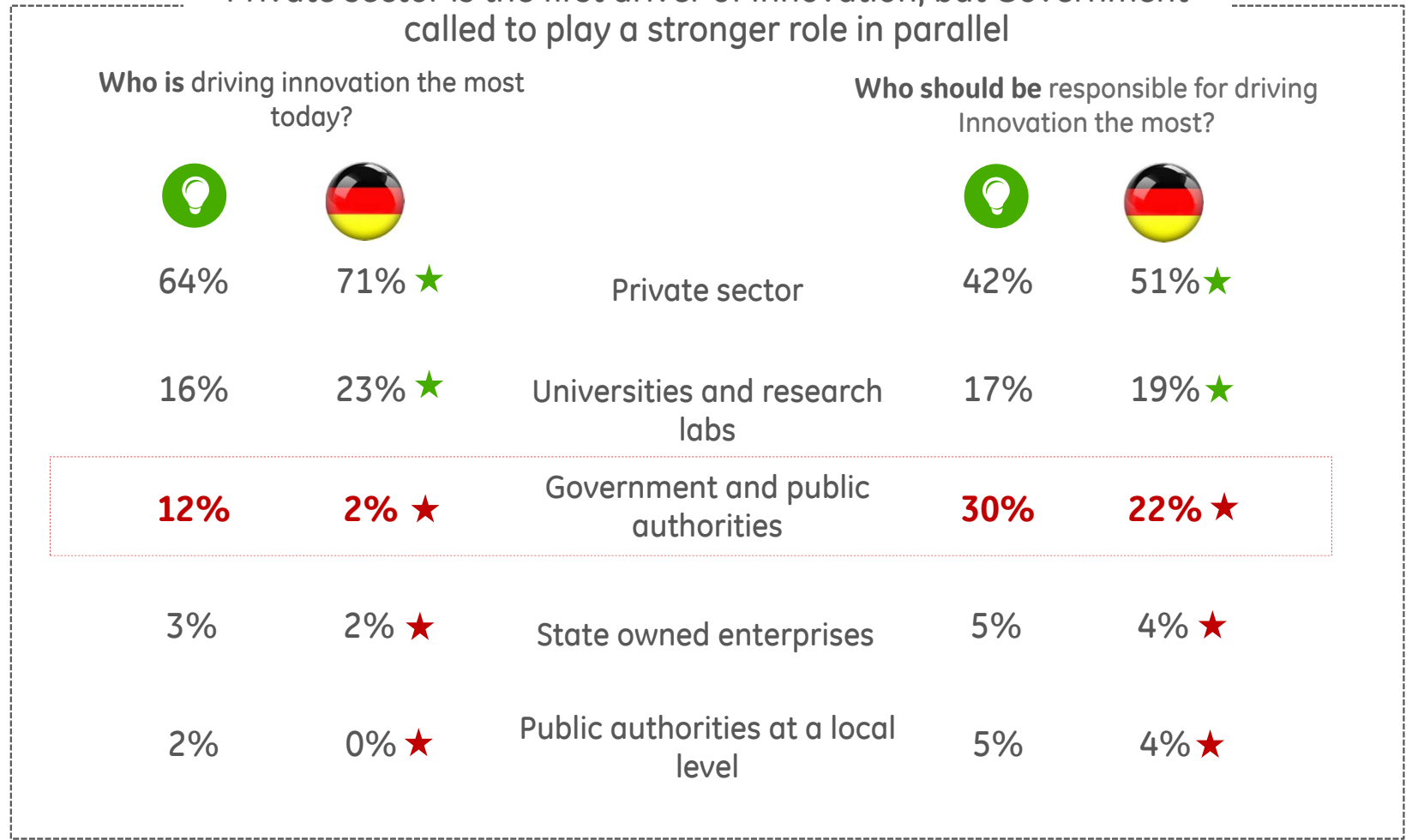


A Call for Greater Government Support:

Executives and citizens alike are calling for public authorities to play a more supportive role in innovation. While few citizens (12%) believe their government is the top driver of innovation in their country, more (30%) think it should be. 57% say their country's regulations are not supportive of innovative companies, although emerging markets are more positive in their assessment



Private sector is the first driver of Innovation, but Government called to play a stronger role in parallel



★ Over-index
★ Under-index

The Energy Sector is Ripe for Disruption:

Globally, 61% of citizens believe that the energy sector can benefit greatly from new innovation approaches and answer the many challenges it faces. However, energy companies are less confident about the prospect of the 4th industrial revolution compared to other industries (50% confidence vs. 60%).

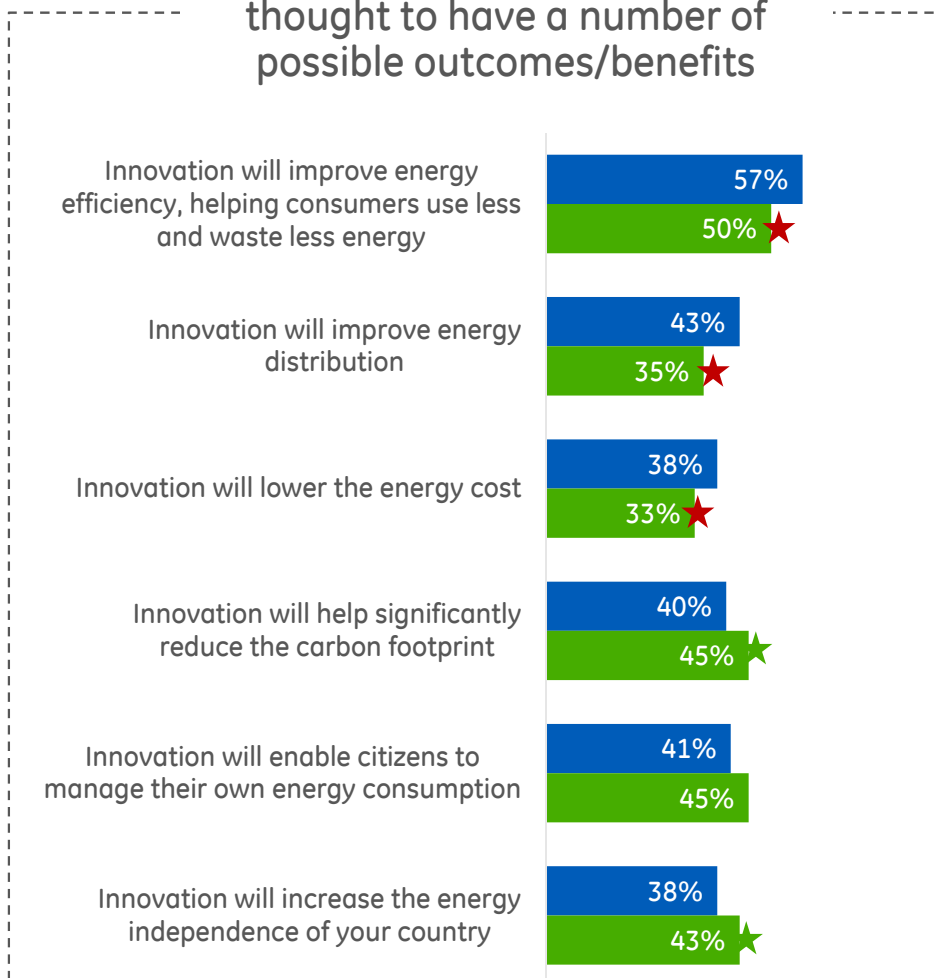


61% / 63%

of citizens believe the energy industry would benefit the most from investment in new innovation approaches

★ Over-index
★ Under - index

Innovation in the energy sector is thought to have a number of possible outcomes/benefits



■ Global informed public
■ German informed public

EXECUTIVE SUMMARY

GERMANY



Greater pressures, lower enthusiasm for the transformation at play



German executives and informed public largely agree that deep transformations are at play:

- 83% of executives and 88% of the public expect **Advanced Manufacturing to** radically transform the industrial sector in the next 10 years. **Robotics** and **automation** are expected to radically transform the job market and the nature of work in the same period (German BEs: 84% / German IPs: 88%)
- While German executives are confident the **digital revolution** will have a positive impact on employment (62% vs. 54% globally), the German public is more negative or sceptical (48% expect a positive impact vs. 61% globally). A majority of executives anticipate **new types of jobs** will be created as old ones are lost (59% vs. 48% globally)

In the meantime, more and more German businesses face **inertial barriers** to innovate successfully. From an incapacity to scale-up (71% vs. 42% in 2014 and 60% globally), to a lack of internal support from leadership (64% vs. 34% in 2014 and 54% globally), a lack of talent (66% vs. 48% in 2014 and 58% globally), a lack of investment (64% vs. 55% in 2014 and 60% globally), as well as internal inertia (77% vs. 52% in 2014 and 60% globally), and risk aversion (64% vs. 40% in 2014 and 58% globally).

The prospect of entering a **fourth Industrial revolution** leaves German executives sceptical, while the Informed public is more positive:

- They are amongst the **least optimistic** executives (German BEs: 39% vs. 68% globally / German IPs: 63% vs. 64% globally), the **least excited** (German BEs: 43% vs. 61% globally / German IPs: 61% vs. 65% globally), the **least confident** (German BEs: 46% vs. 60% globally / German IPs: 62% vs. 60% globally), the **least empowered** (German BEs: 48% vs. 62% globally / German IPs: 56% vs. 55% globally), and **in control** (German BEs: 49% vs. 59% globally / German IPs: 42% vs. 48% globally).

Both audiences as in a majority of countries acknowledge that businesses **risk of becoming obsolete** due to the digital transformation in place (German BEs: 84% / German IPs: 79%).



Could the 3rd world innovation champion be entering a disruption paralysis?

Germany maintains its position in the top 3 leading innovation countries, but it has lost 6 points since 2014. This year has seen German businesses fully embrace the new models and technologies:

- German executives now recognize the strategic value of big data (78% vs. 40% in 2014) and a majority of them have increased or continued to increase their **analytics capabilities** (84% vs. 48% in 2014) in the last year
- 8 in 10 executives are open to sharing the revenue streams generated by collaborative initiatives (80% vs. 68% globally). More German businesses are now seeing the ROI of collaborative innovation activities (81% vs. 61% in 2014)

Coming up with radical and disruptive ideas remains a challenge for half German businesses (55% vs. 60% globally). More than in many other countries, German executives see having innovation teams report directly to the CEO on a long term basis as best practice to be disruptive (49% vs. 30% globally). This is also the case for creating a set of metrics to select which innovations to keep or kill (40% vs. 32% globally).

Most German executives agree regulations around privacy and data protection are preventing businesses from launching more radical / transformative innovations (70% vs. 64% globally). In the meantime, the German informed public would rather protect their data and not get a perfect service (59% vs. 36% globally) and believe digital innovation should be designed around current privacy laws (73% vs. 65% globally).

In the meantime, only a minority of German executives believe the digital revolution is increasing business' responsibility to keep their employees' skills up-to-date (16% vs. 32% globally).

While the German informed public think the private sector is driving innovation the most today (71% vs. 64% globally), 22% think government and public authorities should be driving innovation the most (vs 30% globally), others preferring universities and research labs (23% vs 16% globally). One in two agree the government is making innovation a priority today (54% vs. 54% globally).



Data summary



Over-indexes compared to global average
Under-indexes compared to global average



Informed Public significantly higher or lower than the answer from Business executives

A welcome revolution		Global				Germany	
		2013	2014	2015		2015	
		BEs		BEs	IPs	BEs	IP
How does the prospect of entering a fourth Industrial Revolution make you feel?							
	Optimistic	n/a	n/a	68%	↓ 64%	39%	↑ 63%
	Empowered	n/a	n/a	62%	↓ 55%	48%	56%
	Excited	n/a	n/a	61%	↑ 65%	43%	↑ 61%
	Confident	n/a	n/a	60%	60%	46%	↑ 62%
	In control	n/a	n/a	59%	↓ 48%	49%	42%
	Curious	n/a	n/a	70%	72%	58%	71%
	In the next 10 years, Advanced Manufacturing will radically transform the industrial sector	n/a	n/a	86%	↑ 90%	83%	88%
	In the next 10 years, technological developments such as robotics and automation are going to radically transform the job market and nature of work			83%	87%	84%	88%
	Automation will increase workplace safety	n/a	n/a	43%	n/a	36%	n/a
	Automation will offer workers opportunities to assume new, potentially higher-value roles and responsibilities	n/a	n/a	48%	n/a	44%	n/a
	The digital revolution will have a positive impact on employment	n/a	n/a	54%	61%	62%	↓ 48%
	The digital revolution will have a negative impact on employment	n/a	n/a	17%	15%	8%	↑ 23%



Data summary



Over-indexes compared to global average



Under-indexes compared to global average



Informed Public significantly higher or lower than the answer from Business executives

Future jobs	Global				Germany		
	2013	2014	2015		2014	2015	
	BEs		IPs	BEs	BEs	IP	
There is currently a debate around the impact the digital revolution will have on employment ; which, if any, of the following outcomes are the most likely to happen in your country?							
There will be a rise in unemployment due to jobs being destroyed	n/a	n/a	29%	23%	n/a	28%	22%
New types of jobs will be created as old ones are lost	n/a	n/a	48%	48%	n/a	59%	55%
Some categories of skilled workers will be in high demand	n/a	n/a	53%	45%	n/a	54%	51%
It will improve the quality of existing jobs , making them more enjoyable for employees/workers	n/a	n/a	34%	29%	n/a	31%	29%
It will enable new and more flexible ways of working	n/a	n/a	42%	48%	n/a	44%	52%
It will increase businesses' responsibility to provide educational support to their employees so they ensure their skills are always up-to-date	n/a	n/a	32%	35%	n/a	16%	↑28%



Data summary



Over-indexes compared to global average

Under-indexes compared to global average

Embracing New Models and Technologies	Global				Germany			
	2013	2014	2015		2013	2014	2015	
	BEs		IPs		BEs	BEs	IP	
The revenue and profit generated by collaborative innovation activities has been growing over the last year	n/a	64%	77%	n/a	n/a	61%	81%	n/a
Is your firm open to sharing the revenue stream or the revenue losses that could be generated through a collaborative innovation initiative? % Yes	n/a	n/a	68%	n/a	61%	n/a	80%	n/a
How important do you think the following elements are for a company to be able to innovate successfully? To use big data and analytics to improve strategic knowledge and inform decision-making – Top 3	n/a	53%	61%	n/a	n/a	40%	78%	n/a
Has your company increased its ability to analyse large and complex amounts of data over the last year? % Yes	n/a	43%	73%	n/a	n/a	48%	84%	n/a



Data summary



Over-indexes compared to global average

Under-indexes compared to global average



Informed Public significantly higher or lower than the answer from Business executives

Disruptive Innovation: The Solution and the Challenge	Global			Germany			
	2013	2014	2015	2014	2015		
	BEs		IPs	BEs	BEs	IP	
The most innovative companies not only launch new products and services but also create a new market that didn't previously exist	n/a	n/a	90%	93%	n/a	85%	87%
The difficulty to come up with radical and disruptive ideas is a key challenge to innovate efficiently	-	59%	60%	↓ 40%	57%	55%	45%
More and more businesses face " DIGITAL DARWINISM " - becoming obsolete as technology is evolving faster than they can adapt	n/a	n/a	81%	84%	n/a	84%	79%
In the past few years, what kind of innovations has contributed the most to your company's performance?							
The development of entirely new products or services	n/a	n/a	47%	n/a	n/a	37%	n/a
The improvement of existing products or services	n/a	n/a	58%	n/a	n/a	50%	n/a
The development of new business models	n/a	n/a	34%	n/a	n/a	32%	n/a
The development of new business processes to improve profitability	n/a	n/a	46%	n/a	n/a	38%	n/a
The development of more affordable new products and services for the customer	n/a	n/a	43%	n/a	n/a	36%	n/a
The development of more sustainable and eco-friendly processes, products or services	n/a	n/a	37%	n/a	n/a	41%	n/a
The development or improvement of products customized to local circumstances or conditions	n/a	n/a	44%	n/a	n/a	46%	n/a
The development of new customer services (CRM, After Sales, Loyalty etc.)	n/a	n/a	38%	n/a	n/a	43%	n/a



Data summary



Over-indexes compared to global average
Under-indexes compared to global average



Informed Public significantly higher or lower than the answer from Business executives

Challenges preventing businesses' ability to innovate efficiently	Global			Germany		
	2013	2014	2015	2014	2015	
		BEs	IPs	BEs	BEs	IP
The difficulty to come up with radical and disruptive ideas	n/a	57%	60% ↓ 40%	57%	55%	45%
The difficulty to define an effective business model to support new ideas and make them profitable (BE - 4 point scale, IC - 10 point scale (T3B))	n/a	58%	64% ↓ 36%	60%	73%	↓ 27%
The incapacity to scale up successful innovations, to a wider or international market	n/a	59%	60% ↓ 40%	42%	71%	↓ 37%
The lack of internal support from leadership team/top management	n/a	43%	54% ↓ 47%	34%	64%	↓ 34%
A lack of talent / inadequate skillset	n/a	55%	58% ↓ 41%	48%	66%	↓ 41%
The lack of sufficient investment and financial support	n/a	55%	60% 50%	55%	64%	↓ 43%
The internal inertia and the incapacity to be nimble, failing at rapidly converting ideas into actions	n/a	57%	60% ↓ 43%	52%	77%	↓ 48%
The incapacity of the business to take risks	n/a	49%	58% ↓ 44%	40%	64%	↓ 35%
The ability to acquire and integrate external innovations into the company as a whole	n/a	n/a	63% ↓ 36%	n/a	74%	↓ 30%

NB: Slight question changes to response options between 2014 vs. 2015, however the data is still comparable



Data summary

■ Over-indexes compared to global average
■ Under-indexes compared to global average

Best practices	Global			Germany			
	2013	2014	2015	2014	2015		
	BEs		IPs	BEs	BEs	IP	
Top 3 best practices to foster and enable reliable and radical innovation							
To have a clear process and structure in place to manage innovation	n/a	n/a	49%	n/a	n/a	39%	n/a
To reward those within the organization who create the next innovation that will make one of their products/services obsolete	n/a	n/a	36%	n/a	n/a	37%	n/a
To create a set of metrics to decide which product or service should be funded or be killed	n/a	n/a	32%	n/a	n/a	40%	n/a
To have innovation teams report directly to the CEO on a long term basis	n/a	n/a	30%	n/a	n/a	49%	n/a
To rely on consumer research as a foundation for innovative products/services	n/a	n/a	31%	n/a	n/a	31%	n/a
To encourage and reward innovative people	n/a	n/a	45%	n/a	n/a	35%	n/a
To create a connected culture where idea sharing is facilitated and where all the contributing parties are recognized and rewarded	n/a	n/a	45%	n/a	n/a	43%	n/a
Turn data and analytics into actionable decision making tool	n/a	n/a	33%	n/a	n/a	29%	n/a
Top 3 most challenging best practices to implement							
To have a clear process and structure in place to manage innovation	n/a	n/a	42%	n/a	n/a	40%	n/a
To reward those within the organization who create the next innovation that will make one of their products/services obsolete	n/a	n/a	35%	n/a	n/a	41%	n/a
To create a set of metrics to decide which product or service should be funded or be killed	n/a	n/a	42%	n/a	n/a	41%	n/a
To have innovation teams report directly to the CEO on a long term basis	n/a	n/a	30%	n/a	n/a	34%	n/a
To rely on consumer research as a foundation for innovative products/services	n/a	n/a	35%	n/a	n/a	42%	n/a
To encourage and reward innovative people	n/a	n/a	33%	n/a	n/a	32%	n/a
To create a connected culture where idea sharing is facilitated and where all the contributing parties are recognized and rewarded	n/a	n/a	43%	n/a	n/a	38%	n/a
Turn data and analytics into actionable decision making tool	n/a	n/a	40%	n/a	n/a	35%	n/a



Data summary



Over-indexes compared to global average



Under-indexes compared to global average



Informed Public significantly higher or lower than the answer from Business executives

Approach to innovation / Everybody's Starting Up?	Global			Germany			
	2013	2014	2015	2014	2015		
	BEs		IPs	BEs	BEs	IP	
Does your company have a clear innovation strategy? % Yes	n/a	n/a	68%	n/a	n/a	77%	n/a
My business is more focused on...							
Incremental innovation , improving existing products and solutions	n/a	n/a	63%	n/a	n/a	64%	n/a
Internal innovation , investing in innovation to optimize internal processes and ways of working	n/a	n/a	60%	n/a	n/a	63%	n/a
Maximizing performance of existing revenue streams and business models	n/a	n/a	58%	n/a	n/a	58%	n/a
Innovating organically , leveraging the existing skills and resources within the company	n/a	n/a	74%	n/a	n/a	59%	n/a
When innovating, it is best...							
To protect the core business as much as possible, so it continues to generate the profitability needed to support Research & Innovation efforts	n/a	n/a	64%	n/a	n/a	56%	n/a
To get to market as quickly as possible to keep an edge on competition, even if this means having an imperfect product or service and improving it along the way	n/a	n/a	46%	n/a	n/a	49%	n/a
The "start-up" ethos is increasingly becoming the example norm for creating an innovation culture within companies of all sizes	n/a	n/a	81%	79%	n/a	77%	76%
With digital transformation we are observing the rise of 'Nomad employees'	n/a	n/a	71%	↑ 84%	n/a	65%	↑ 75%



Data summary



Over-indexes compared to global average
Under-indexes compared to global average



Informed Public significantly higher or lower than the answer from Business executives

A Call for Greater Government Support	Global			Germany		
	2013	2014	2015	2014	2015	
	BEs		IPs	BEs	BEs	IP
Who do you think is driving innovation <u>the most</u> today <u>in your country?</u> - Government and public authorities at national level	n/a	n/a	13%	12%	n/a	7% 2%
Whose responsibility it is to be driving innovation <u>the most</u> in your country today? Government and public authorities at national level	n/a	n/a	n/a	30%	n/a	n/a 22%
Who do you think is driving innovation <u>the most</u> today <u>in your country?</u> - Public authorities at local level (region / city)	n/a	n/a	3%	2%	n/a	7% ↑ 0%
Who do you think is driving innovation <u>the most</u> today <u>in your country?</u> - Universities and research labs	n/a	n/a	12%	↑ 16%	n/a	9% ↑ 23%
Who do you think is driving innovation <u>the most</u> today <u>in your country?</u> - Individual entrepreneurs and start-ups	n/a	n/a	20%	20%	n/a	14% 20%
Who do you think is driving innovation <u>the most</u> today <u>in your country?</u> - Small and medium companies (10 to 250 employees)	n/a	n/a	16%	16%	n/a	30% 26%
Who do you think is driving innovation <u>the most</u> today <u>in your country?</u> - Large enterprises (more than 250 employees) headquartered in your country	n/a	n/a	14%	14%	n/a	14% 18%
Who do you think is driving innovation <u>the most</u> today <u>in your country?</u> - Multinational companies investing in your country	n/a	n/a	18%	↓ 15%	n/a	9% 8%
Who do you think is driving innovation <u>the most</u> today <u>in your country?</u> - State owned enterprises in your country (SoE)	n/a	n/a	4%	3%	n/a	11% ↓ 2%
Whose <u>responsibility it is to be driving innovation the most</u> in your country? - Public authorities at local level (region / city)	n/a	n/a	n/a	5%	n/a	n/a 4%
Whose <u>responsibility it is to be driving innovation the most</u> in your country? - Universities and research labs	n/a	n/a	n/a	17%	n/a	n/a 19%
Whose <u>responsibility it is to be driving innovation the most</u> in your country? - Individual entrepreneurs and start-ups	n/a	n/a	n/a	11%	n/a	n/a 11%
Whose <u>responsibility it is to be driving innovation the most</u> in your country? - Small and medium companies (10 to 250 employees)	n/a	n/a	n/a	10%	n/a	n/a 17%
Whose <u>responsibility it is to be driving innovation the most</u> in your country? - Large enterprises (250+ employees) headquartered in your country	n/a	n/a	n/a	11%	n/a	n/a 17%
Whose <u>responsibility it is to be driving innovation the most</u> in your country? - Multinational companies investing in your country	n/a	n/a	n/a	10%	n/a	n/a 6%
Whose <u>responsibility it is to be driving innovation the most</u> in your country? - State owned enterprises in your country (SoE)	n/a	n/a	n/a	5%	n/a	n/a 4%



Data summary



Over-indexes compared to global average
Under-indexes compared to global average



Informed Public significantly higher or lower than the answer from Business executives

Policies	Global			Germany			
	2013	2014	2015	2014	2015		
	BEs		IPs	BEs	BEs	IP	
Regulations around privacy and data protection are preventing businesses from launching more radical / transformative innovations	n/a	n/a	64%	↓ 56%	n/a	70%	↓ 60%
Regulations around privacy and data protection are preventing businesses from adopting more radical / transformative innovations	n/a	n/a	64%	n/a	n/a	70%	n/a
Regulations in my country today are not supportive of innovative companies	n/a	n/a	n/a	57%	n/a	n/a	52%
Regulations in my country today are supportive of innovative companies	n/a	n/a	n/a	43%	n/a	n/a	48%
I am willing to allow access to the data I generate if this will allow me to get a better service	n/a	n/a	n/a	64%	n/a	n/a	41%
I would rather protect my data and not get a perfect service	n/a	n/a	n/a	36%	n/a	n/a	59%
Privacy laws should be relaxed to support digital innovations	n/a	n/a	n/a	35%	n/a	n/a	27%
Digital innovation should be designed around current privacy laws	n/a	n/a	n/a	65%	n/a	n/a	73%
IP protection is an enabler of innovation	n/a	n/a	n/a	77%	n/a	n/a	81%
IP protection is a disabler of innovation	n/a	n/a	n/a	23%	n/a	n/a	19%
Our government is making innovation a priority	n/a	n/a	n/a	54%	n/a	n/a	54%
Our government should do more to communicate the importance of innovation in our country to businesses	n/a	n/a	n/a	93%	n/a	n/a	88%
Our government should do more to emphasise the importance of innovation in our country to citizens	n/a	n/a	n/a	95%	n/a	n/a	90%
Our government should focus less on driving innovation in our country	n/a	n/a	n/a	30%	n/a	n/a	17%
Government should be doing more to attract foreign innovative companies into our country	n/a	n/a	n/a	88%	n/a	n/a	74%
Government should be doing more to support innovative companies in our country today	n/a	n/a	n/a	93%	n/a	n/a	74%
Our government should be doing more to support our innovative companies in exporting their products/services	n/a	n/a	n/a	94%	n/a	n/a	91%
Our government should be doing more to make our country a leading international country for supporting innovation	n/a	n/a	n/a	95%	n/a	n/a	90%



Data summary



Over-indexes compared to global average



Under-indexes compared to global average



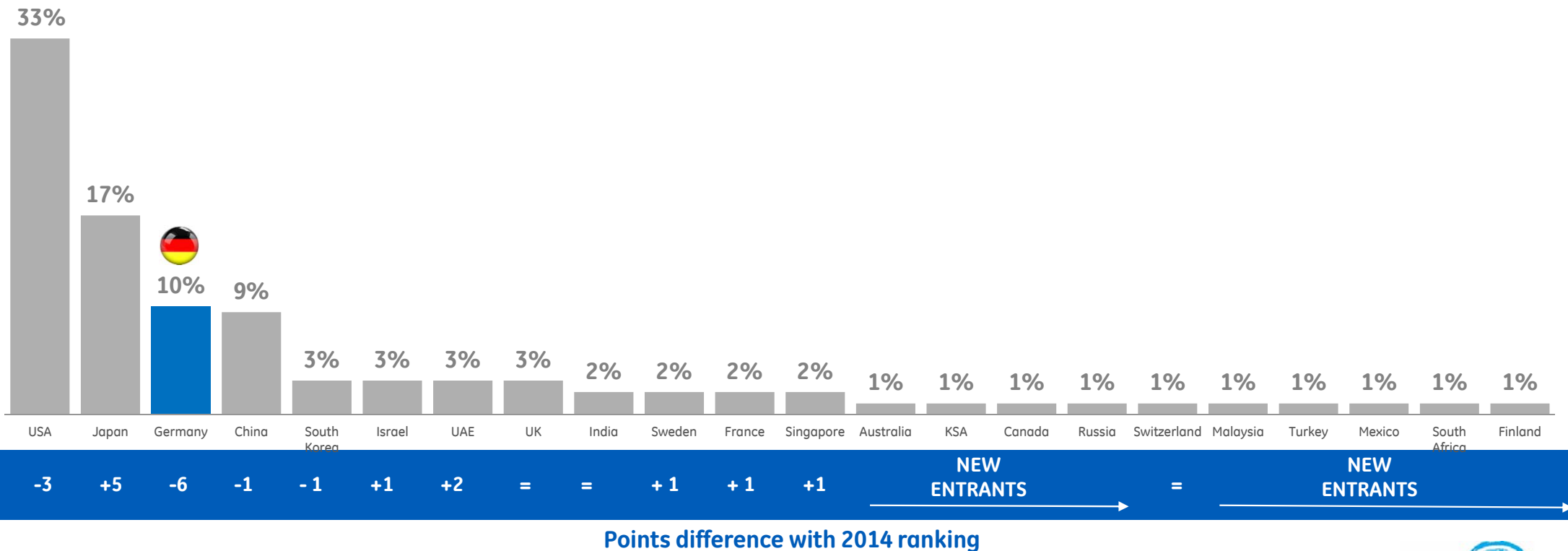
Informed Public significantly higher or lower than the answer from Business executives

Talent / Ideal candidate	Global			Germany			
	2013	2014	2015	2014	2015		
	BEs		IPs	BEs	BEs	IP	
In my country, the current education system is adapted to fulfil the private sectors' demand for new talent and skills	n/a	n/a	59%	54%	n/a	74%	↓ 55%
Beyond having the necessary technical qualifications for the job, what are the main attributes you look for/companies look for in candidates when considering them for a job application?							
Creativity	n/a	n/a	54%	↓ 49%	n/a	42%	41%
Willingness to commit to the company long-term to build their career there	n/a	n/a	41%	↓ 31%	n/a	44%	↓ 27%
Analytical skills	n/a	n/a	44%	45%	n/a	41%	50%
Entrepreneurial spirit	n/a	n/a	32%	29%	n/a	35%	30%
Interpersonal skills	n/a	n/a	43%	41%	n/a	41%	53%
Ability to challenge the status quo and suggest improvements to existing ways of working	n/a	n/a	40%	↓ 31%	n/a	44%	↓ 25%
Ability to fit easily within the existing company culture	n/a	n/a	34%	33%	n/a	33%	27%
Enthusiasm for the company vision	n/a	n/a	34%	32%	n/a	27%	27%
Ability to see the "big picture"	n/a	n/a	38%	↓ 33%	n/a	43%	34%
Ability to navigate uncertainty with ease	n/a	n/a	27%	24%	n/a	27%	↓ 10%
Problem solving abilities	n/a	n/a	56%	↑ 60%	n/a	46%	↑ 63%

INNOVATION CHAMPIONS

Innovation champion – Japan is back, Germany down

What is the country that you consider to be the leading innovation champion?

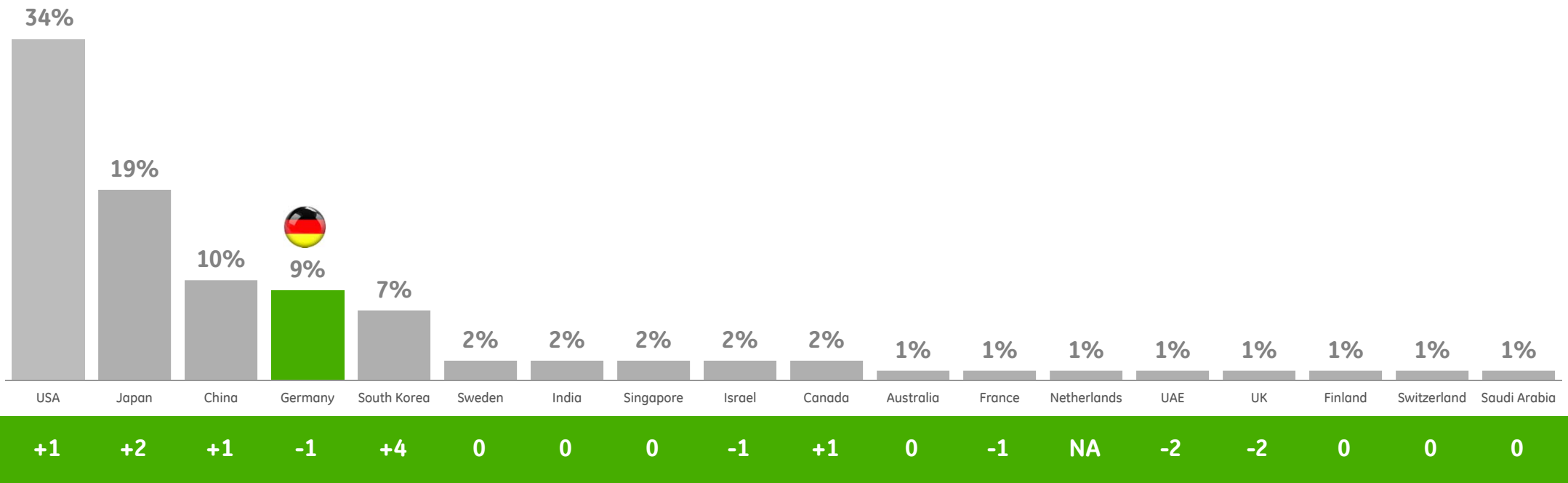


Q1. What is THE country that you consider to be the leading innovation champion? Base business executives: 2,748. Germany Base business executives: 101.



Innovation champion – a consistent perspective from Informed Citizens

What is the country that you consider to be the leading innovation champion?



Points difference between the Business Executives and Informed Public ranking



Q1. What is THE country that you consider to be the leading innovation champion? Base Informed public: 1,346. Base Informed public: 105



Alignment between perceptions and reality



	Global perception	"Reality"*
USA	1	2
Japan	2	7
Germany	3	3
China	4	10
South Korea	5	4
Sweden	6	1
France	7	8
Canada	8	5
Australia	9	6
India	10	20
Israel	10	9
Russia	12	15
UAE	13	14
Malaysia	14	11
Poland	14	13
Turkey	14	17
Brazil	17	19
KSA	18	12
South Africa	19	18
Indonesia	19	21
Mexico	21	16
Algeria	22	22
Nigeria	23	23



Business Executives

*INSEAD Global Innovation Index - 2015



2016 GE GLOBAL INNOVATION BAROMETER KEY FINDINGS

A WELCOME REVOLUTION

Both Business Executives and Informed Citizens are optimistic about the digital transformation of the world.

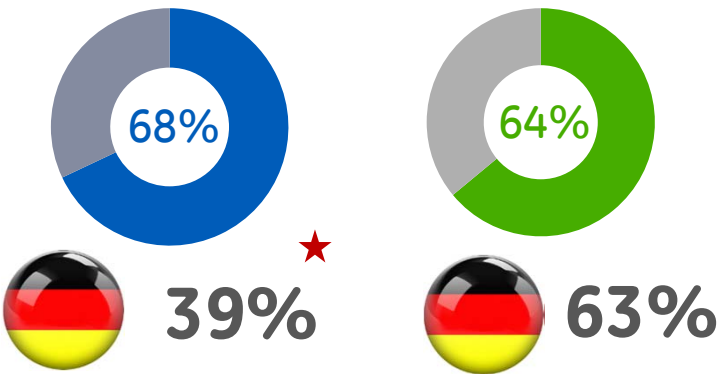
Business Executives (68%) and Informed Citizens (64%) both cite positive anticipation of the 4th Industrial Revolution, with few worrying that the digital revolution will have a negative impact on employment.

Asian markets feel especially empowered.

86%

Business Executives believe Advanced Manufacturing will radically transform the industrial sector.

Executives and citizens alike embrace the 4th Industrial Revolution



OPTIMISTIC about the prospect of entering a 4th Industrial Revolution

★ Over-index
★ Under - index

The 4th Industrial Revolution – or the ‘Industrial Internet’ - is the next wave of innovation impacting the way the world connects and optimizes machines. Through the use of sensors, advanced analytics and brilliant machines, the 4th Industrial Revolution is profoundly transforming the way machines connect and communicate, enabling productivity and efficiency gains, anticipating maintenance before breakdowns occur and transforming today’s workforce.

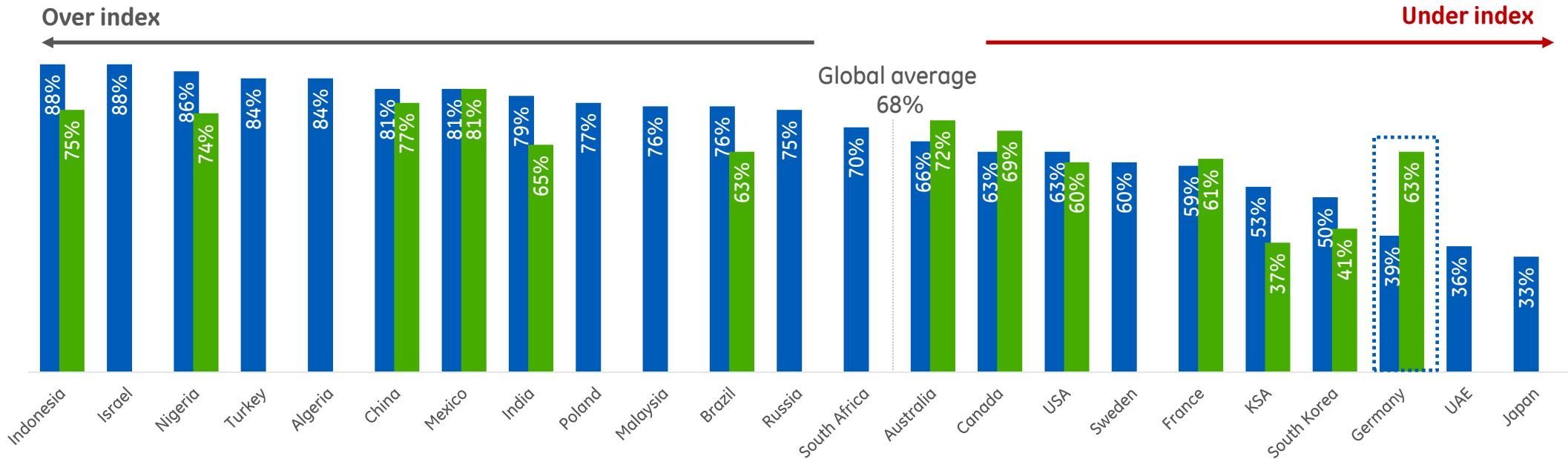


Q25. / Q23. How does the prospect of entering a fourth industrial revolution make you feel? Base business executives: 2,748. Base informed public: 1,346. Germany Base business executives: 101 Germany Base informed public: 105



Positivity prevails across a majority of surveyed countries

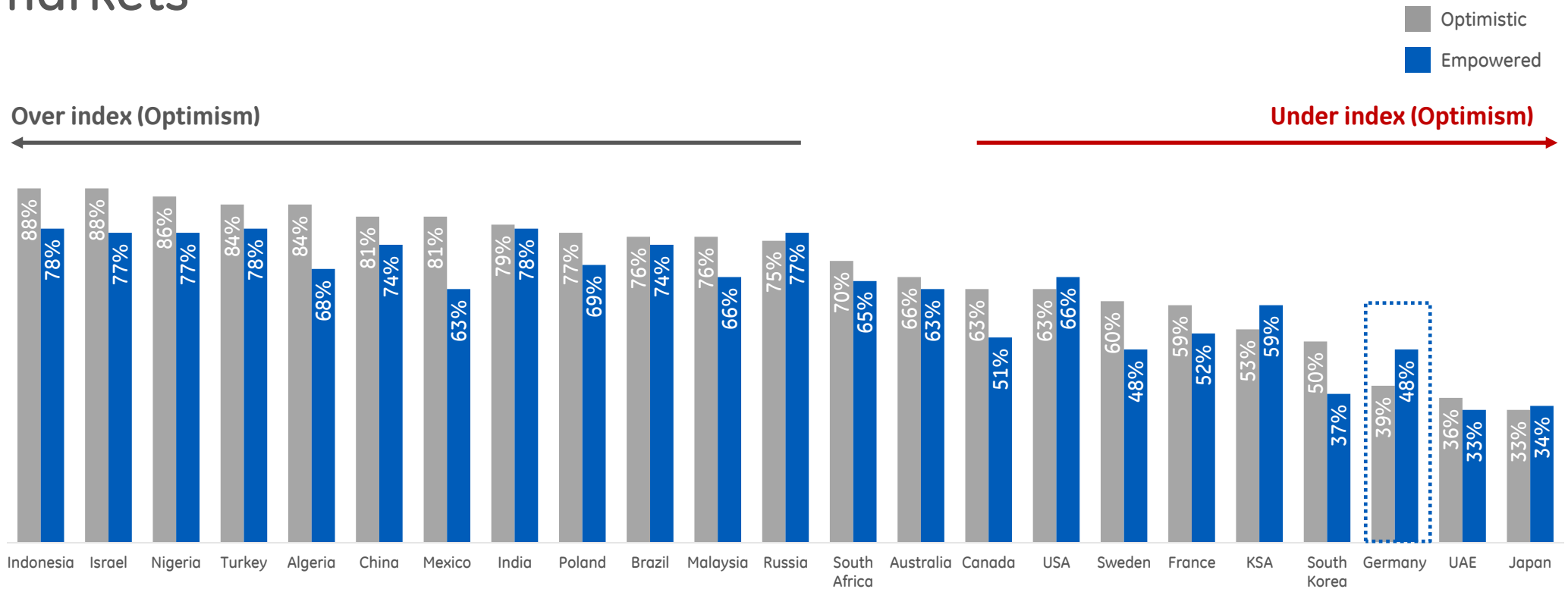
Optimism about the 4th industrial revolution



Q25. / Q23 How does the prospect of entering a fourth Industrial Revolution make you feel? Base business executives: 2,748. Base informed public: 1,346. Germany. Base business executives: 101 Base informed public: 105.



Business leaders from emerging economies are feeling more optimistic and more empowered than their peers in developed markets



Q25. How does the prospect of entering a fourth industrial revolution make you feel. Base business executives: 2,748. Germany Base business executives: 101

Both business leaders and citizens have a positive view of macro trends shaping the innovation landscape

DIGITAL REVOLUTION

Few fear a potential negative impact on employment of the digital revolution



ADVANCED MANUFACTURING

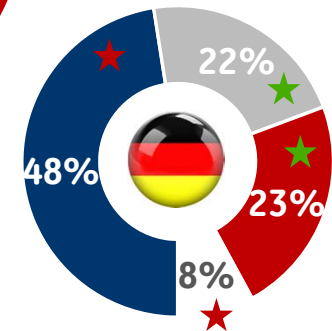
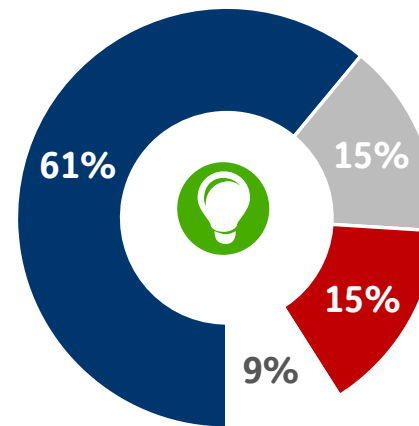
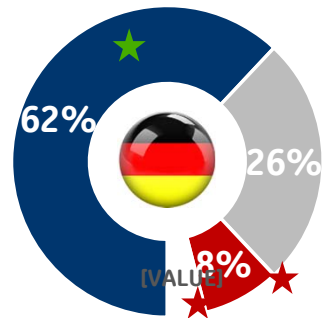
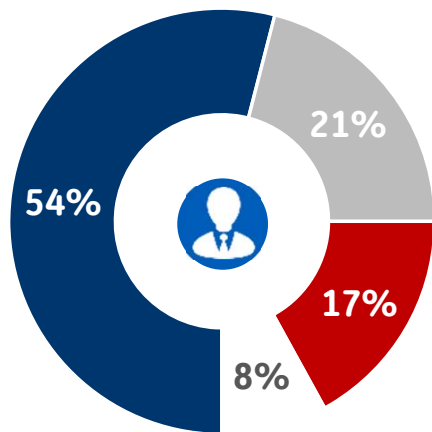
Most believe Advanced Manufacturing will radically transform the industrial sector



Q23.A. / Q22.A. There is currently a debate around the impact the digital revolution will have on employment. In your opinion, what will be the impact of the digital revolution? / Q25. / Q23 How does the prospect of entering a fourth Industrial Revolution make you feel? Q4./Q14 How far do you agree or disagree with the following statements? Base business executives: 2,748. Base informed public: 1,346. Germany Base business executives: 101. Germany Base informed public: 105



Executives and citizens anticipate a positive or neutral net impact on employment as a result of the digital revolution



★ Over-index
★ Under-index



Q22.A / Q23.A There is currently a debate around the impact the digital revolution will have on employment. In your opinion, what will be the impact of the digital revolution?
 Business executives n= 2,748 Informed Public n= 1,346. Germany Business executives n= 101. Germany Informed Public n= 105.



EMBRACING NEW MODELS AND TECHNOLOGIES

Businesses are adapting to this new context through investments and partnerships, and it is paying dividends.

The majority of businesses (77%) are seeing financial results from collaboration (up from 64% in 2014).

61%

of Business Executives are using big data to inform decision-making (up from 53% in 2014).

Integrating analytics is becoming more natural and delivers better results and outcomes for businesses

How important do you think the following elements are for a company to be able to **innovate successfully**?

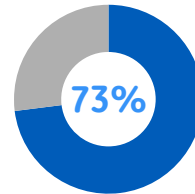


61%


 **78%**

Use big data and analytics to improve strategic knowledge and inform decision-making 53% (2014 DATA)

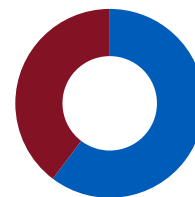
Companies increasing their ability to analyze large amounts of data in the last year?



73% Of companies have increased their ability to analyze, up from 43% in 2014

 **84%**
up from 48%

Of those who have increased their ability...



59% Have seen a positive outcome

41% Yet to see a positive outcome

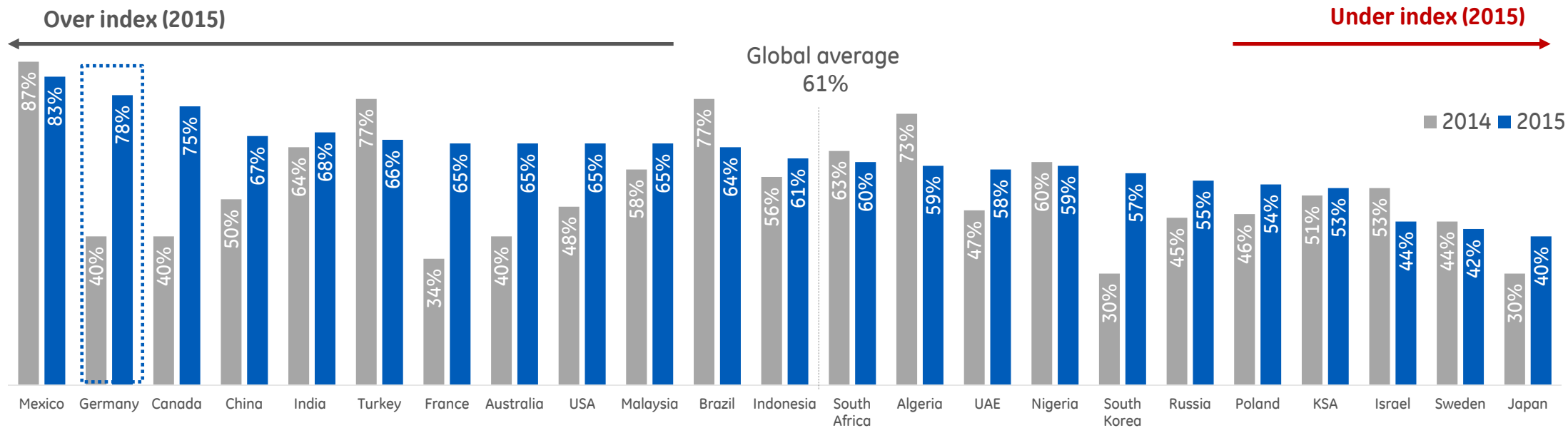


Q7. On a scale from 1 to 10, how important do you think the following elements are for a company to be able to innovate successfully? Top 3. Q19. Has your company increased its ability to analyse large and complex amounts of data over the last year? Business executives n= 2,748. Germany Business executives n= 101.



Executives are increasingly recognizing the strategic value of data and analytics

Importance to be able to innovate successfully: To use big data and analytics to improve strategic knowledge and inform decision-making (2015)



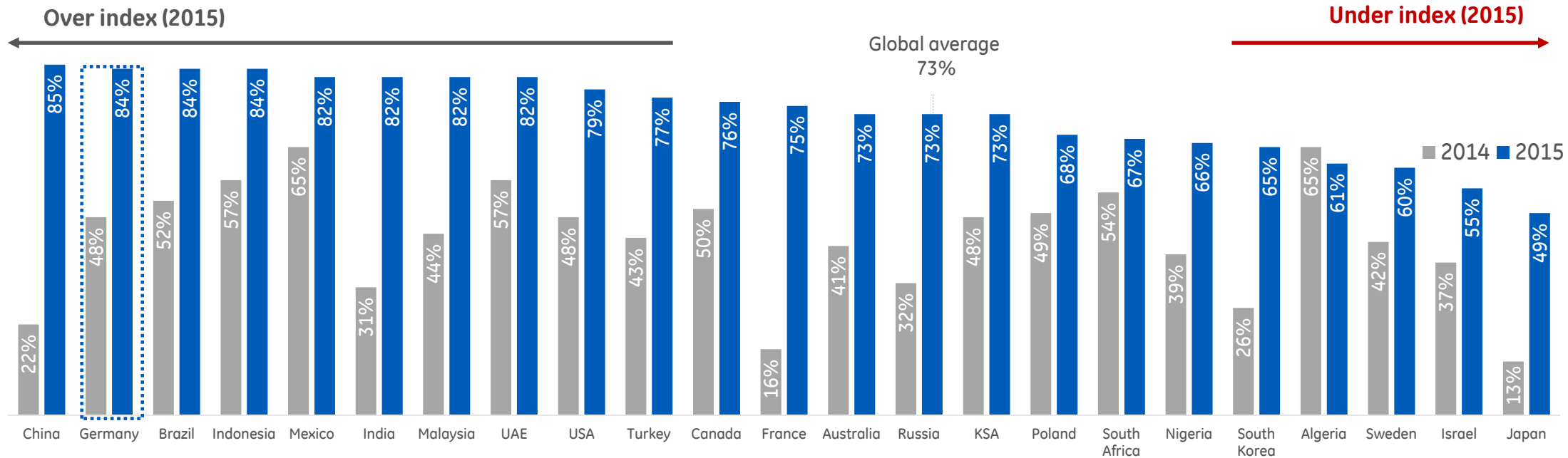
Q7. On a scale from 1 to 10, how important do you think the following elements are for a company to be able to innovate successfully? Top 3. 2014 – To use analytics and predictive knowledge 2015 – To use big data and analytics to improve strategic knowledge and inform decision-making. Business executives n= 2,748. Germany Business executives n= 101.

42



We see global growth in companies increasing their ability to analyze large amounts of data

Companies increasing their ability to analyze large amounts of data in the last year?

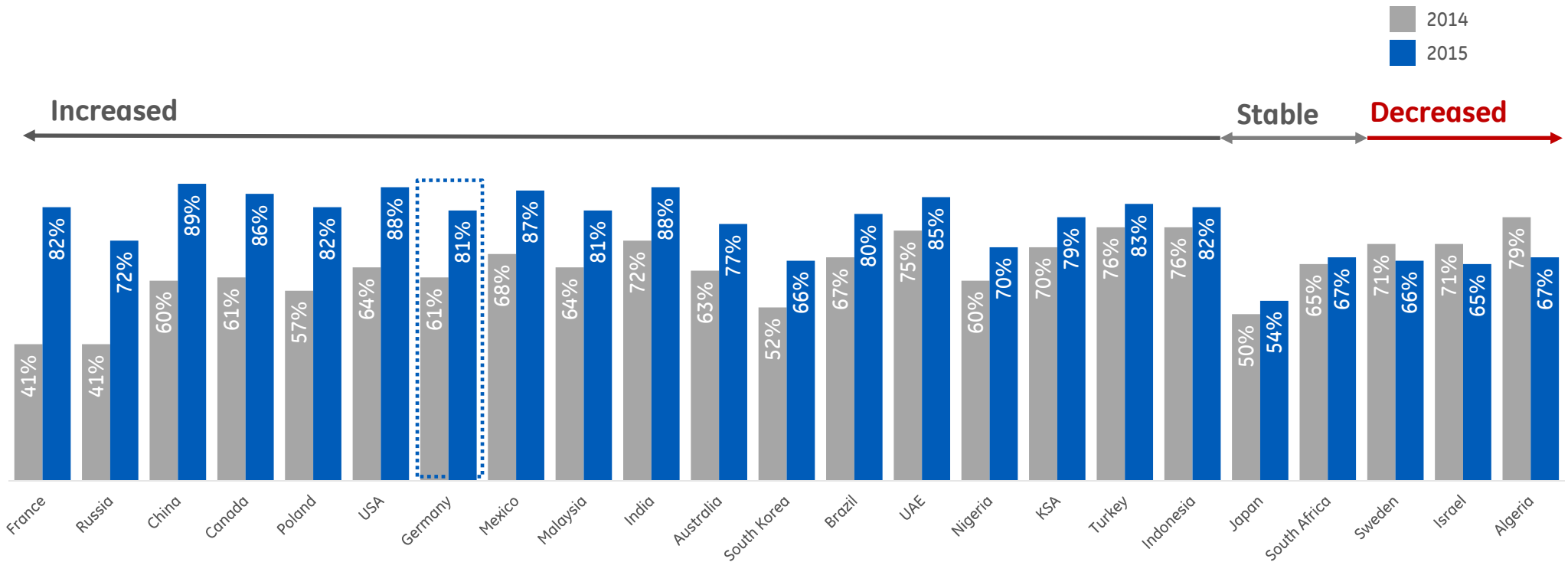


Q19. Has your company increased its ability to analyse large and complex amounts of data over the last year? % Yes. Base business executives: 2,748. Germany Base business executives: 101.



Collaboration has increased in most markets

The revenue and profit generated by collaborative innovation activities has been growing over the last year



Q18A. Has the revenue and profit generated by collaborative innovation activities been growing over the last year? % Yes. Base business executives: 2,748. Germany Base business executives: 101.



Leaders are more willing to share both the gains and risks of collaborating, and they are seeing growing results

More than

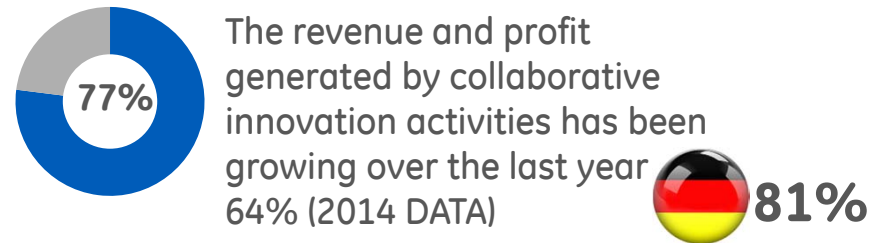
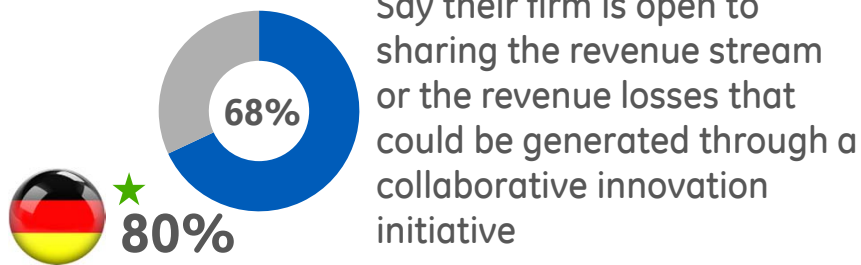
77%



have increased revenue and profit by collaborative innovation in the last year – up from **64%** in 2014. This is even more the case for...

85% Those whose innovation strategies are steered towards breakthrough innovations

81% Those who find that to come up with radical and disruptive ideas is a challenge preventing their business' ability to innovate



★ Over-index
★ Under-index

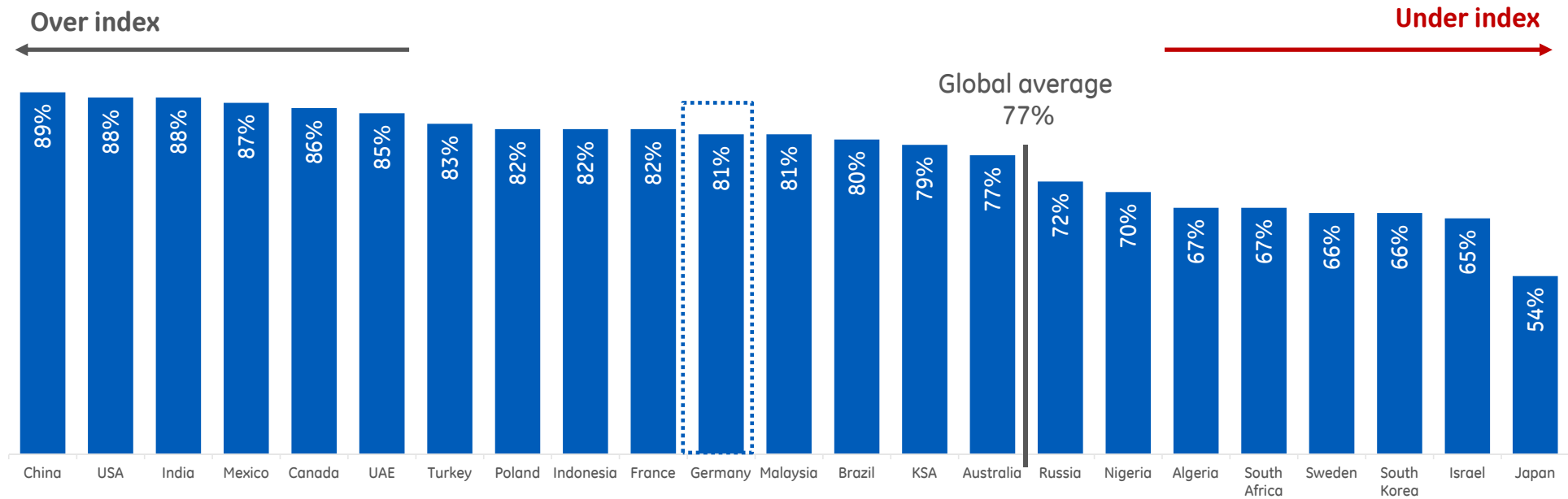


Q18A. Has the revenue and profit generated by collaborative innovation activities been growing over the last year? % Yes. Base business executives: 2,748
Q18B. Is your firm open to sharing the revenue stream or the revenue losses that could be generated through a collaborative innovation initiative? % Yes. Base business executives: 2,748. Germany Base business executives: 101



Leaders are seeing an increasing financial return on collaborative innovation

The revenue and profit generated by collaborative innovation activities has been growing over the last year

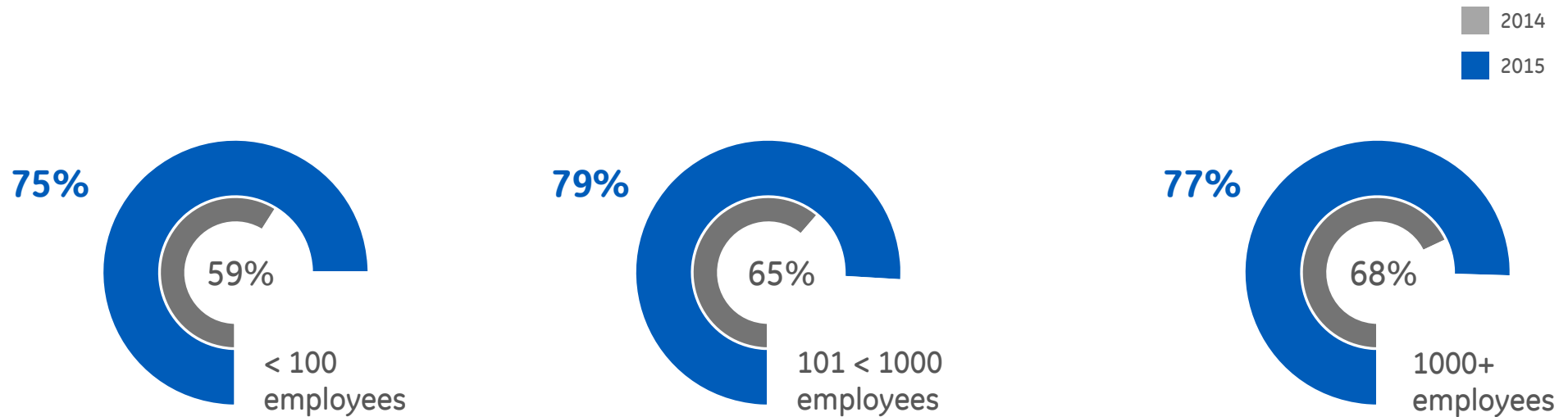


Q18A. Has the revenue and profit generated by collaborative innovation activities been growing over the last year? % Yes. Base business executives: 2,748. Germany Base business executives: 101



The biggest increase in collaboration has been amongst smaller businesses

The revenue and profit generated by **collaborative innovation activities** has been growing over the last year



Q18A. Has the revenue and profit generated by collaborative innovation activities been growing over the last year? % Yes. Base business executives: 2,748. Germany Base business executives: 101.



DISRUPTIVE INNOVATION: THE SOLUTION AND THE CHALLENGE

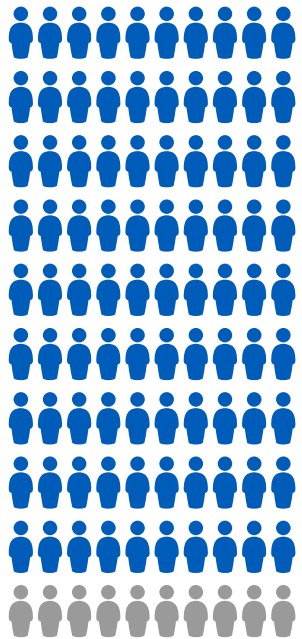
There is general agreement (90%), among executives and citizens alike, that the most innovative companies not only launch new products and services but also create a new market that didn't previously exist.

Yet, what if technology evolves faster than businesses can adapt?

81%

of Business Executives are mindful of the risk of "Digital Darwinism" or fear of becoming obsolete (FOBO).

Being disruptive is the gold standard for both executives and citizens but remains a challenging goal





90%  **85%**

The most innovative companies not only launch new products and services but also create a new market that didn't previously exist

...**93%** Informed Public  **87%**

60%  **55%**



The difficulty to come up with "radical and disruptive ideas" is a key challenge to innovate efficiently (2015)

...**40%** Informed Public  **45%** 

47%

In the past few years, the development of entirely new products or services has contributed to the performance of 47% of companies

 **37%** 

 Over-index
 Under - index



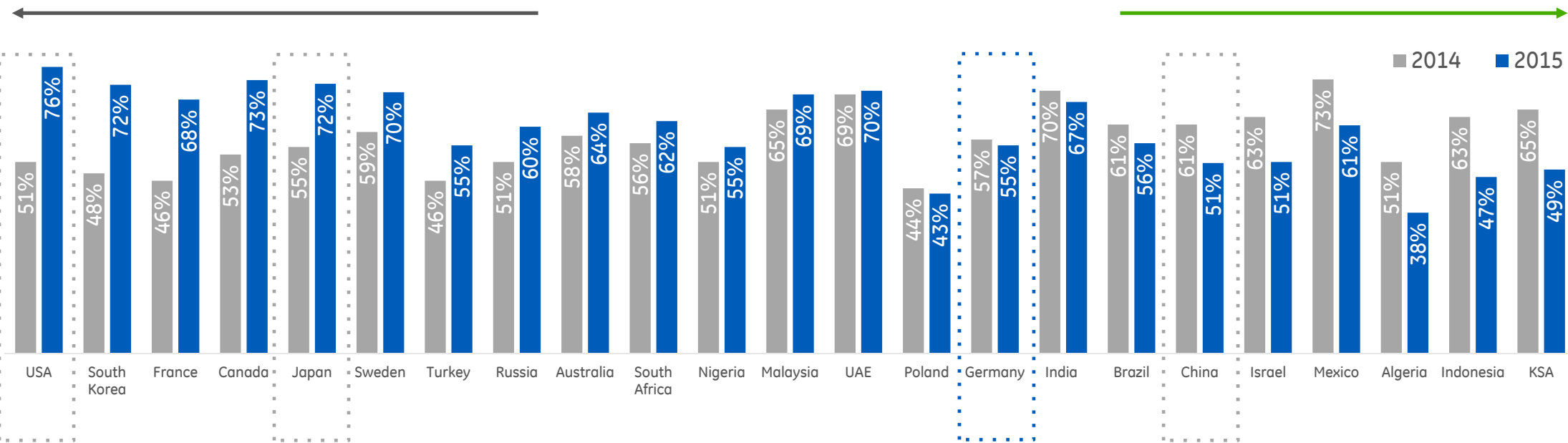
Q16. For each of the following challenges preventing businesses' ability to innovate efficiently, please say how far each of them applies to your company. The difficulty to come up with radical and disruptive ideas. Net % apply. Base business executives: 2,748. Business executives n= 2,748 Informed Public n= 1,346. Germany Business executives n= 101. Germany Informed Public n= 105.

Being disruptive is a growing challenge for the “Innovation Champions,” with China as an exception

The difficulty to come up with “radical and disruptive ideas”

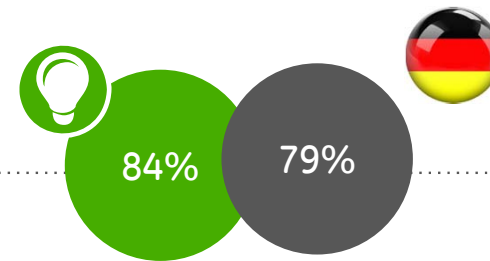
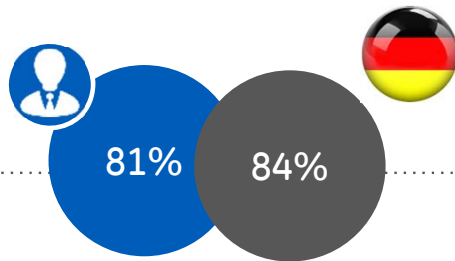
Growing challenge

Reducing challenge

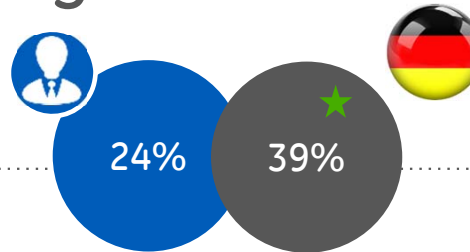


Q16. For each of the following challenges preventing businesses' ability to innovate efficiently, please say how far each of them applies to your company. The difficulty to come up with radical and disruptive ideas. Net % apply. Base business executives: 2,748. Germany Business executives: 101.





Business Executives and Informed Publics are mindful that more and more businesses face **“DIGITAL DARWINISM”** - becoming obsolete as technology is evolving faster than they can adapt

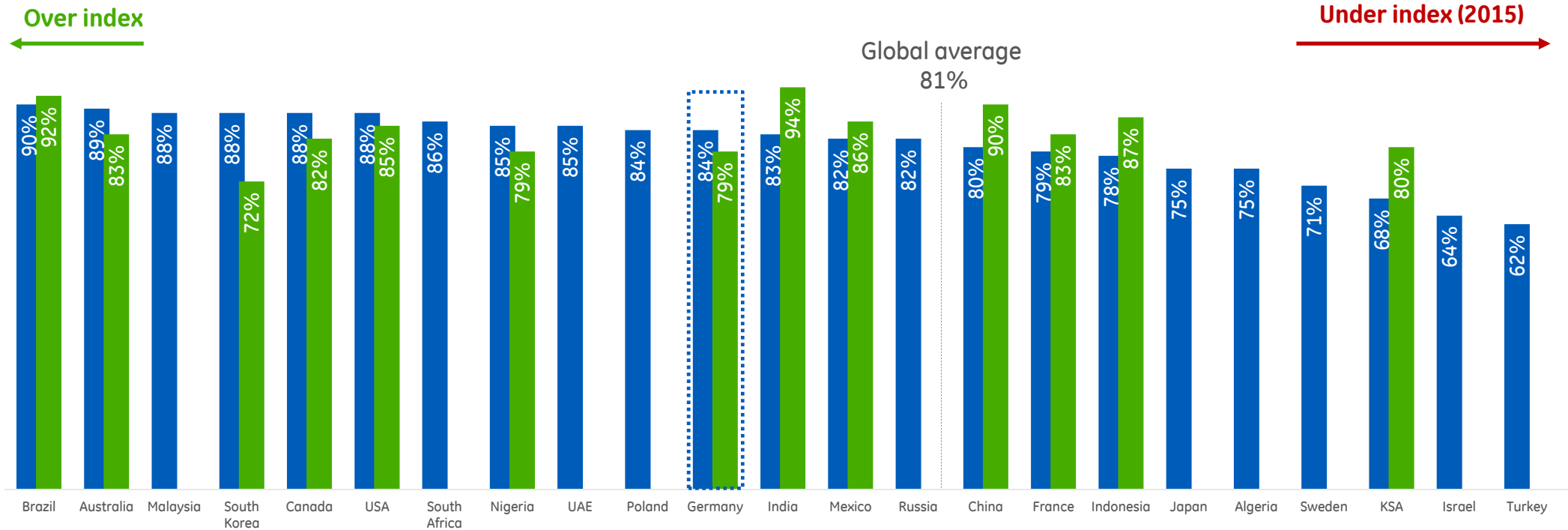


Only few feel their company is performing very well at quickly adapting and implementing emerging technologies

★ Over-index
★ Under-index



While Fear of Becoming Obsolete (FOBO) is a view shared across the majority of markets



Q20. How much do you agree or disagree with the following statements – More and more businesses face “DIGITAL DARWINISM” – becoming obsolete as technology is evolving faster that they can adapt. Base business executives: 2,748 informed public: 1,346. Base Germany business executives: 101. Base Germany informed public: 105



EVERYBODY'S STARTING UP?

Being disruptive is the gold standard and 81% of Business Executives recognize the "start-up" ethos is increasingly becoming the example norm. They recognize they need to innovate radically to keep up, but most business leaders favor a "safer" approach.

With inertia and risk aversion on the rise, incremental innovation is still driving the bottom line for most business leaders, especially those in developed markets.

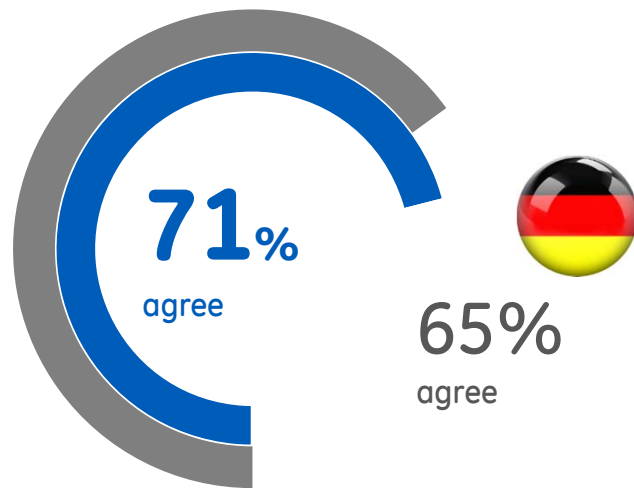
However, emerging markets, especially in Asia, are embracing radical innovation and opportunities to leapfrog.



81%

of Business Executives recognize the "start-up" ethos is increasingly becoming the example norm.

The “start-up” ethos is increasingly becoming the example norm



With digital transformation we are observing the rise of **'nomad employees'**

81%

of Business Executives and

79% of Informed Publics believe...

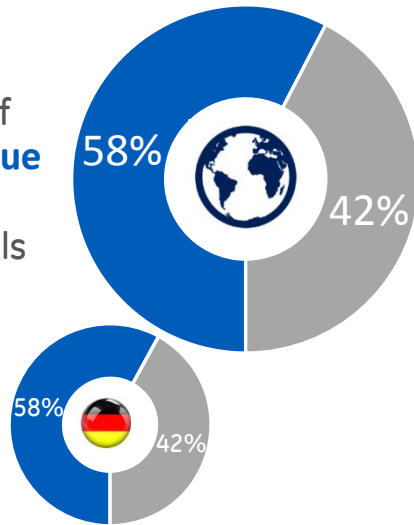
the "start-up" ethos is increasingly becoming the example norm for creating an innovation culture within companies of all sizes



Q4. / Q14. How far do you agree or disagree with the following statements? In my country... The “start-up” ethos is increasingly becoming the example norm for creating an Innovation culture within companies of all sizes / Q19. How much do you agree or disagree that the following types of ways of working might create a more productive work environment? [Agree + Strongly agree] Base business executives: 2,748. Base informed public: 1,346. Germany Base business executives: 101

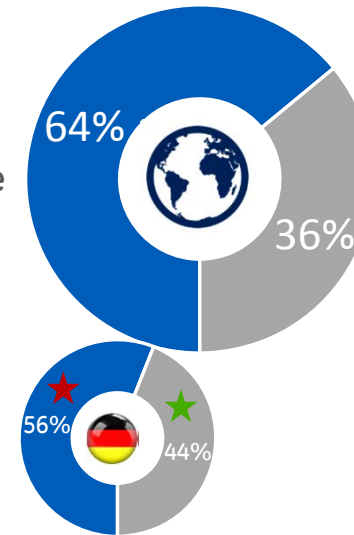
The majority of Business Executives continue to favor a “safer” approach to Innovation

Maximizing performance of **existing revenue streams** and business models



Opening up **new revenue streams** and inventing new business models

To protect the core business as much as possible, so it continues to generate the profitability needed to support research and innovation efforts



To bring innovative products and/or services to market as fast as possible **without worrying about the short term impact** it can have on the core business

34%
32%

Only 1/3 recognize the development of **new business models** (re-envisioning how a company generates revenue involving major changes in the way the company is organized, is managed and operates) has contributed to the performance of their company

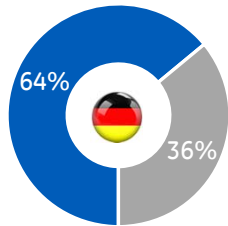
★ Over-index
 ★ Under-index



Q14. We are now going to present different innovation strategies. For each you will be shown two options. Please pick the one you feel is the most relevant to your company's approach. Q15. We are now going to present different views on the ideal innovation process. For each you will be shown two options. We would like you to pick the one you feel is the truest or the most relevant in driving successful innovation. Q9. In the past few years, what kind of innovations has contributed the most to your company's performance? The development of new business models. Base business executives: 2,748. Base Germany business executives: 101. Base Germany informed public: 105

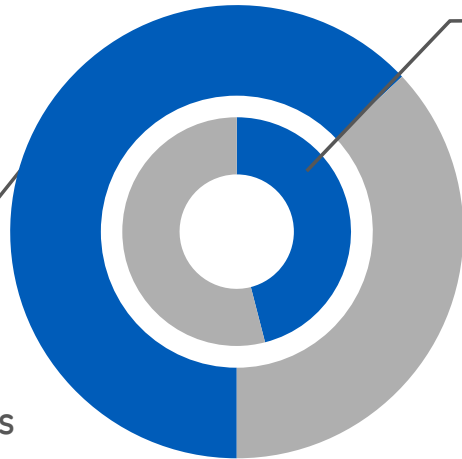


Many businesses innovate incrementally as a way to mitigate risks, even while speed to market is increasingly a differentiator



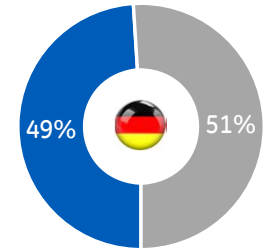
63%

Incremental innovation, improving existing products and solutions



46%

To get to market as quickly as possible to keep an edge on competition, even if this means having an imperfect product or service and improving it along the way



45%

Hi-tech/IT
Sector most likely to favor breakthrough innovation (45%)

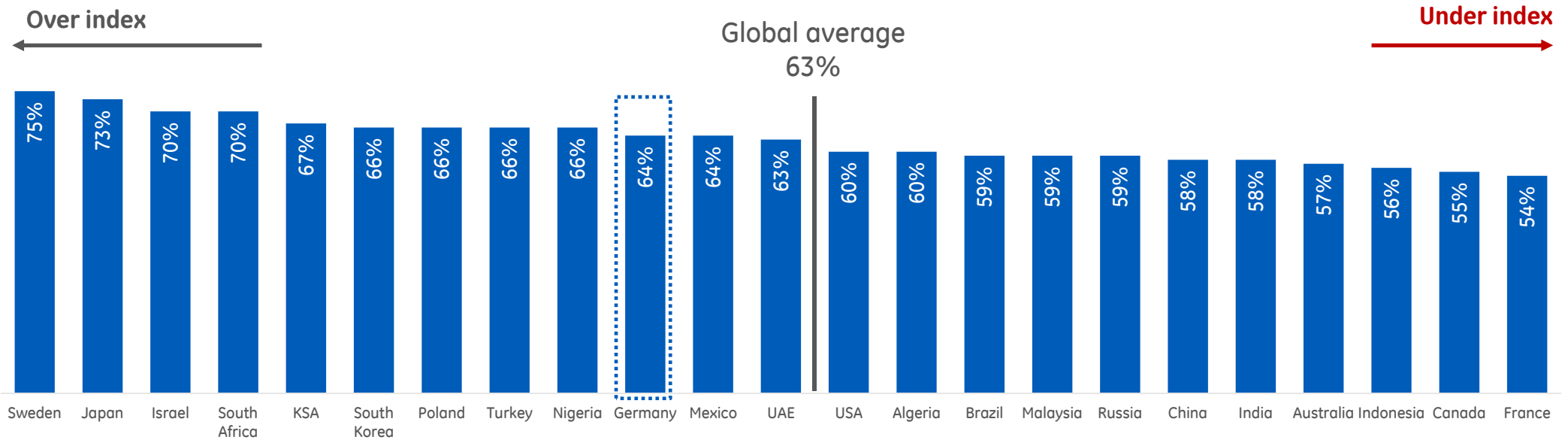


Q14. We are now going to present different innovation strategies. For each you will be shown two options. Please pick the one you feel is the most relevant to your company's approach. Q15. We are now going to present different views on the ideal innovation process. For each you will be shown two options. We would like you to pick the one you feel is the truest or the most relevant in driving successful innovation. Base business executives: 2,748. Germany Base business executives: 101.



All markets show a preference for incremental innovation

Incremental innovation, improving existing products and solutions vs. breakthrough innovation, launching products that are completely new and have the ability to disrupt their market

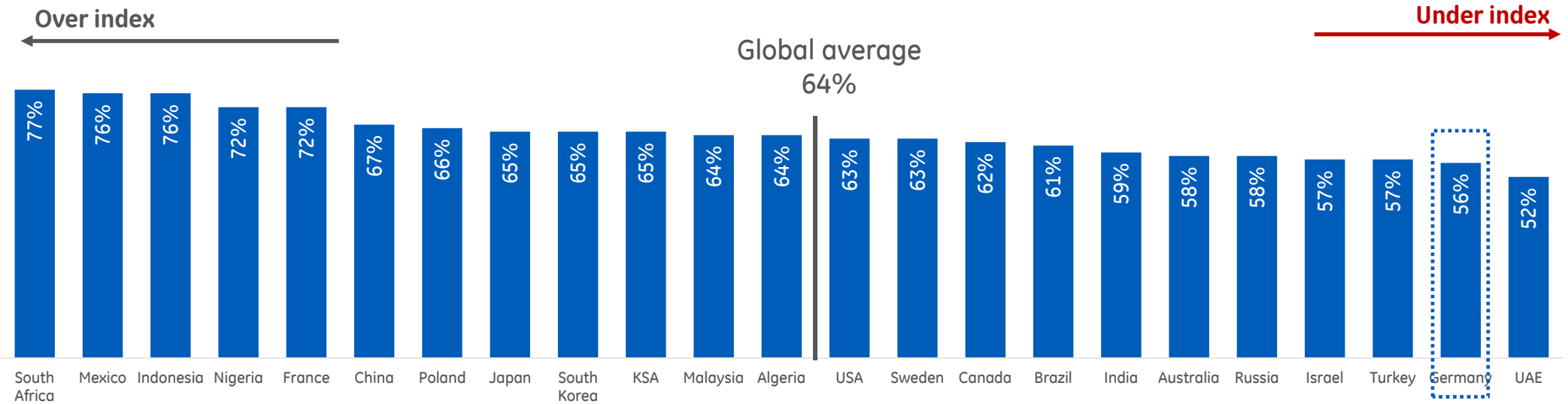


Q14. We are now going to present different innovation strategies. For each you will be shown two options. Please pick the one you feel is the most relevant to your company's approach. Base business executives: 2,748. Germany Base business executives: 101.



Protecting the core business is the priority for most markets

To protect the core business as much as possible, so it continues to generate the profitability needed to support research and innovation efforts vs. bringing innovative products and/or services to market as fast as possible without worrying about the short term impact it can have on the core business

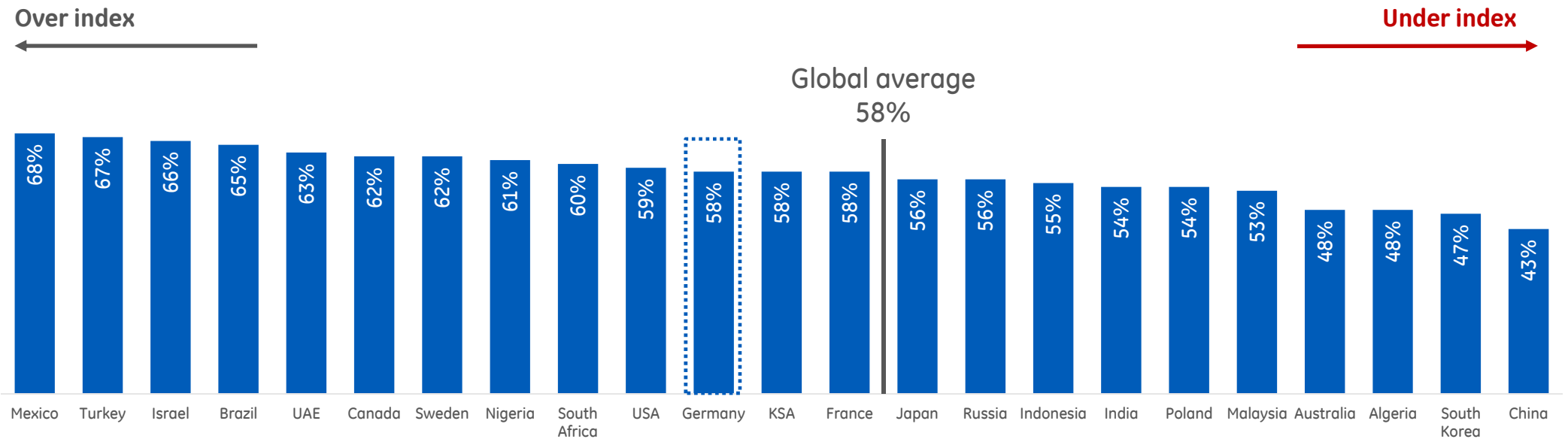


Q15. We are now going to present different innovation strategies. For each you will be shown two options. Please pick the one you feel is the most relevant to your company's approach. Base business executives: 2,748. Germany Base business executives: 101.



The majority of markets prefer to make the most of existing revenue streams and business models

Maximizing performance of existing revenue streams and business models vs. opening up new revenue streams and inventing new business models



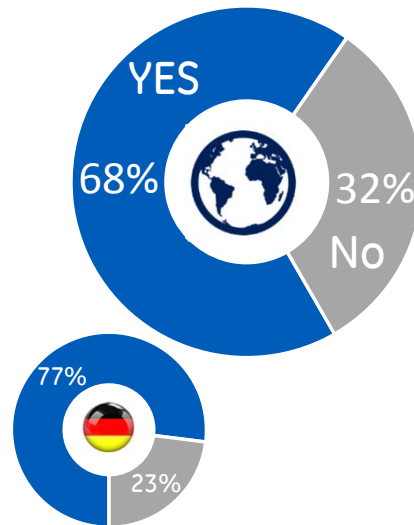
Q14. We are now going to present different innovation strategies. For each you will be shown two options. Please pick the one you feel is the most relevant to your company's approach. Base business executives: 2,748. Germany Base business executives: 101.



Having an innovation strategy and a performance KPIs framework no longer guarantee success

Does your company have a clear innovation strategy?

62% of those with a clear innovation strategy still struggle to come up with radical and disruptive ideas



57% of those without a clear innovation strategy struggle to come up with radical and disruptive ideas, too

73% Do measure the contribution of innovation to their business performance

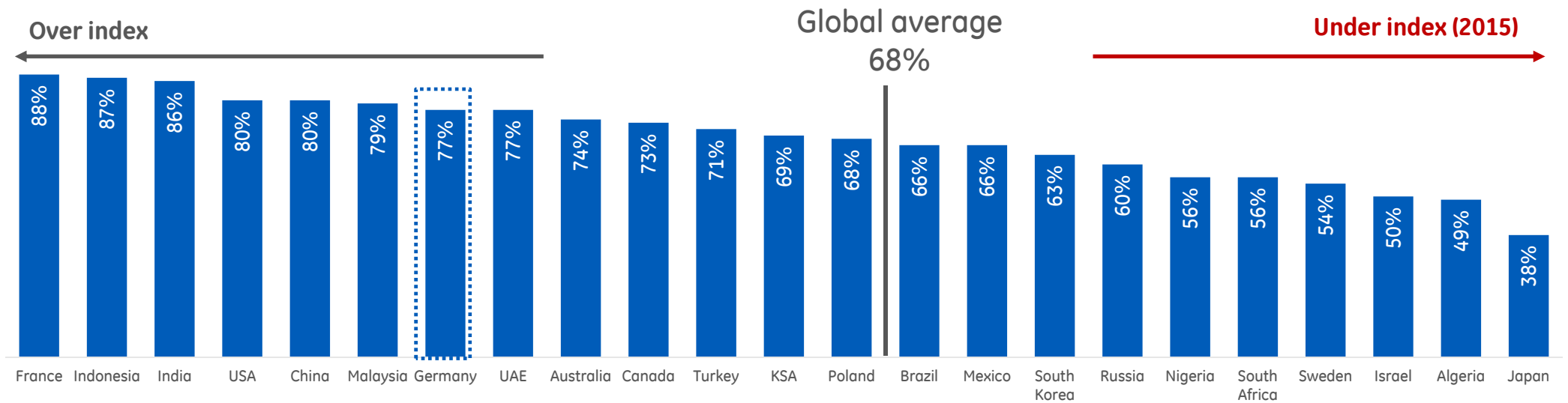
★ Over-index
★ Under - index



Q12. Does your company have a clear innovation strategy? / Q13. Do you measure the contribution of innovation to your business performance? / Q16. For each of the following challenges preventing businesses' ability to innovate efficiently, please say how far each of them applies to your company? Base business executives: 2,748. Germany Base business executives: 101.

We see polarized views in approach to innovation strategies

My company has a clear innovation strategy

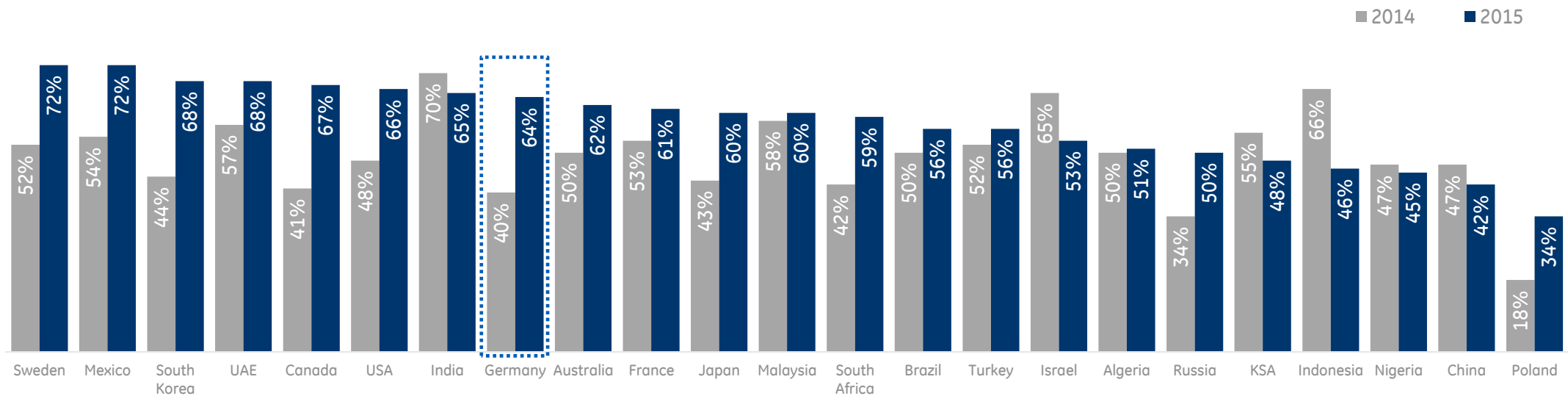


Q12. Does your company have a clear innovation strategy? Base business executives: 2,748. Germany Base business executives: 101.



Risk taking is also a growing challenge in most markets

Challenges preventing businesses' ability to innovate efficiently, the incapacity of the business to take risks



Q16. For each of the following challenges preventing businesses' ability to innovate efficiently, please say how far each of them applies to your company? Top 2. Base business executives: 2,748. Germany Base business executives: 101.




Incremental innovation dominates companies' performance drivers; innovation that has a sustainable dimension at its core is marginally contributing

In the past few years, what kind of innovation has contributed the most to your company's performance?

58%  50%[★]

The improvement of existing products or services


34%
The development of new business models

 32%

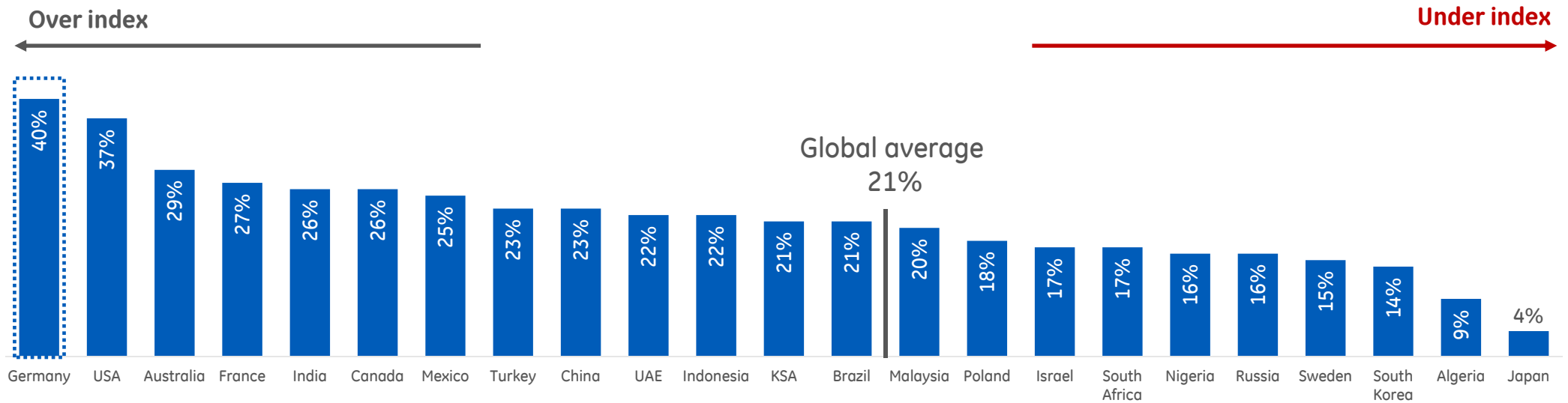
★ Over-index
★ Under - index



Q9. In the past few years, what kind of innovations has contributed the most to your company's performance? Please select up to 5 answers maximum. Base business executives: 2,748. / Germany Base business executives: 101.

Willingness to accept a longer-term payoff for innovation is a general challenge, with the exception of the U.S. and Germany

To be ready to accept long-term ROI to allow for breakthrough innovation (performs extremely well)

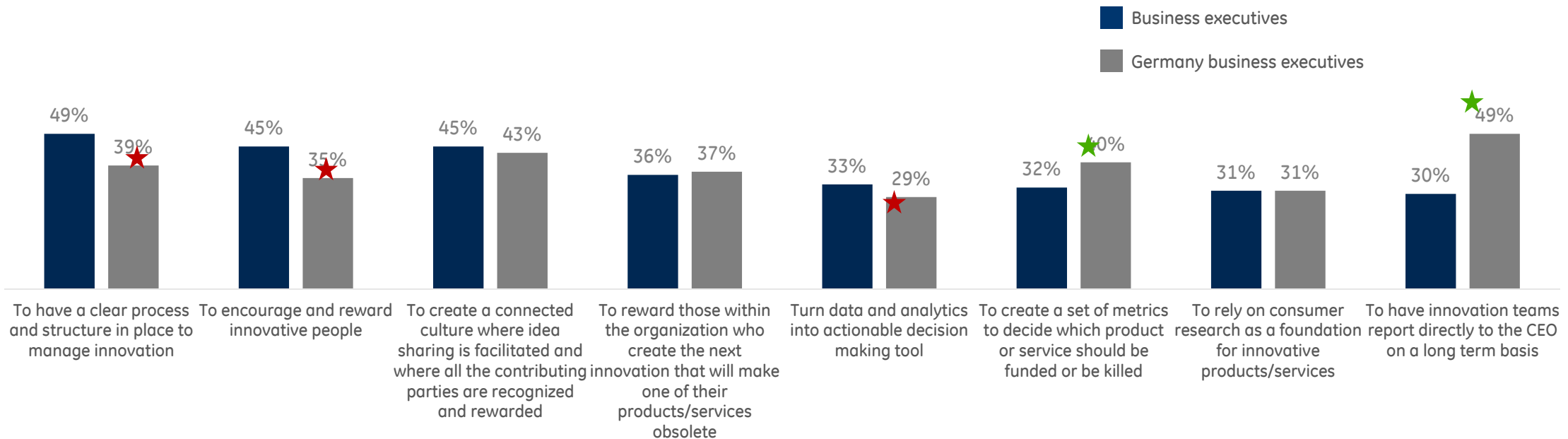


Q8.K How does your company currently perform against these success criteria: To be ready to accept a long term ROI to allow for breakthrough innovation. % performs extremely well. Base business executives: 2,748. Base business executives: 101.



Identifying best practices is a challenge for businesses

The top 3 best practices to foster and enable reliable and radical innovation?



★ Over-index
★ Under-index

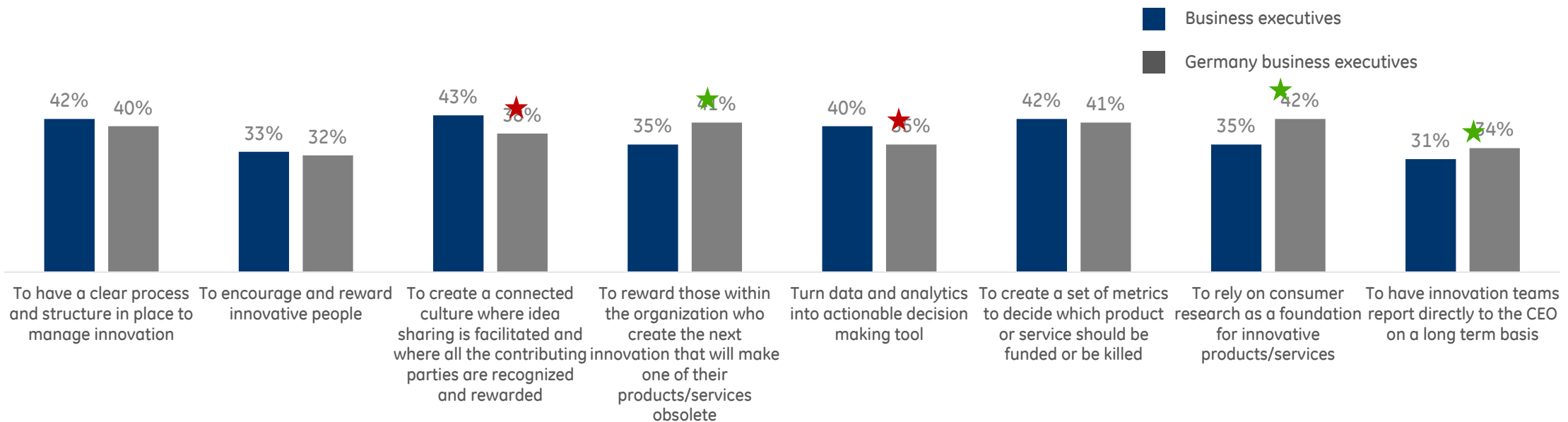


Q11A.2 Which of the following do you see as the top 3 best practices to foster and enable reliable and radical innovation. Base business executives: 2,748. Germany Base business executives: 105.



Once identifies, integrating best practices can also prove challenging

Which of the following do you see as the top 3 most challenging best practices to implement?



★ Over-index
★ Under-index

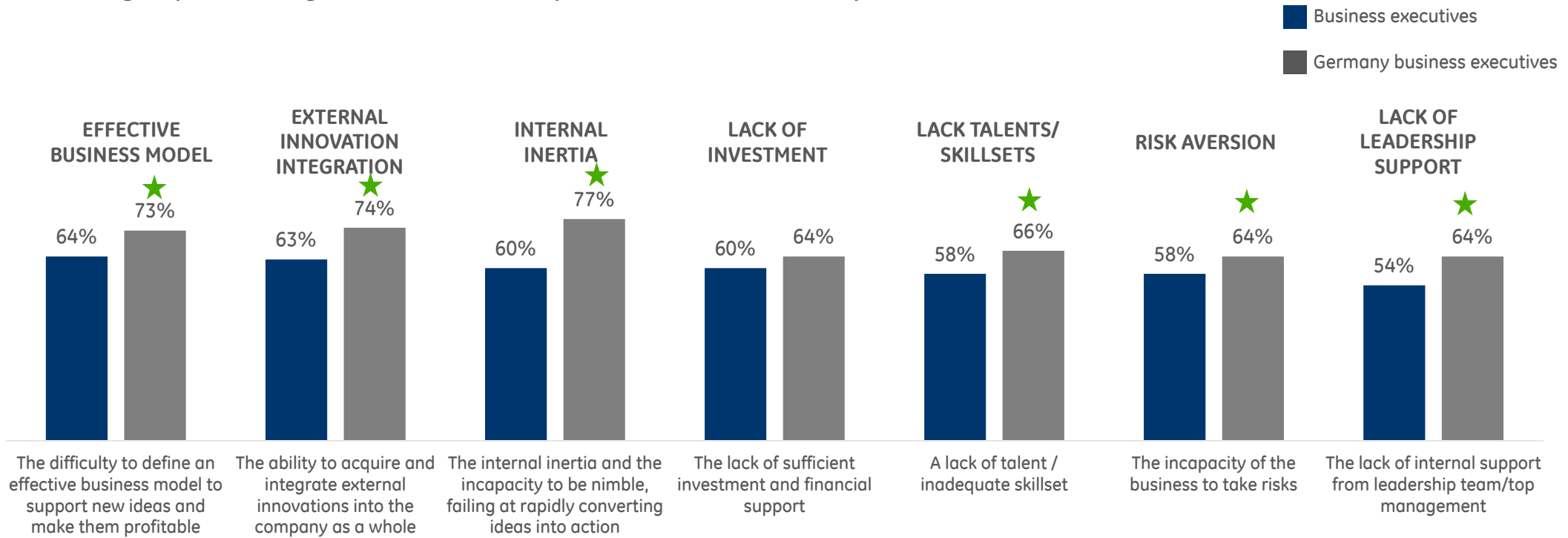


Q11A.2 Which of the following do you see as the top 3 best practices to foster and enable reliable and radical innovation? Q11B. Which of the following do you see as the top 3 most challenging best practices to implement? Base business executives: 2,748. Germany Base business executives: 101



Business execs think ineffective business models are preventing them from innovating efficiently

Challenges preventing businesses' ability to innovate efficiently



★ Over-index
★ Under-index

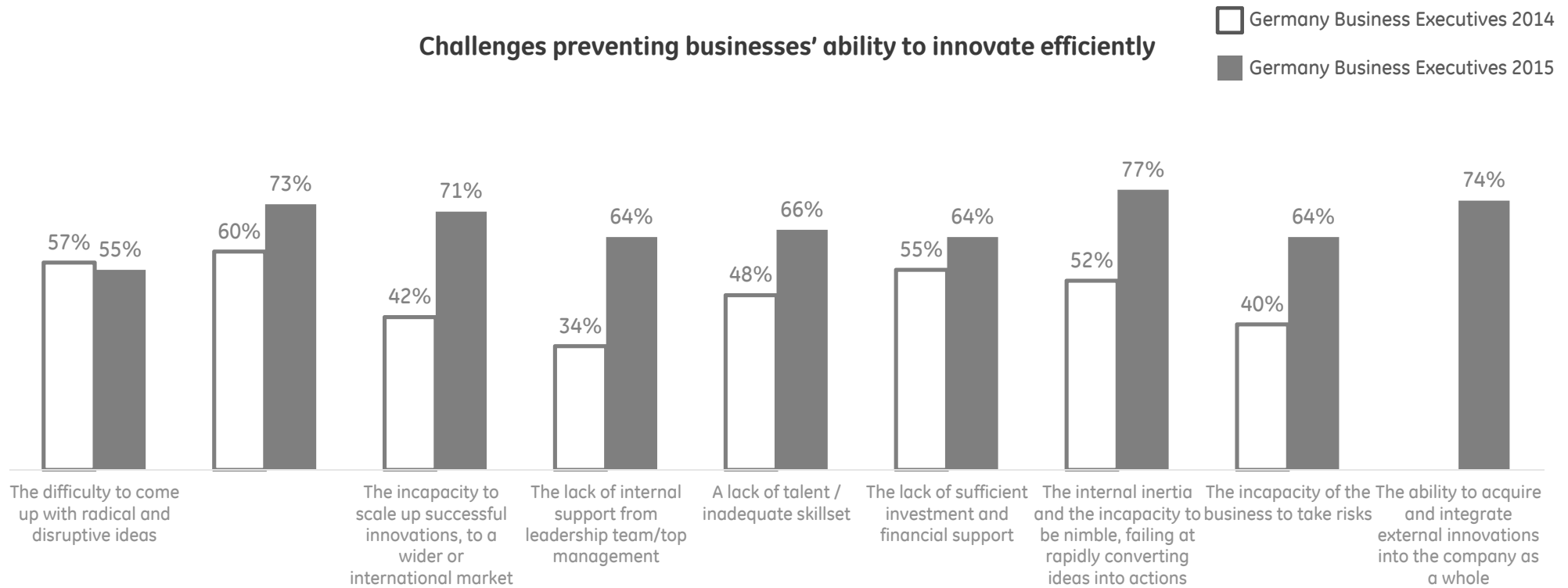


Q16. For each of the following challenges preventing businesses' ability to innovate efficiently, please say how far each of them applies to your company? Top 2. Base business executives: 2,748. Germany Base business executives: 101.



Challenges preventing efficiency are increasing

Challenges preventing businesses' ability to innovate efficiently

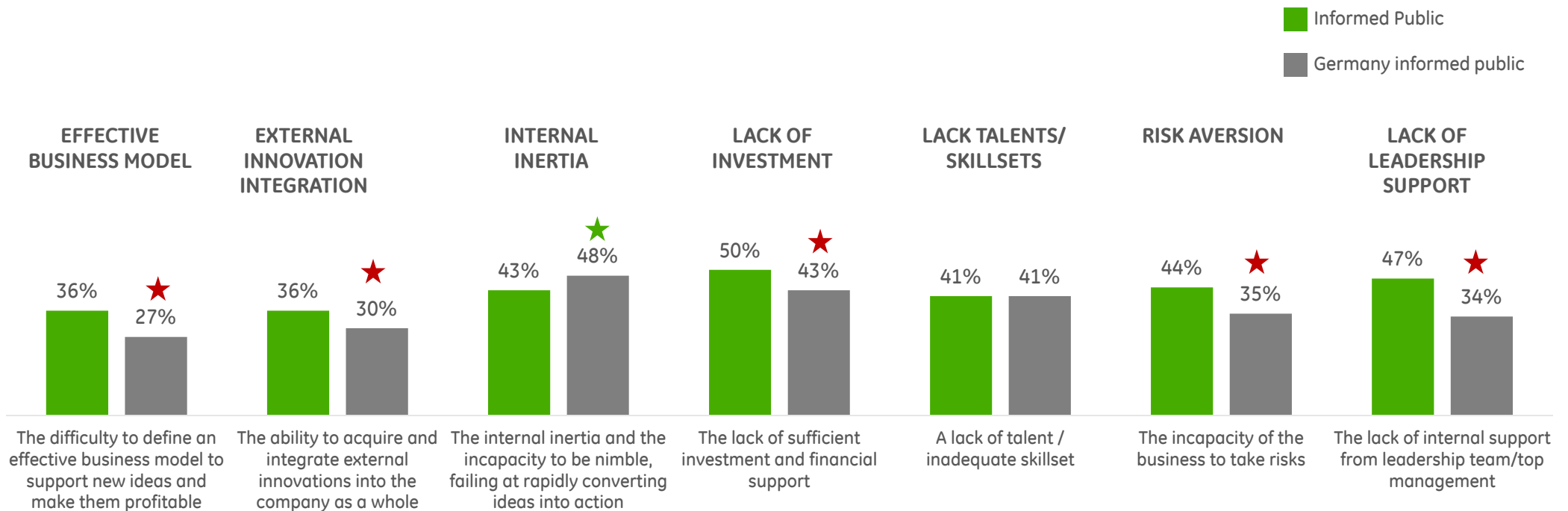


Q16.A For each of the following challenges preventing businesses' ability to innovate efficiently, please say how far each of them applies to your company.
 NB: Slight question changes to response options between 2014 vs. 2015, however the data is still comparable



The Informed Public think it is a lack of internal inertia and lack of leadership

Challenges preventing businesses' ability to innovate efficiently



★ Over-index
★ Under-index



Q16. For each of the following challenges preventing businesses' ability to innovate efficiently, please say how far each of them applies to your company? Top 3.. Base informed public: 1,346. Base German informed public: 105.



2016 GE GLOBAL INNOVATION BAROMETER SUPPORTING FINDINGS

CREATIVITY AND PROBLEM-SOLVING KEY FOR FUTURE WORKFORCE

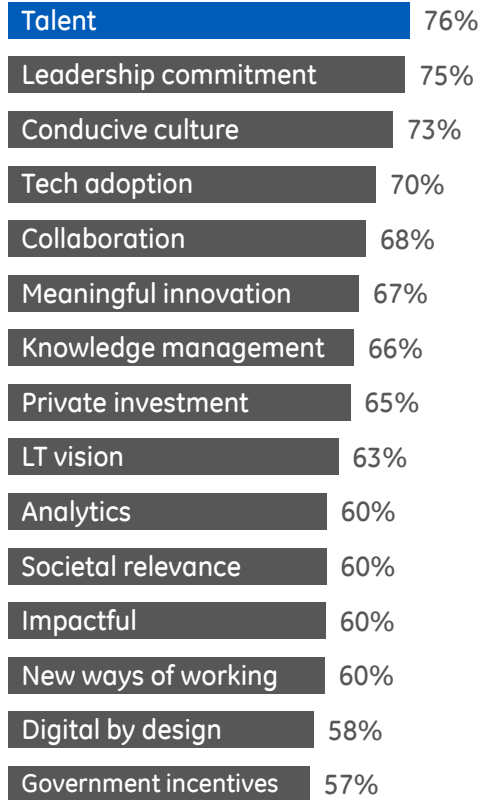
The future worker is changing. Business Executives are seeking problem solvers and creativity and the Informed Public are embracing the start-up ethos, and value flexible and remote work. However, many think we have a lot to do to prepare for tomorrow's skills needs.

The future worker is changing

Talent acquisition remains the first innovation success factor...



And **81%** / **77%** of Business Executives believe the **"start-up" ethos** is increasingly becoming the example norm for creating an **innovation culture** within companies of all sizes



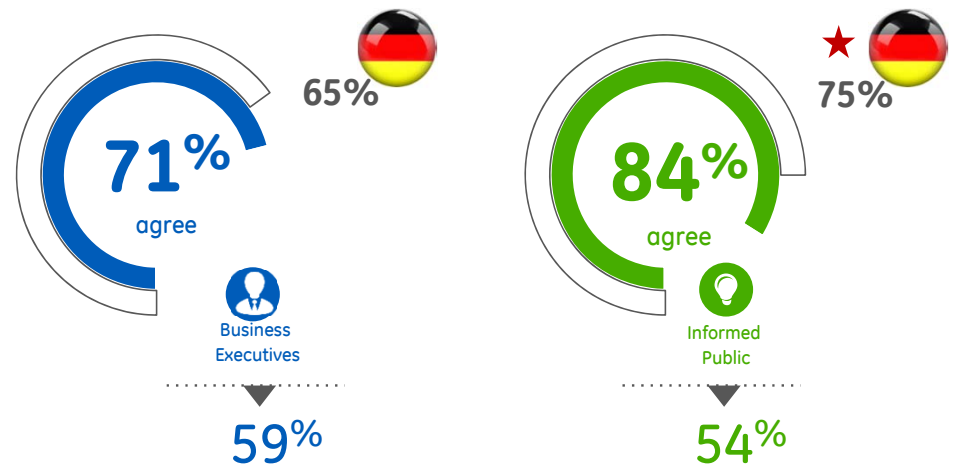
★ Over-index
★ Under-index



Please see notes for question details

With digital transformation we are observing the rise of 'NOMAD EMPLOYEES'

e.g., individuals that do not necessarily seek full-time employment but favor freelancing or contracting modes



But just over half believe that the current education system is adapted to fulfill the private sector's demand for new talent and skills



The ideal talent are creative problem solvers, but entrepreneurs are not fully embraced



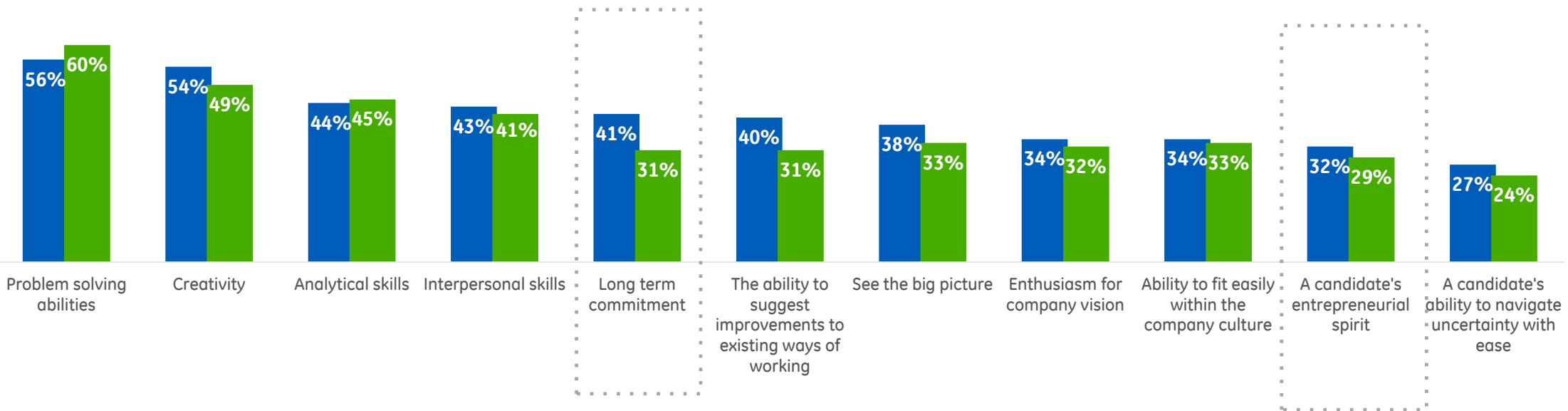
What are the main attributes you look for in CANDIDATES when considering them for a job application?



Business Executives



Informed Public

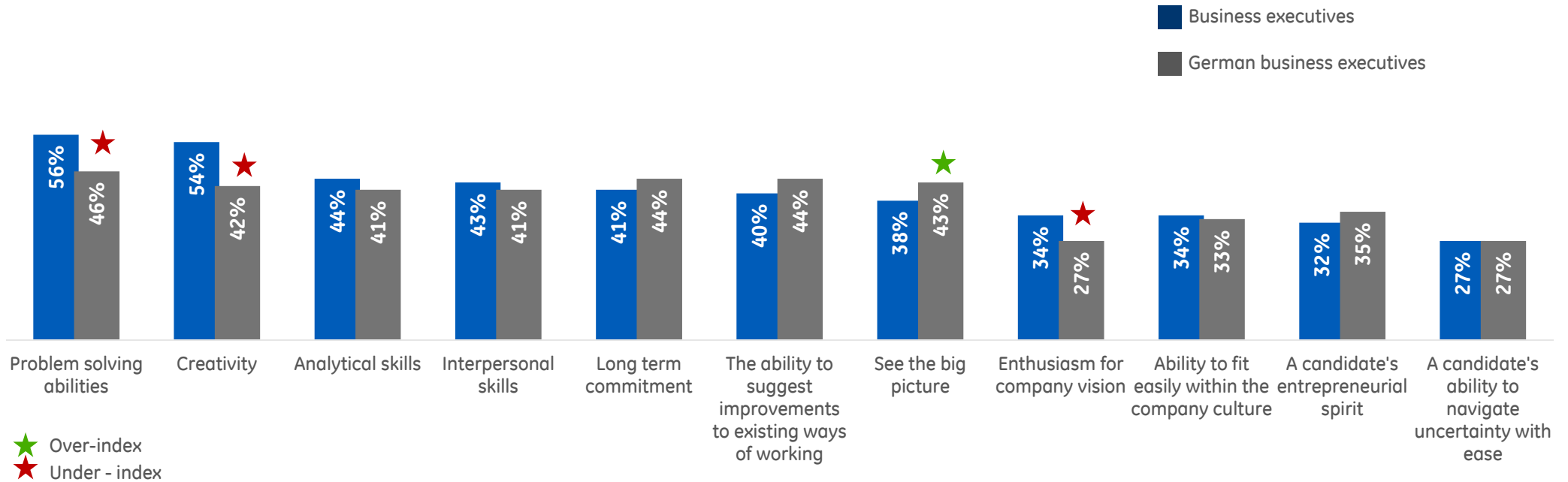


Q20. Beyond having the necessary technical qualifications for a job, what do you think are the main attributes companies are looking for in candidates when considering them for a job application? Q21. Beyond having the necessary technical qualifications for the job, what are the main attributes you look for in candidates when considering them for a job application? Base business executives: 2,748. Base informed public: 1,346.



The ideal talent are creative problem solvers, but entrepreneurs are not fully embraced

What are the main attributes you look for in CANDIDATES when considering them for a job application?



Q21. Beyond having the necessary technical qualifications for the job, what are the main attributes you look for in candidates when considering them for a job application? Base business executives: 2,748. Germany Base business executives: 105.



The Informed Public thinks the “start-up ethos” provides the most productive work environment

Top elements thought to create a more productive work environment



89%

Flexible working hours – where employees have a degree of freedom to choose their own working hours



94%



80%

Participative management principles – where employees elect corporate leadership and have a say in the appointment and appraisal of their managers



69%



79%

Remote working - where employees work from home, cafes, etc., on a regular basis

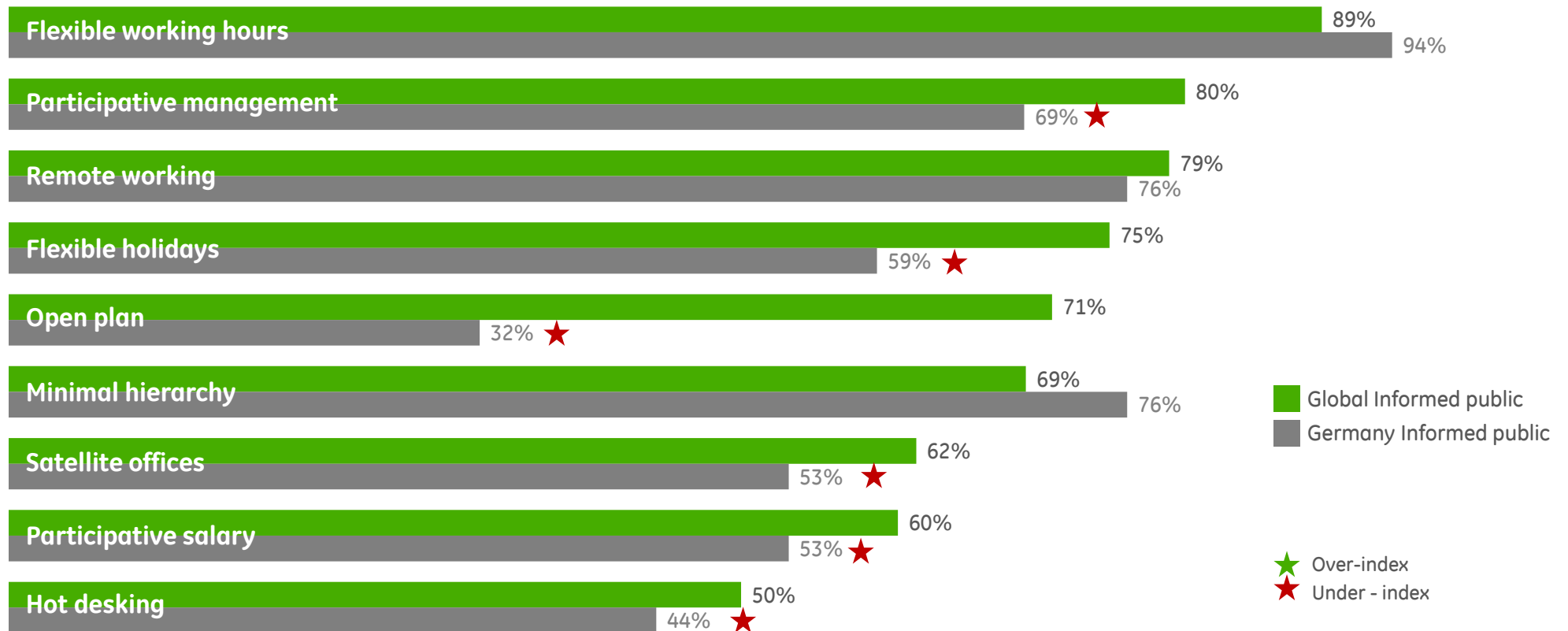


76%



Q19. How much do you agree or disagree that the following types of ways of working might create a more productive work environment? [Agree + Strongly agree]
Base informed public: 1,346

The Informed Public sees value in changing our ways of working to create a more productive work environment

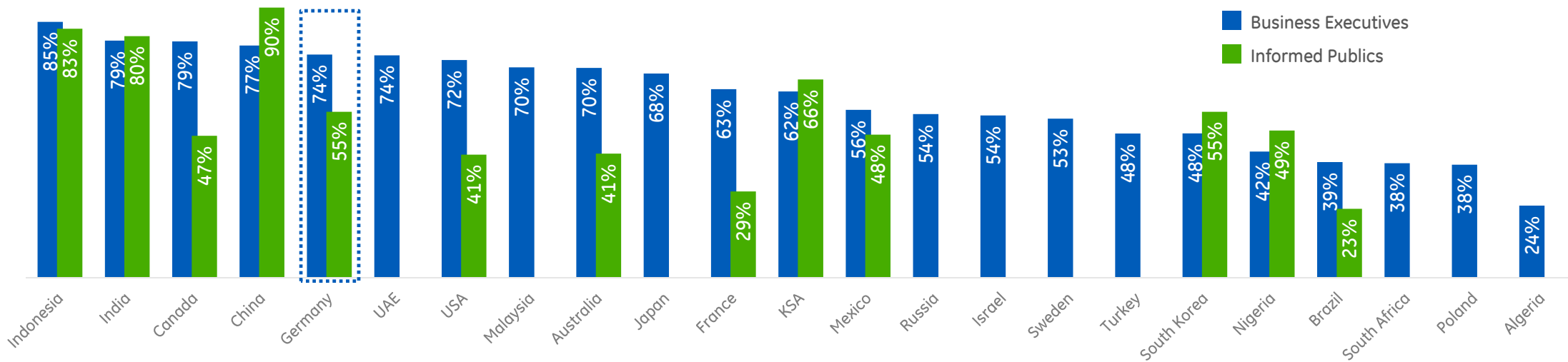
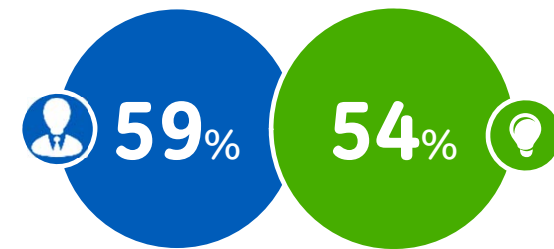


Q19. How much do you agree or disagree that the following types of ways of working might create a more productive work environment? [Agree + Strongly agree]
 Base informed public: 1,346. Base Germany informed public: 105.



Only a few countries feel their education system is ready to answer the future skills challenge

“The current education system is adapted to fulfill the private sectors' demand for new talent and skills”



Q4. & Q14. How much do you agree or disagree with the following statements? Base business executives: 2,748. Base informed public: 1,346. Germany Base business executives: 101. Germany Base informed public: 105.



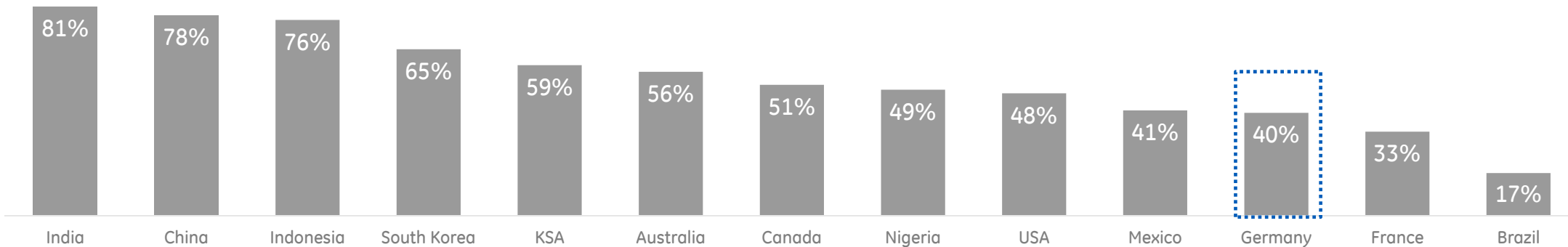
The Informed Public in Asia are the most confident that their education systems are future-facing

“The current education system is preparing the next generation for **the jobs of tomorrow**”

53%

Over index

Under index

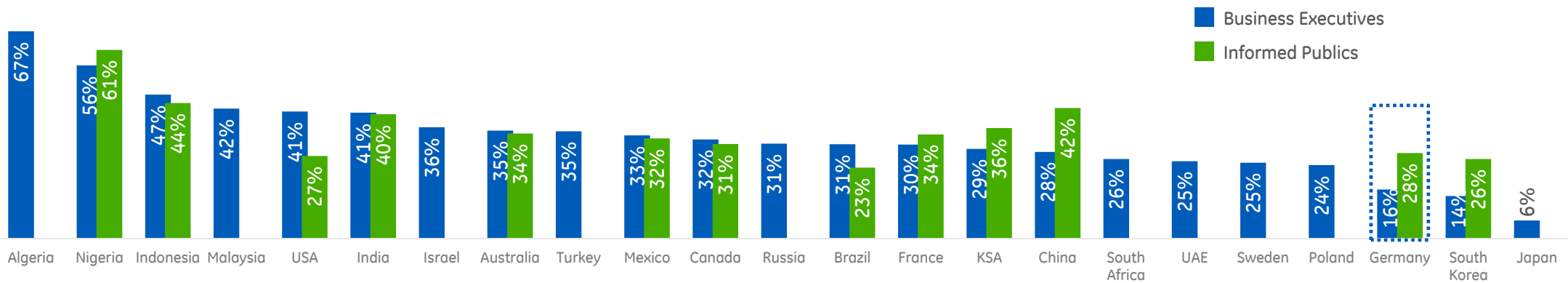
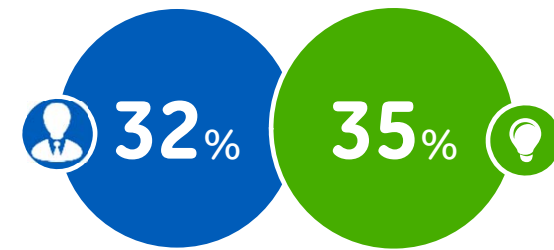


Q25. How much do you agree or disagree with the following statements? The current education system is preparing the next generation for the jobs of today?
The current education system is preparing the next generation for the jobs of tomorrow. Base informed public: 1,346. Germany Base informed public: 105.



Many emerging markets think businesses should play an active role in educating their employees for the digital revolution

“The DIGITAL REVOLUTION will increase **BUSINESSES' RESPONSIBILITY** to provide educational support to their employees so they ensure their skills are always up-to-date”

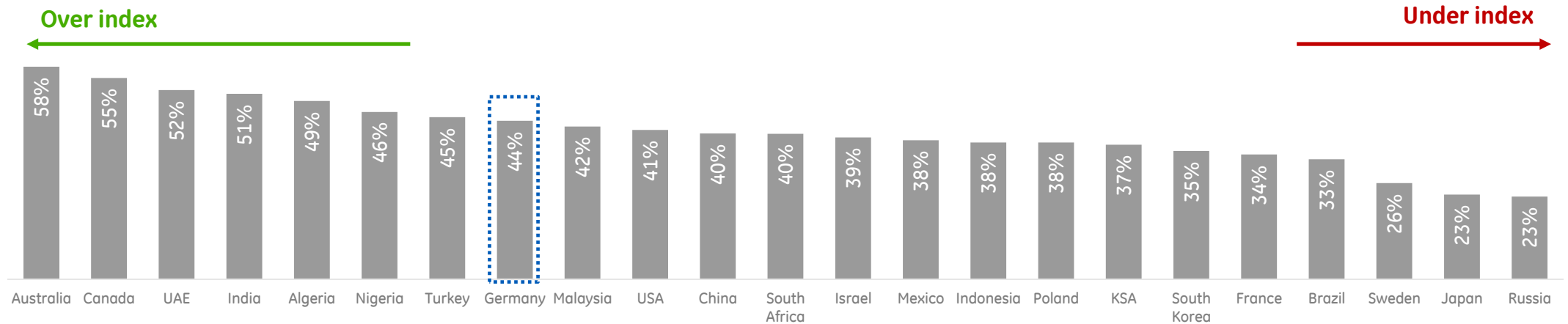
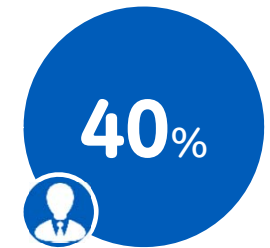


Q22. B. / Q23. B. There is currently a debate around the impact the digital revolution will have on employment. which, if any, of the following outcomes are the most likely to happen in your country? Base business executives: 2,748. Base informed public: 1,346. Germany Base business executives: 101. Germany Base informed public: 105.



Businesses are seen to have a responsibility to skill their workers for a digital reality

“The private sector will have the responsibility to ADDRESS THE IMPACT OF TECHNOLOGY, and in particular to retool, re-skill and find new uses for the labor force”



Q24. Which, if any, of the following outcomes are the most likely to happen in your country? Base business executives: 2,748. German Base business executives: 101.



MINDS AND MACHINES WORKING TOGETHER

Business Executives expect the digital revolution will make the workplace safer and create higher-value roles for workers. Few fear any negative impact on employment. Executives in the US, India, China or Germany anticipate a positive outcome in their country, while Japanese, French or Swedish executives are more skeptical.

Few fear a negative impact of the digital revolution on employment

Believe the digital revolution will have a negative impact on employment



What do you anticipate the impact of automation to be on jobs in your country?



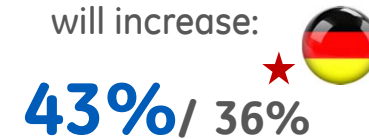
"The digital revolution will have a positive impact on employment"



New types of jobs will be created:





Workplace safety will increase:



[★] Over-index
[★] Under-index

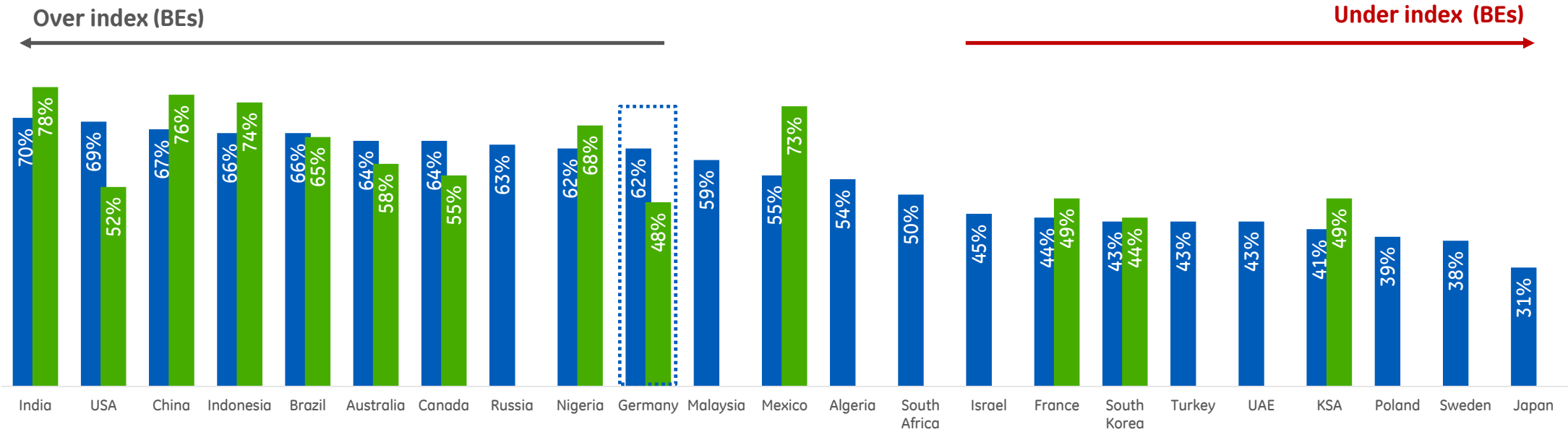


Please see notes for question details

 Business Executives
 Informed Publics

Country perceptions of how the digital revolution will affect employment vary widely

“The DIGITAL REVOLUTION will have a POSITIVE IMPACT on employment”

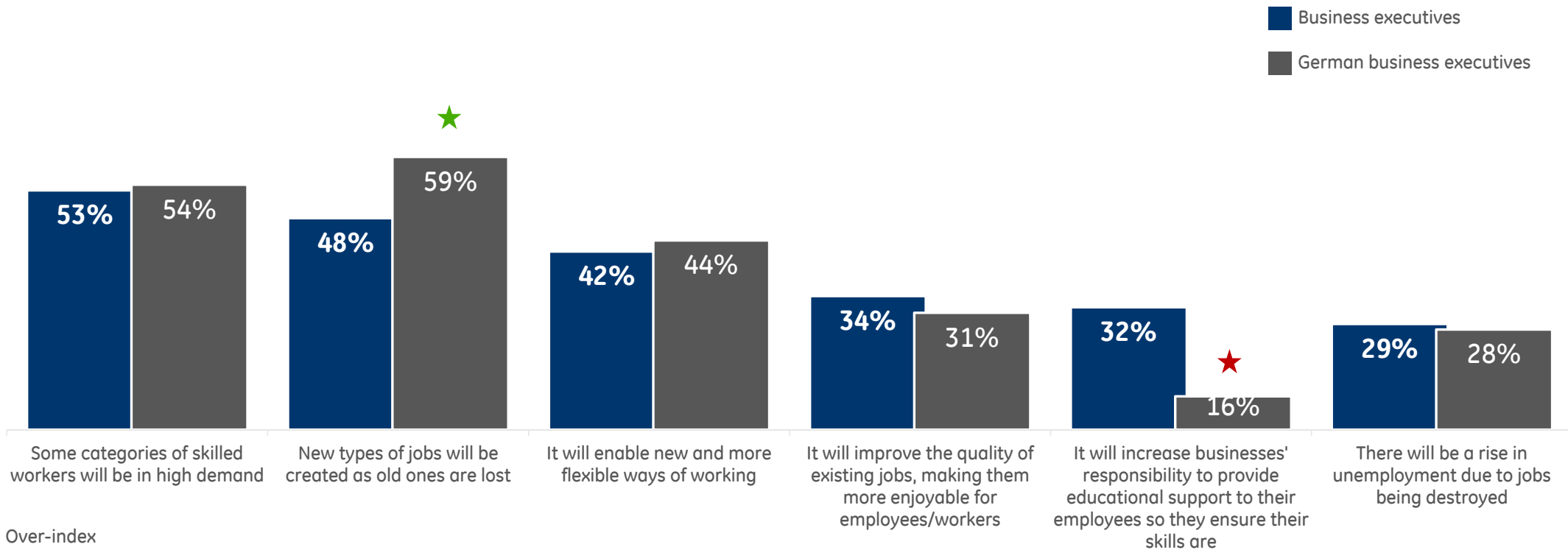


Q23. A. & Q22. There is currently a debate around the impact the digital revolution will have on employment. In your opinion, what will be the impact of the digital revolution? Net % positive. Base business executives: 2,748. Base informed public: 1,346.



The digital revolution is expected to change the nature of work

Which are the most likely outcomes in your country?



★ Over-index
★ Under-index

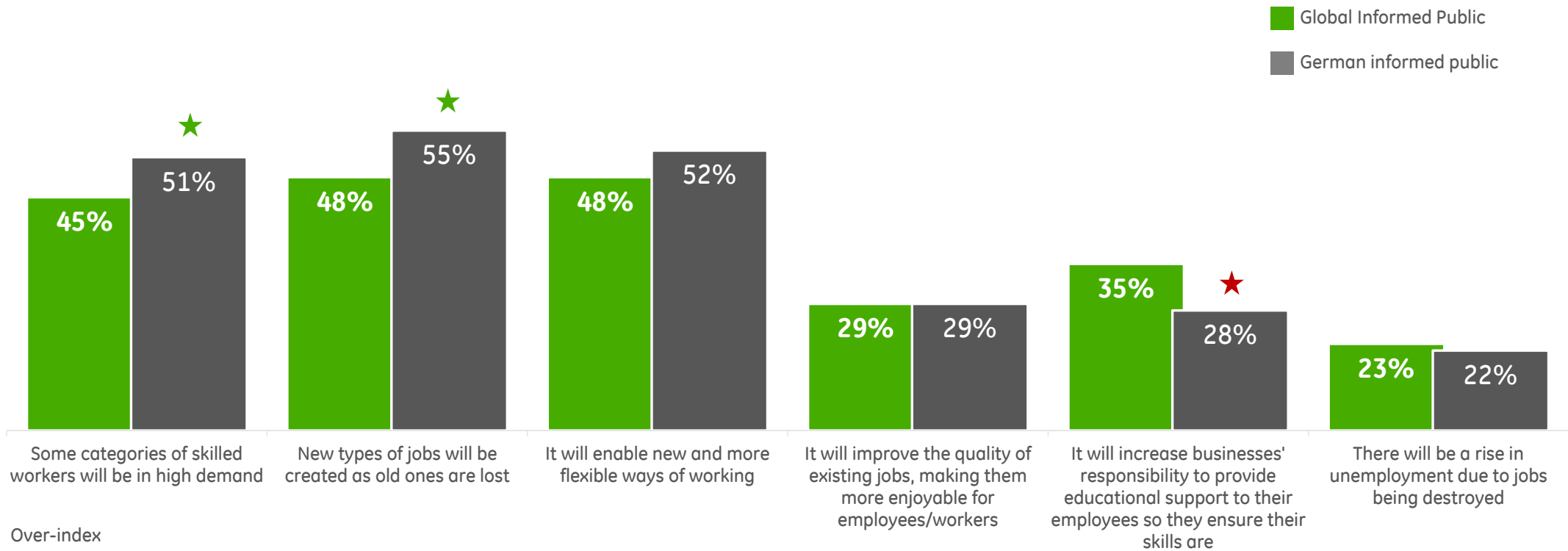


Q23B. Which, if any, of the following outcomes are the most likely to happen in your country / Q22B. Which, if any, of the following outcomes are the most likely to happen in your country. Base business executives: 2,748. German business executives: 101



The digital revolution is expected to change the nature of work

Which are the most likely outcomes in your country?



★ Over-index
★ Under-index



Q22B. Which, if any, of the following outcomes are the most likely to happen in your country.. Base informed public: 1,346. German informed public: 105

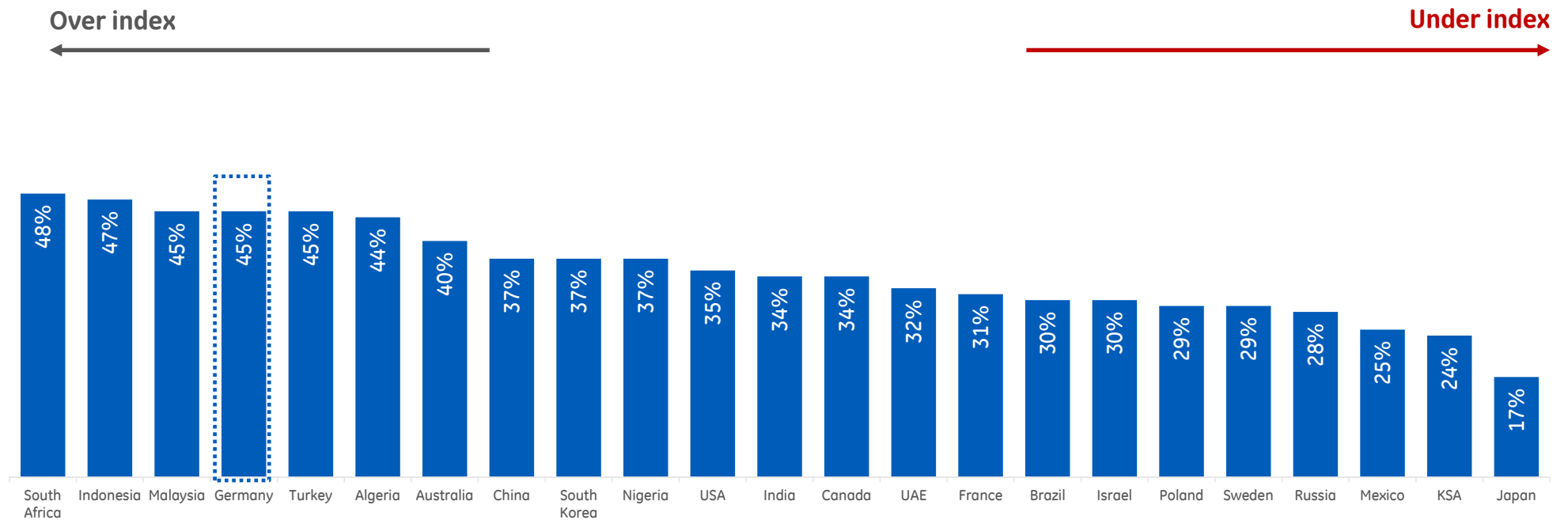


COUNTRY SPECIFICS: THE IMPACT OF AUTOMATION ON JOBS IN YOUR COUNTRY



There is some polarization concerning the potential displacement of tasks

Impact of automation on job roles: Drive a displacement of tasks in favor of machines

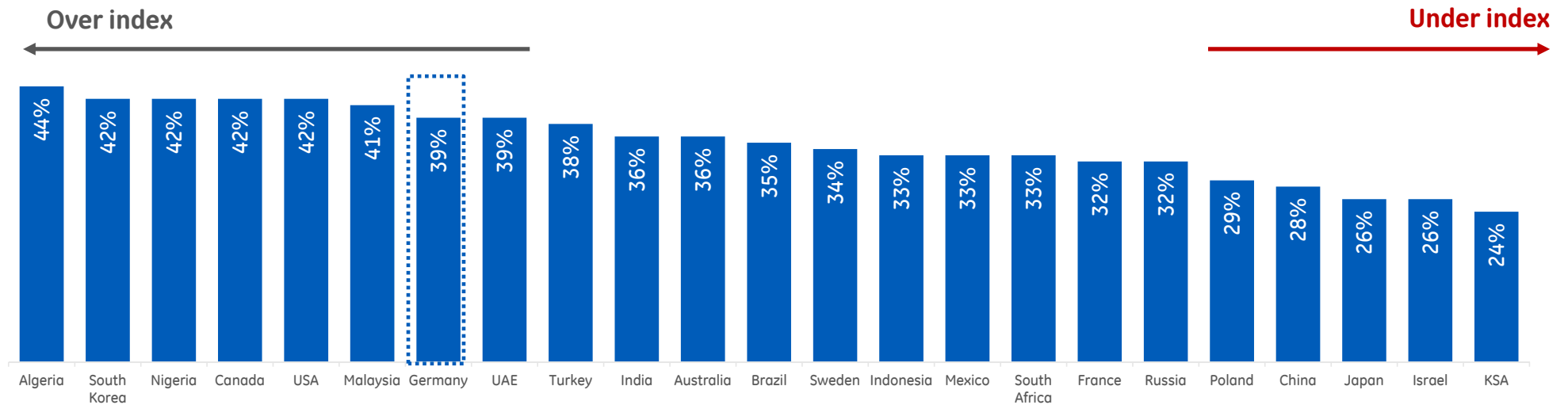


Q24. Which, if any, of the following outcomes are the most likely to happen in your country? Base business executives: 2,748. Germany Base business executives: 101.



The potential negative impact for lower-skilled workers is not a concern for most Business Executives

Impact of automation on job roles: Limit job opportunities and/or drive wages down for individuals with lower skills

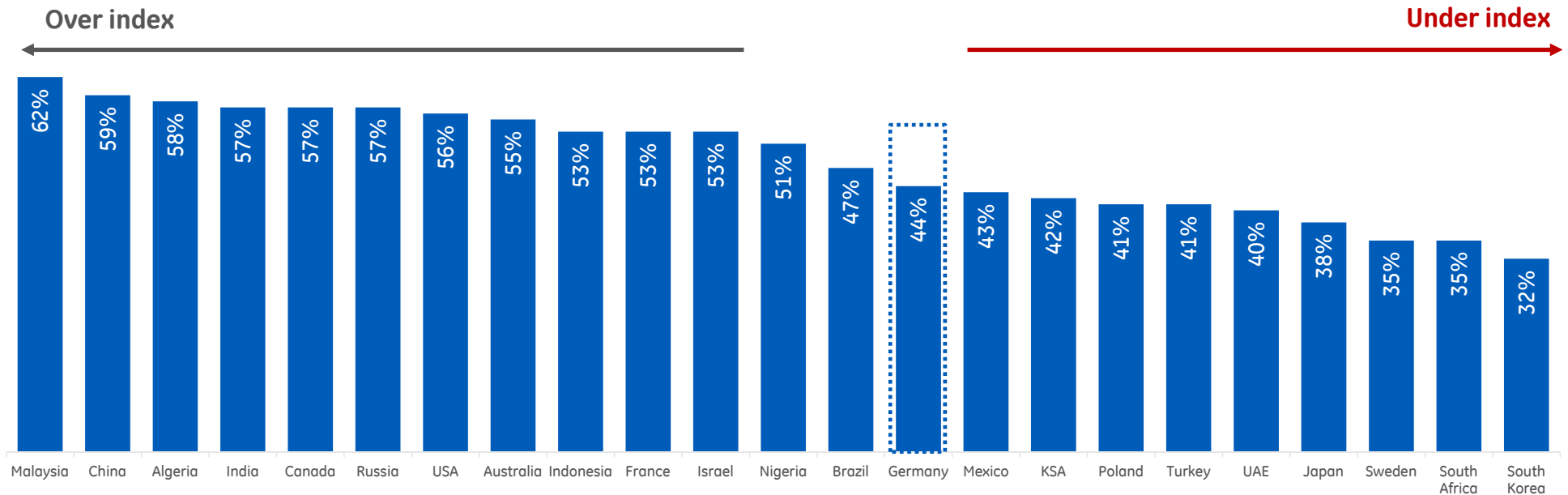


Q24. We would now like to ask you what you anticipate the impact of automation to be on jobs in your country? Which, if any, of the following outcomes are the most likely to happen in your country? Some can be positive some can be negative. Base business executives: 2,748. Germany Base business executives: 101.



Most Business Executives see the opportunities automation can create

Impact of automation on job roles: Offer workers opportunities to assume new, potentially higher-value roles and responsibilities

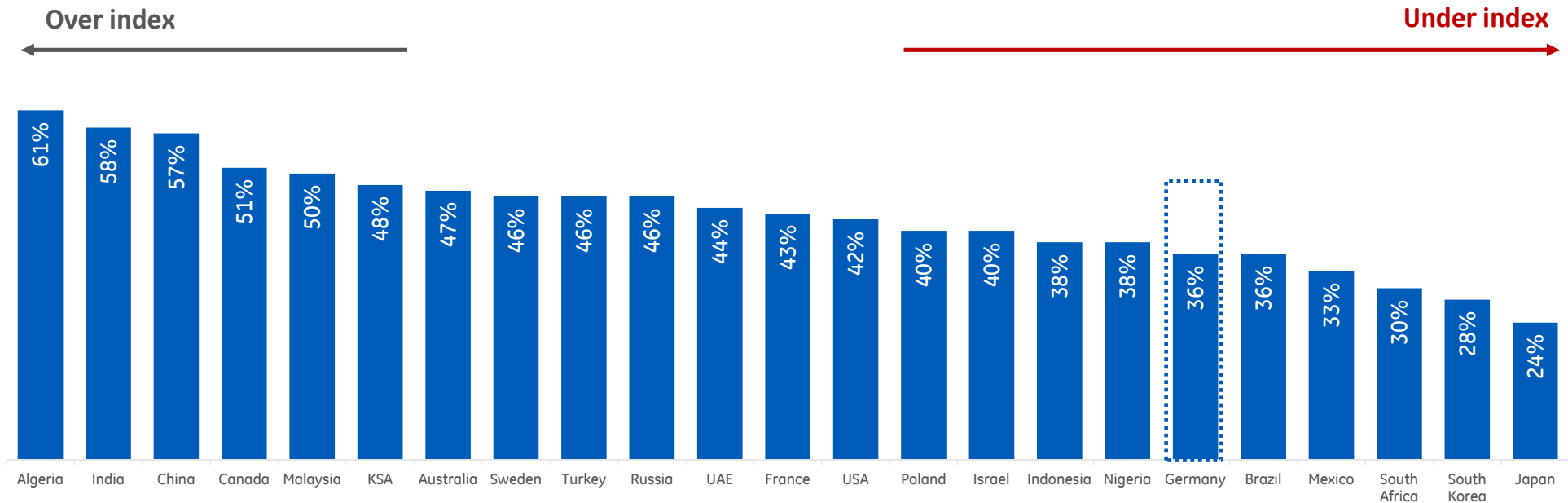


Q24. We would now like to ask you what you anticipate the impact of automation to be on jobs in your country? Which, if any, of the following outcomes are the most likely to happen in your country? Some can be positive some can be negative. Base business executives: 2,748. Germany Base business executives: 101.



The perception of benefits such as workplace safety are more contrasted

Impact of automation on job roles: Increase workplace safety; Workers will be moved to supervisory roles where they no longer have to perform dangerous applications in hazardous settings



Q24. We would now like to ask you what you anticipate the impact of automation to be on jobs in your country? Which, if any, of the following outcomes are the most likely to happen in your country? Some can be positive some can be negative. Base business executives: 2,748. Germany Base business executives: 101.

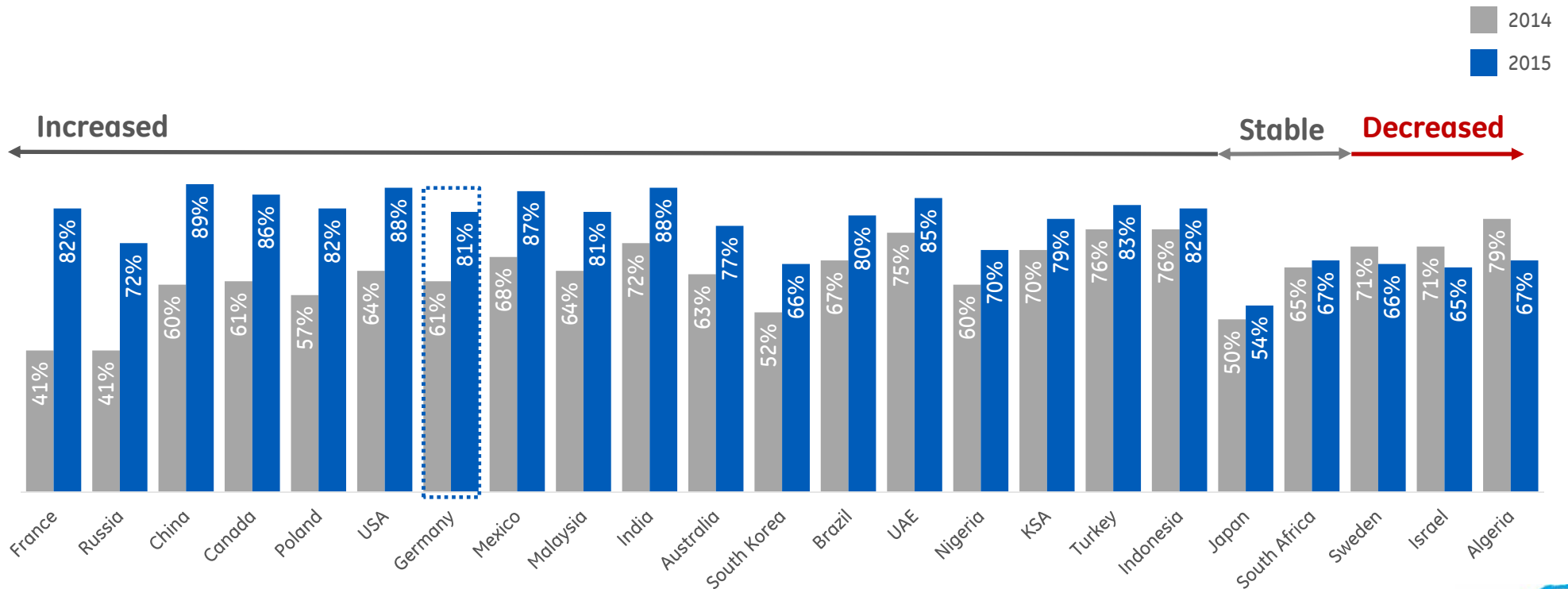


THE ROI ON COLLABORATION IS INCREASING

Business Executives say revenue and profit generated by collaborative innovation activities have yielded an increase in financial results. They're open to risk-sharing associated with innovation, including revenue streams or losses that could be generated through collaborative initiatives.

Collaboration has increased in most markets

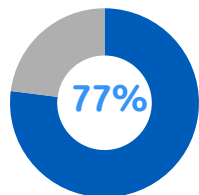
The revenue and profit generated by collaborative innovation activities has been growing over the last year



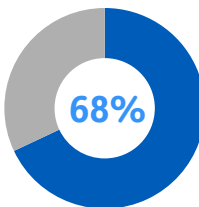
Q18A. Has the revenue and profit generated by collaborative innovation activities been growing over the last year? % Yes. Base business executives: 2,748. Germany Base business executives: 101.



Revenue and profit generated by collaborative innovation activities have yielded an increase in financial results



The revenue and profit generated by collaborative innovation activities has been growing over the last year **64% (2014 DATA)**



Say their firm is open to sharing the revenue stream or the revenue losses that could be generated through a collaborative innovation initiative

This is even more the case for...

85%

Those whose innovation strategies are steered towards breakthrough innovations

81%

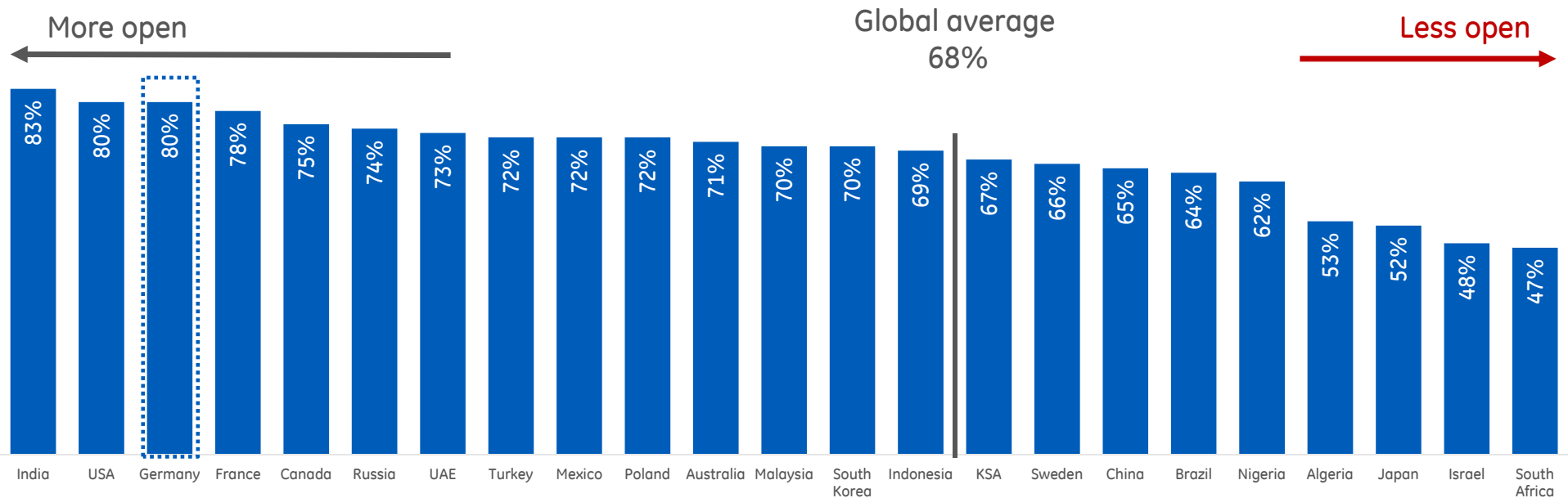
Those who find that to come up with radical and disruptive ideas is a challenge preventing their business' ability to innovate



Q18A. Has the revenue and profit generated by collaborative innovation activities been growing over the last year? % Yes. Base business executives: 2,748
Q18B. Is your firm open to sharing the revenue stream or the revenue losses that could be generated through a collaborative innovation initiative? % Yes. Base business executives: 2,748. Germany Base business executives: 101.

Businesses in most markets are open to sharing the risks of collaboration

My firm is open to sharing the revenue streams or the revenue losses that could be generated through a collaborative innovation initiative



Q18B. Is your firm open to sharing the revenue stream or the revenue losses that could be generated through a collaborative innovation initiative? % Yes. Base business executives: 2,748. German Base business executives: 101.

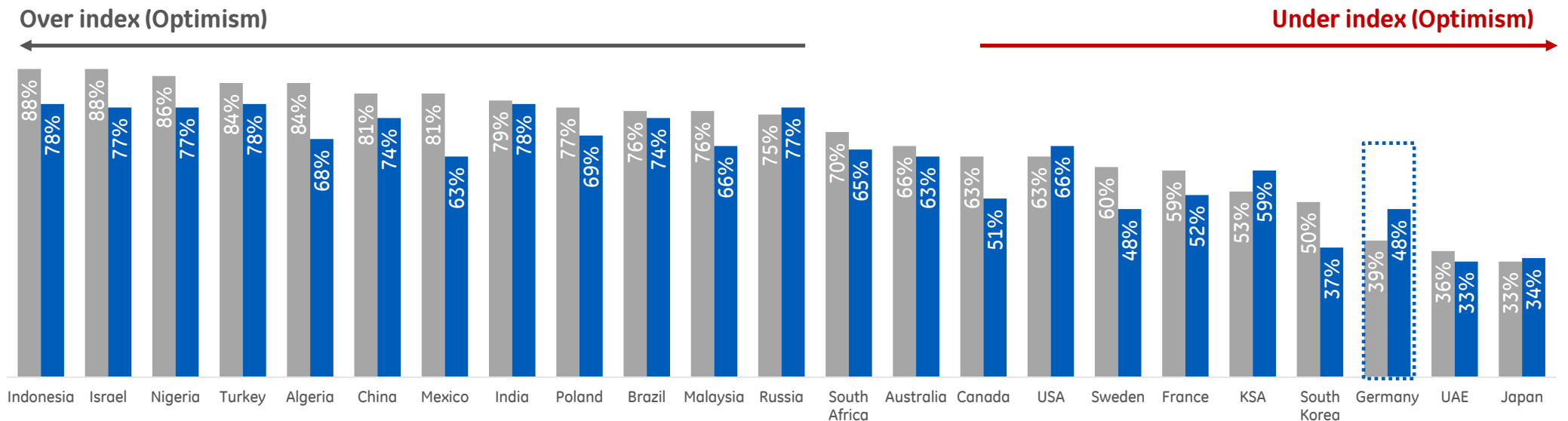
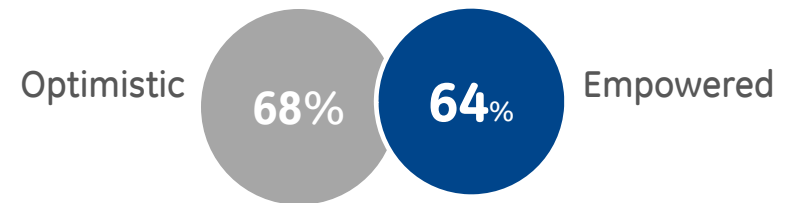


EMERGING MARKETS FEARLESSLY EMBRACE INNOVATION

Business Executives from emerging markets are feeling more optimistic and more empowered by the 4th Industrial Revolution than their peers in developing economies. Asian markets are amongst the most excited and confident, emerging markets the most curious. Informed Citizens in developed markets are feeling the least in control.

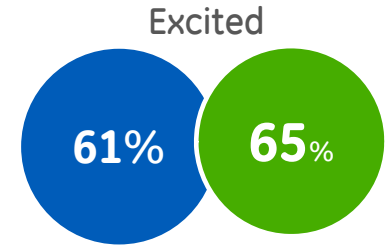
Fewer leaders in emerging markets are also reporting difficulty coming up with radical and disruptive ideas.

Business Executives from emerging markets feel more optimistic and more empowered by the 4th Industrial Revolution



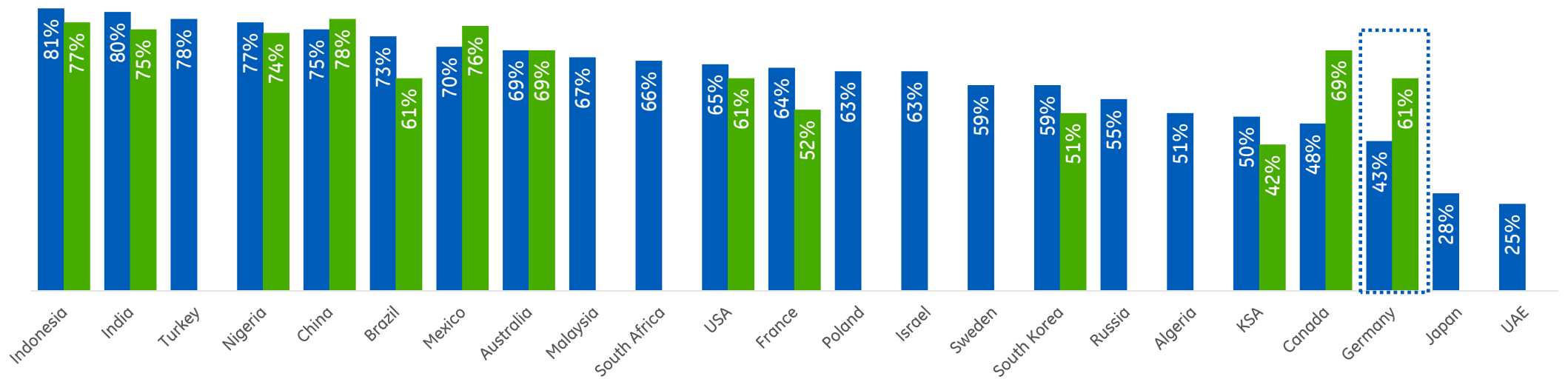
Q25. How does the prospect of entering a fourth industrial revolution make you feel. Base business executives: 2,748. Base business executives: 101.

When it comes to entering a 4th Industrial Revolution, Asian and emerging markets feel more excited...



Over index

Under index (2015)

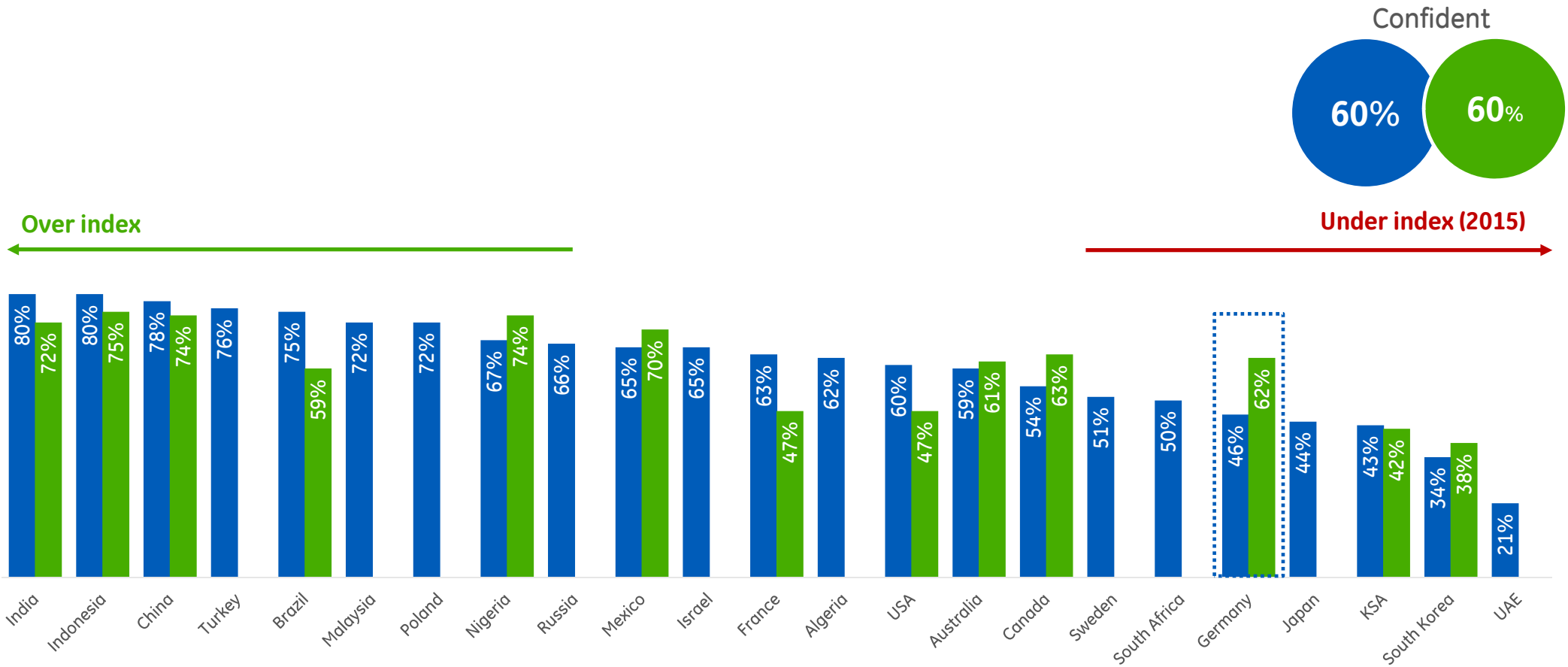


Q25. / Q23 How does the prospect of entering a fourth Industrial Revolution make you feel? Base business executives: 2,748. Base informed public: 1,346. Germany Base business executives: 101. Germany Base informed public: 105

Business executives
Informed Publics



...and Asian markets also feel most confident

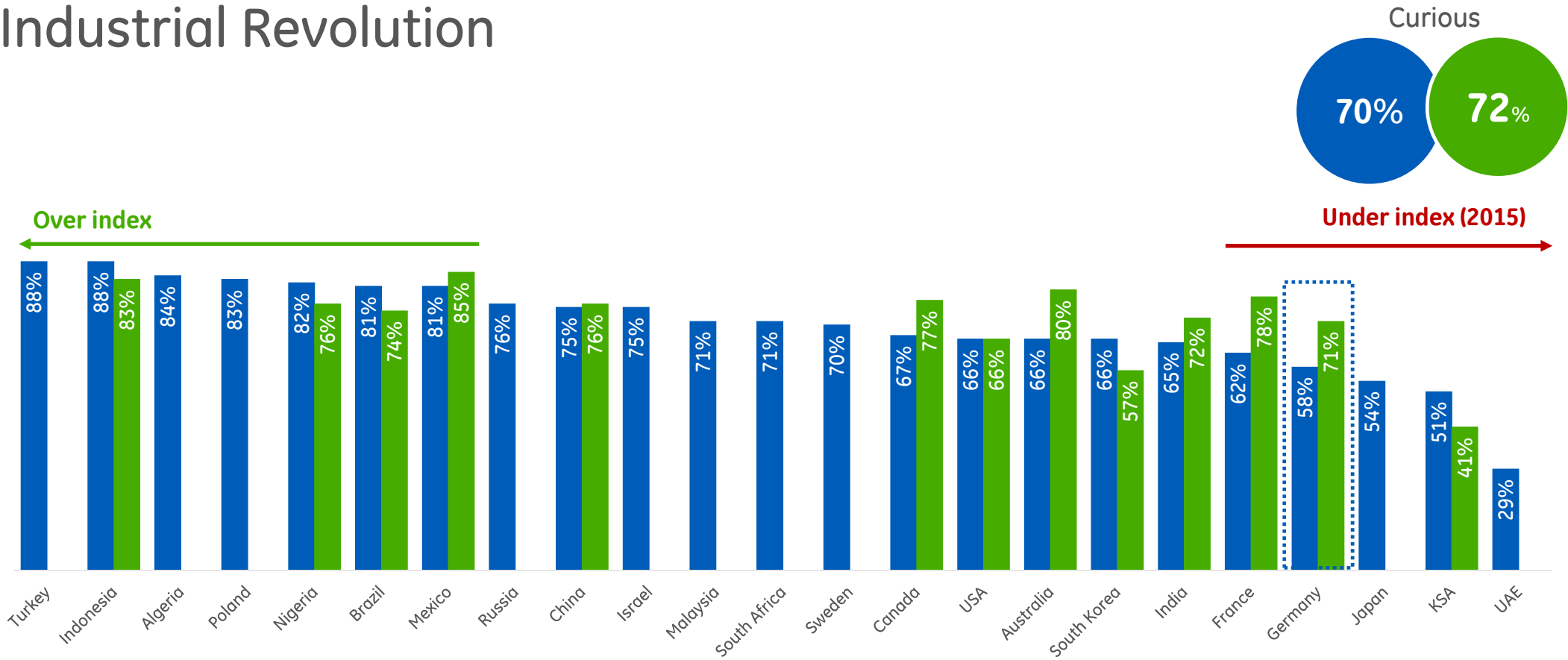


Q25. / Q23 How does the prospect of entering a fourth Industrial Revolution make you feel? Base business executives: 2,748. Base informed public: 1,346. Germany Base business executives: 101. Germany Base informed public: 105.

■ Business Executives
■ Informed Publics



Emerging markets are especially curious about the 4th Industrial Revolution

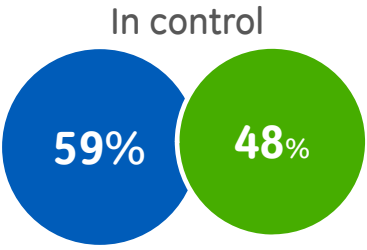


Q25. / Q23 How does the prospect of entering a fourth Industrial Revolution make you feel? Base business executives: 2,748. Base informed public: 1,346. Germany Base business executives: 101. Germany Base informed public: 105.

■ Business Executives
■ Informed Publics

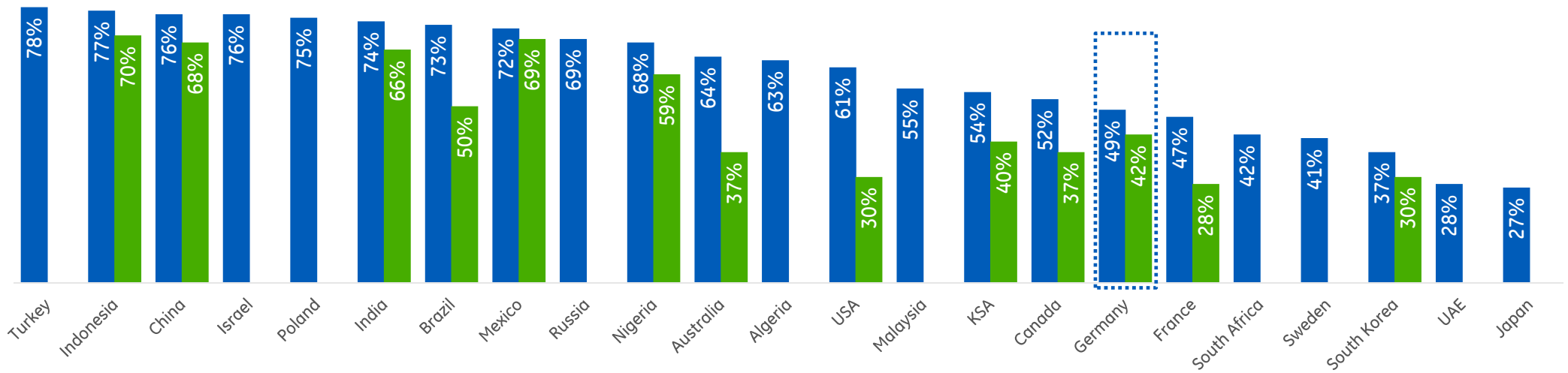


Informed Publics in developed markets feel the least in control



Over index

Under index (2015)



Q25. / Q23 How does the prospect of entering a fourth Industrial Revolution make you feel? Base business executives: 2,748. Base informed public: 1,346. Germany Base business executives: 101. Germany Base informed public: 105.

Business Executives
 Informed Publics

100

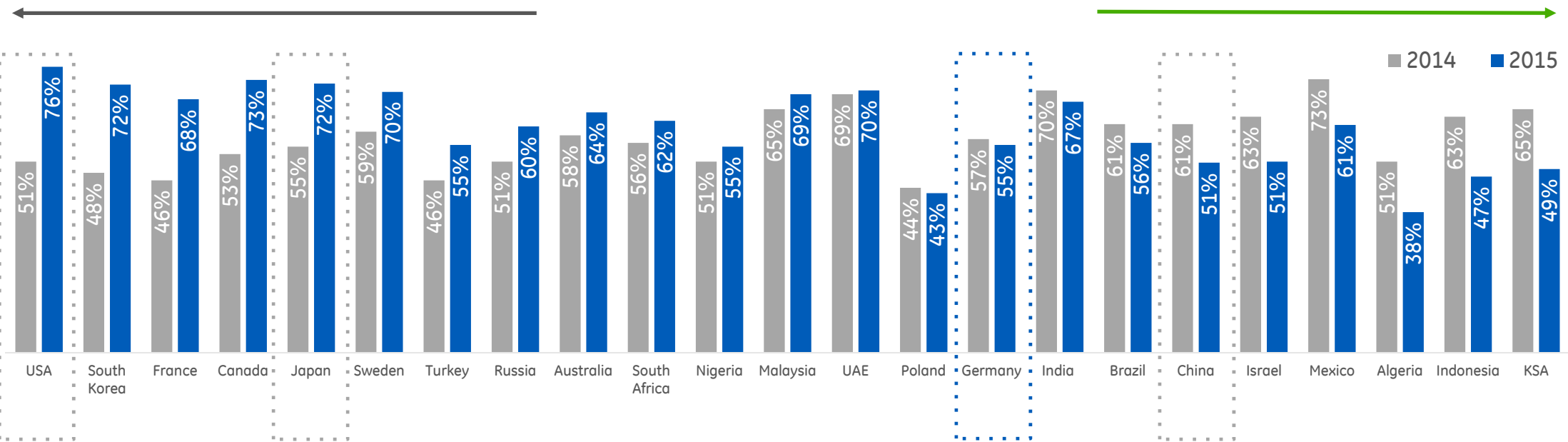


And we see being disruptive is a growing challenge for “Innovation champions”, with China an exception

The difficulty to come up with “radical and disruptive ideas”

Growing challenge

Reducing challenge

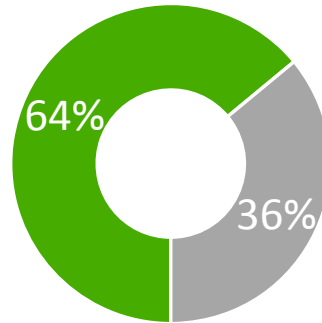


Q16. For each of the following challenges preventing businesses' ability to innovate efficiently, please say how far each of them applies to your company. The difficulty to come up with radical and disruptive ideas. Net % apply. Base business executives: 2,748. Germany Base business executives: 101.



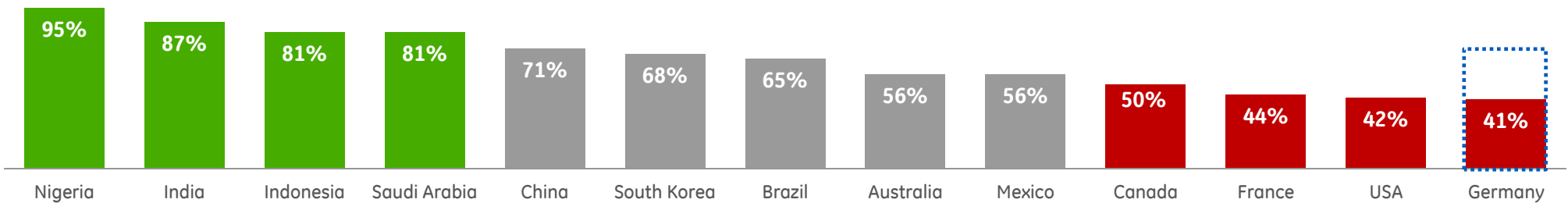
Emerging markets are more ready to give access to their personal data

I am willing to **allow access to the data I generate** if this will allow me to get a better service



I would rather **protect my data** and not get a perfect service

Market focus



Q18. Thinking as a consumer, please select which of the statements falls closer to your opinion. Base informed public: 1,346. Germany Base informed public: 105.



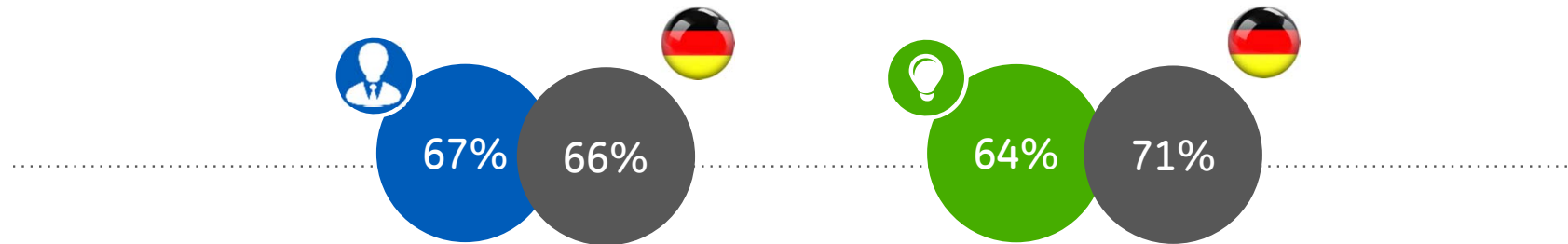
A CALL FOR GREATER GOVERNMENT SUPPORT

Executives and citizens alike call for public authorities to play a more supportive role in innovation. While few citizens (12%) believe their government is the top driver of innovation in their country, more (30%) think it should be. 57% say their country's regulations are not supportive of innovative companies, although emerging markets are more positive in their assessment. Most executives agree that data and privacy regulations are preventing more radical innovation by businesses.

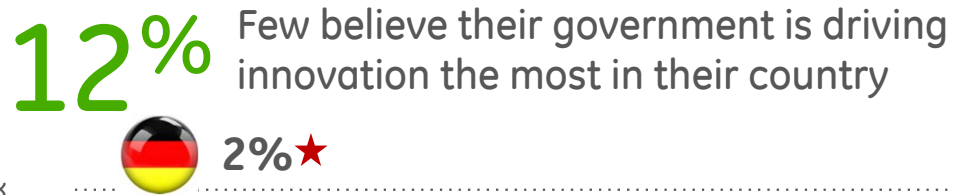
64%

Of citizens are willing to share access to their data if it leads to better service.

Executives and citizens call for public authorities to play a more supportive role in innovation



Most believe the private sector is in the driver's seat of innovation



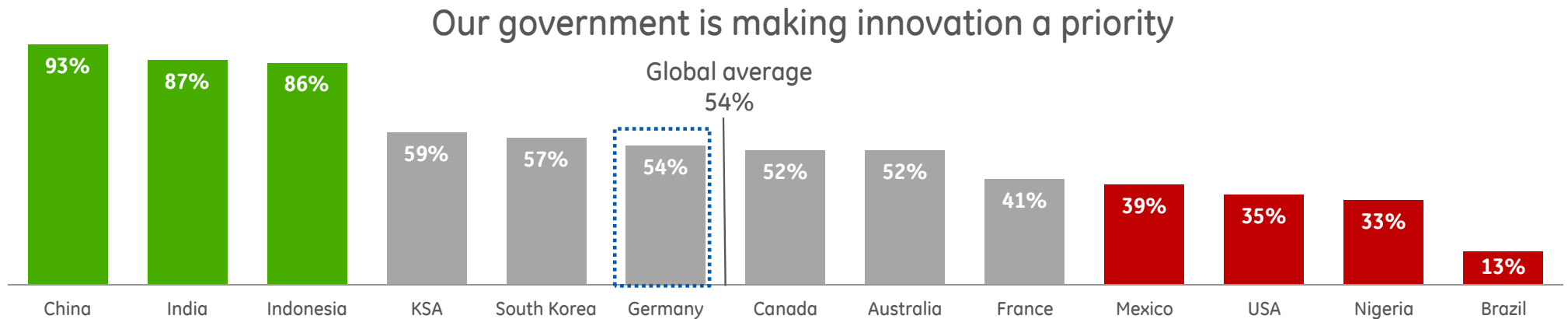
★ Over-index
★ Under - index



Q5. Who do you think is driving innovation the most today in your country? Q6B. Whose responsibility it is to be driving innovation the most in your country?
Base informed public: 1,346. Germany Base informed public: 105



Expectations for governments to make innovation a strategic priority are unequally met



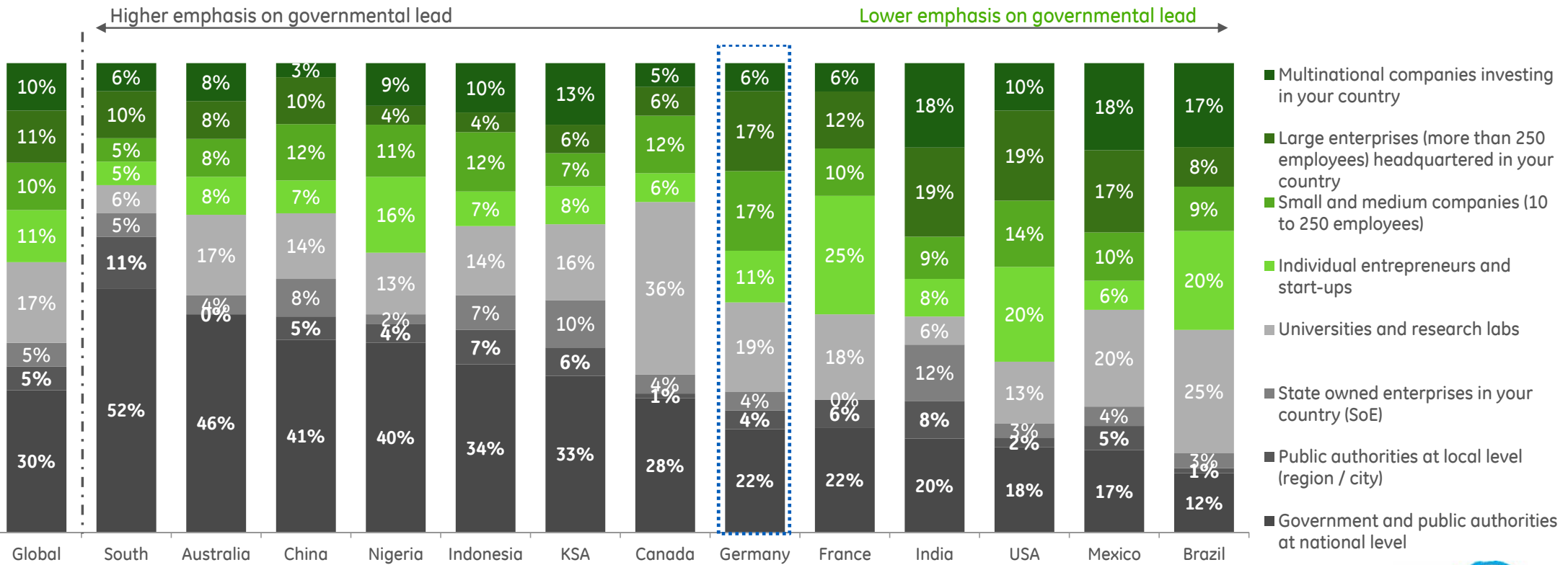
Q7. Thinking about government's role in innovation - How much do you agree or disagree with the following statements? Our government is making innovation a priority / Our government should focus less on driving innovation in our country [Net % agree]. Base Informed Public: 1,346. Germany Base Informed Public: 105.





A different perspective in each market as per whose responsibility it is to drive innovation

Whose responsibility it is to be driving innovation the most in your country?

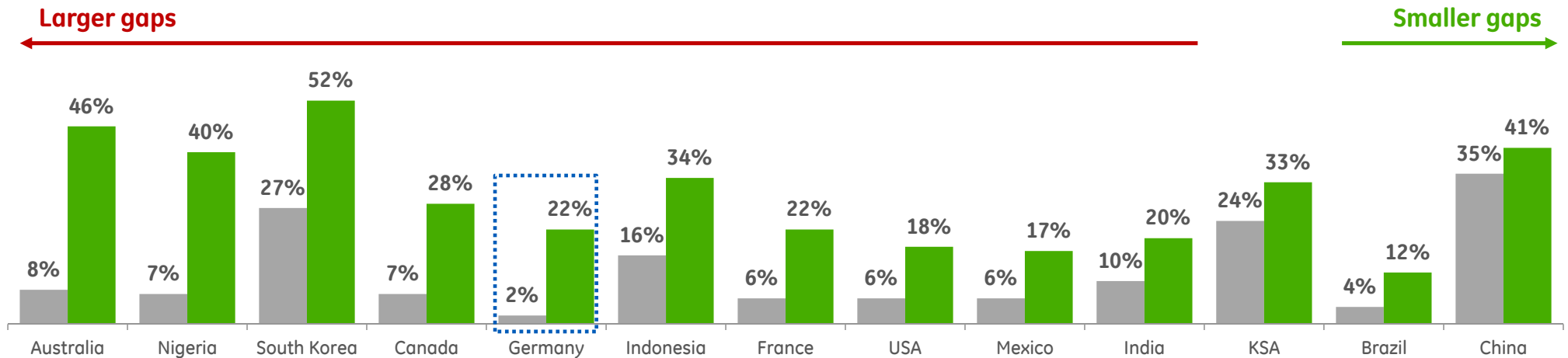


Q6.2. Whose responsibility it is to be driving innovation the most in your country? Base informed public: 1,346. Germany Base informed public: 105.



China is the only country where the government delivers in terms of driving innovation

■ Government is driving innovation the most today in your country
■ **Government should** be driving innovation the most today

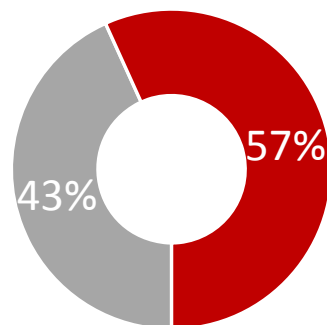


Q5. Who do you think is driving innovation the most today in your country? Government. Q6B. Whose responsibility it is to be driving innovation the most in your country? Government. Base informed public: 1,346. Germany Base informed public: 105.



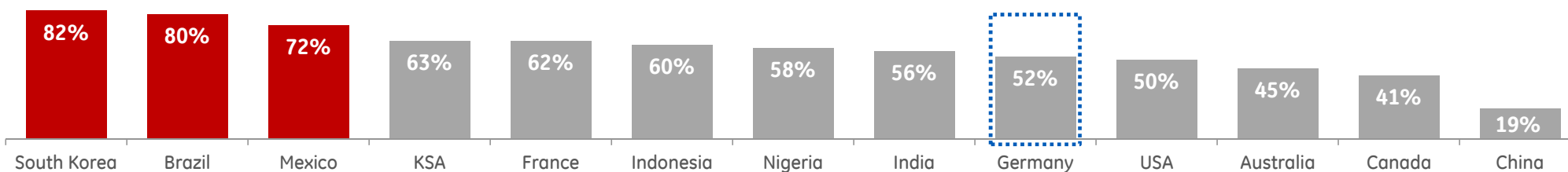
Over half of citizens think current regulations are not supporting innovative companies

Regulations in my country today **are supportive** of innovative companies



Regulations in my country today **are not supportive** of innovative companies

Regulations in my country today **are not supportive** of innovative companies



Q18. Thinking as a consumer, please select which of the statements falls closer to your opinion. Base informed public: 1,346. Germany Base informed public: 105.

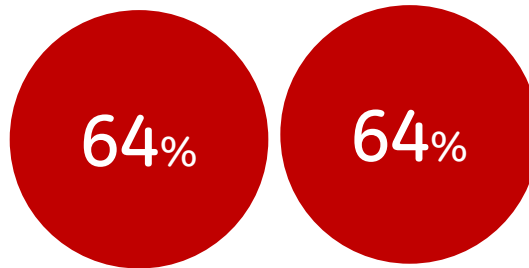
108



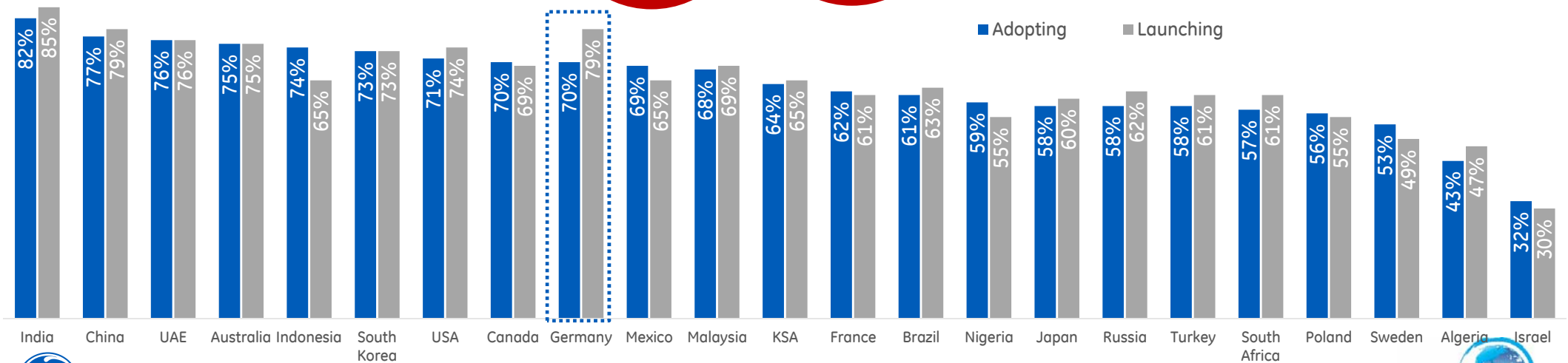
Data and privacy regulations are seen to prevent the adoption and launch of more radical innovation by businesses

Business Executives agree

REGULATIONS AROUND PRIVACY and DATA PROTECTION are preventing businesses from LAUNCHING more radical / transformative innovations



REGULATIONS around PRIVACY and DATA PROTECTION are preventing businesses from ADOPTING more radical / transformative innovations

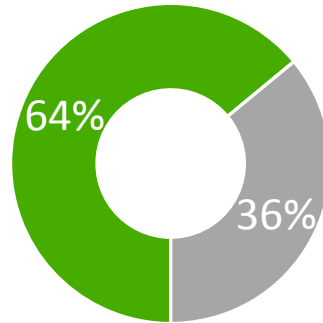


Q4.A & F How far do you agree or disagree with: Regulations around privacy and data protection are preventing businesses from launching more radical / transformative innovations. / Regulations around privacy and data protection are preventing businesses from adopting more radical / transformative innovations. Base business executives: 2,748. Germany Base business executives: 101.



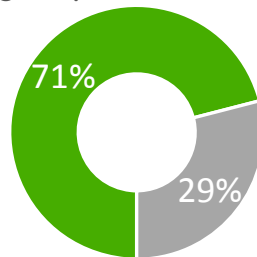
Citizens are ready to trust innovative businesses with their data IF this allows for better service

I am willing to **allow access to the data I generate** if this will allow me to get a better service

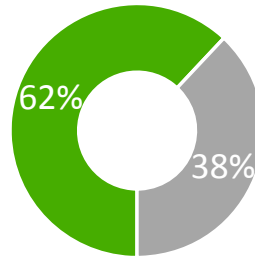


I would rather **protect my data** and not get a perfect service

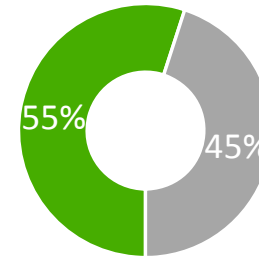
Age groups



25-34
year olds



35-45
year olds



46-65
year olds

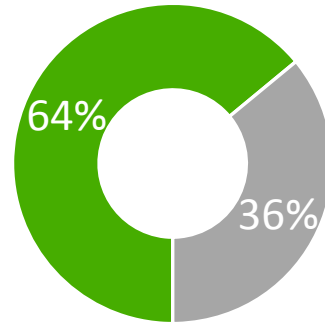


Q18. Thinking as a consumer, please select which of the statements falls closer to your opinion. Germany Base informed public: 105.



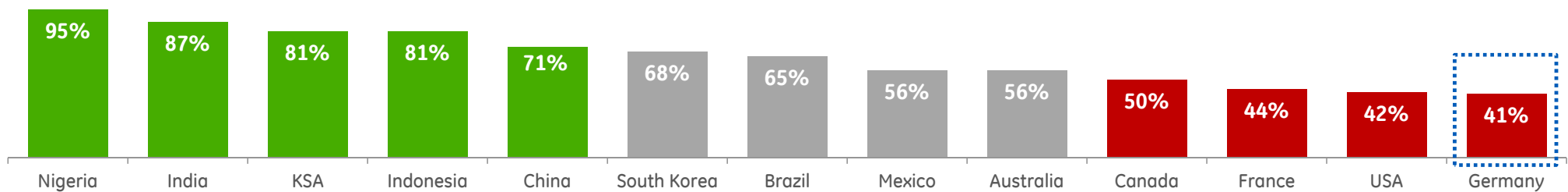
Citizens are ready to trust innovative businesses with their data IF this allows for better service

I am willing to **allow access to the data I generate** if this will allow me to get a better service



I would rather **protect my data** and not get a perfect service

Regulations in my country today **are not supportive** of innovative companies




Q18. Thinking as a consumer, please select which of the statements falls closer to your opinion. Base informed public: 1,346. Germany Base informed public: 105.

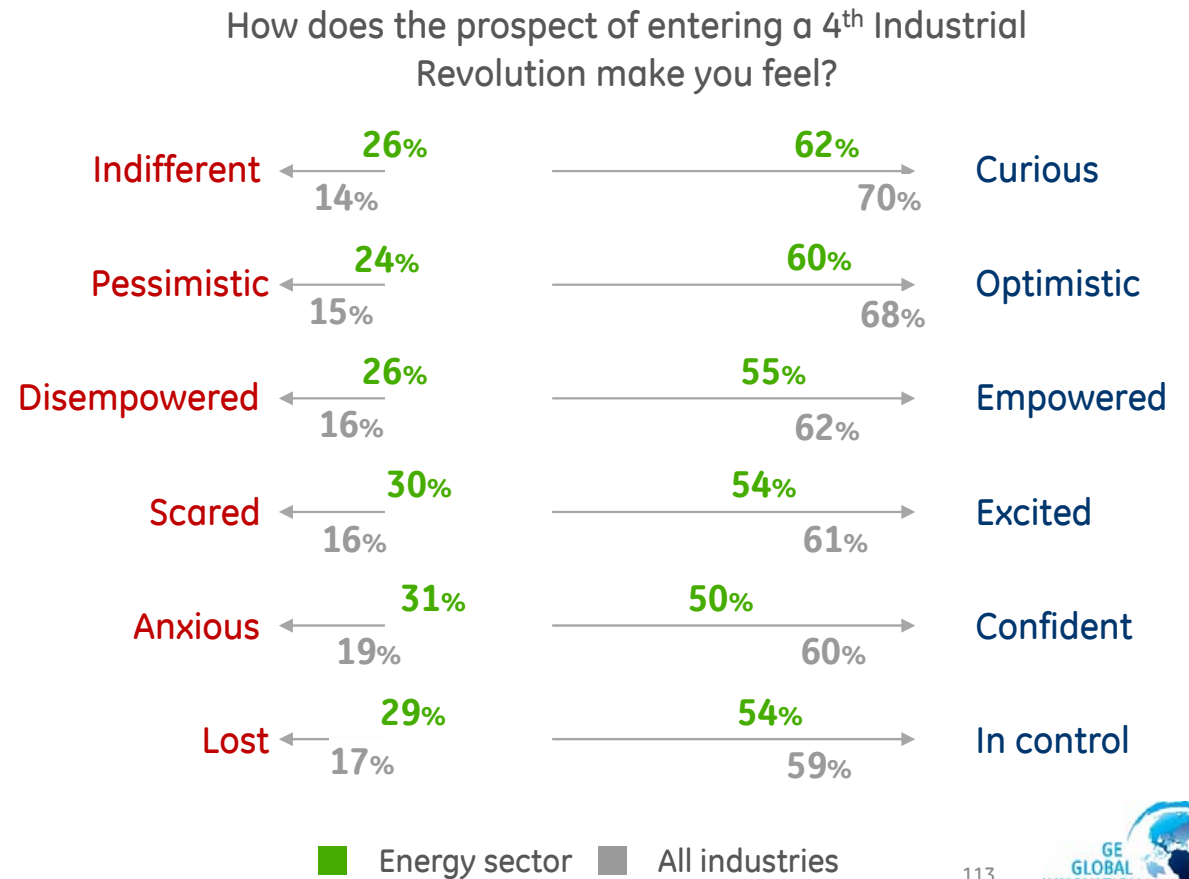


THE ENERGY SECTOR IS RIPE FOR DISRUPTION

Globally there is a belief that the energy market can still benefit greatly from new innovation approaches. However, energy companies are less positive about the prospect of the 4th Industrial Revolution.

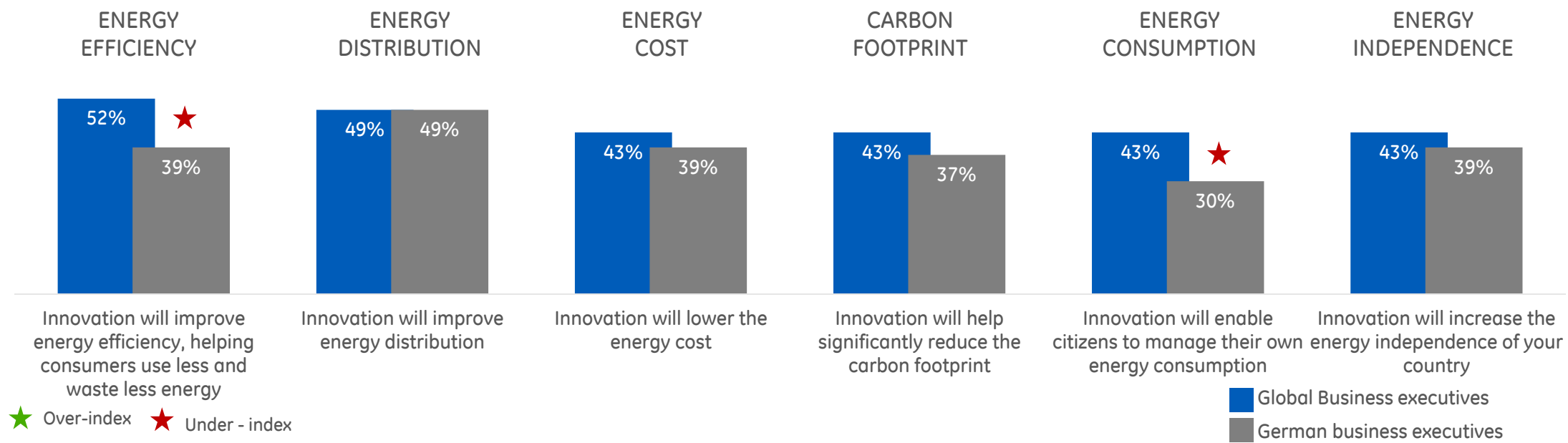
The energy sector can benefit greatly from new innovation approaches


61% **63%** of citizens believe the energy industry would benefit the most from investment in new innovation approaches



Innovation in the energy sector is thought to have a number of possible outcomes/benefits

Innovation in the ENERGY SECTOR, most likely to happen in your country

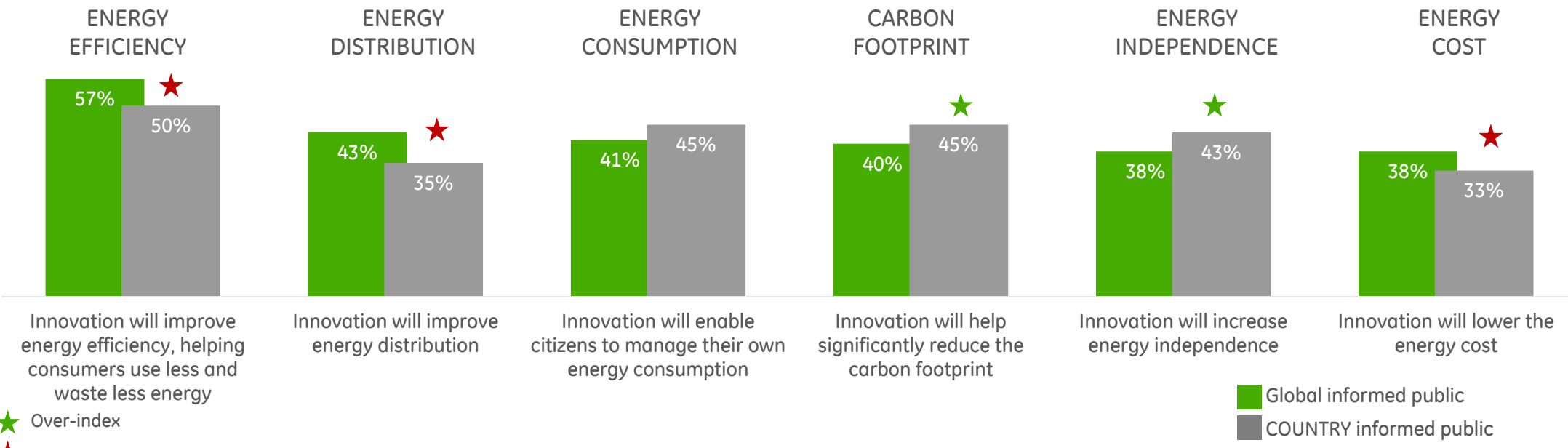


Q27 / Q24. Thinking now about innovation in the energy sector, which of the following outcomes is the most likely to happen in your country? Base business executives: 2,748. Base informed public: 1,346. Germany Base business executives: 101. Germany Base business executives: 101.



Innovation in the energy sector is thought to have a number of possible outcomes/benefits

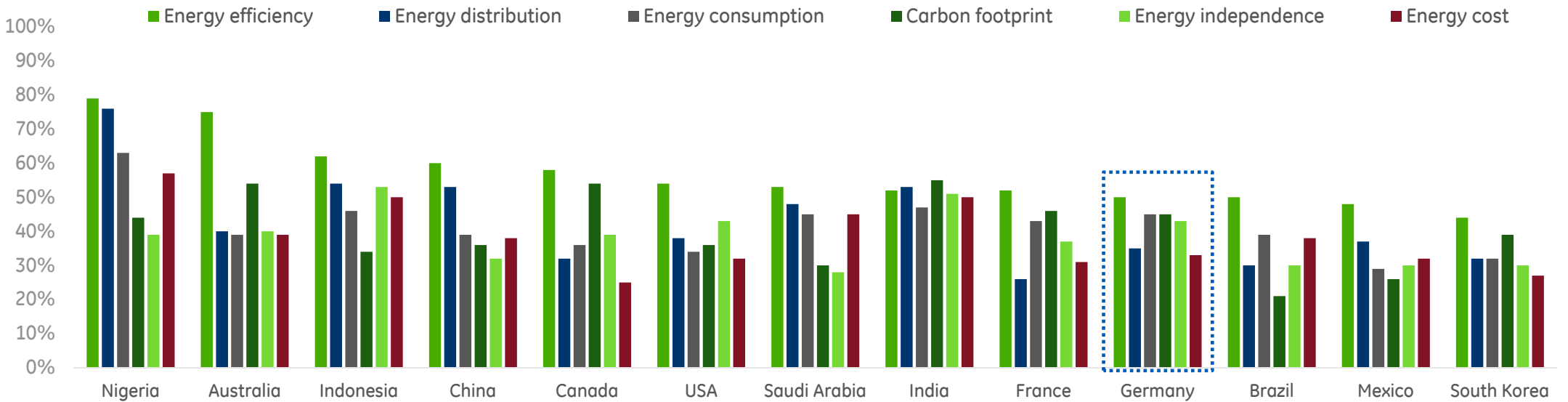
Innovation in the ENERGY SECTOR, most likely to happen in your country



Q27 / Q24. Thinking now about innovation in the energy sector, which of the following outcomes is the most likely to happen in your country? Base informed public: 1,346. Germany Base informed public: 105.



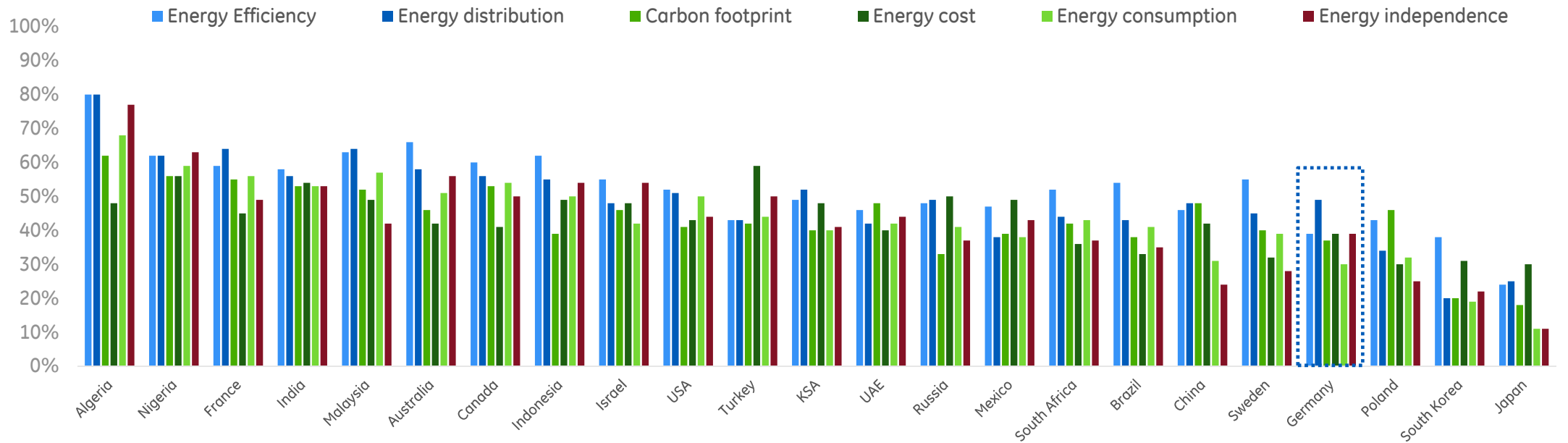
The most likely outcomes vary by country



Q24. Thinking now about innovation in the energy sector, which of the following outcomes is the most likely to happen in your country?
Base Informed Public: 1,346



The most likely outcomes vary by country

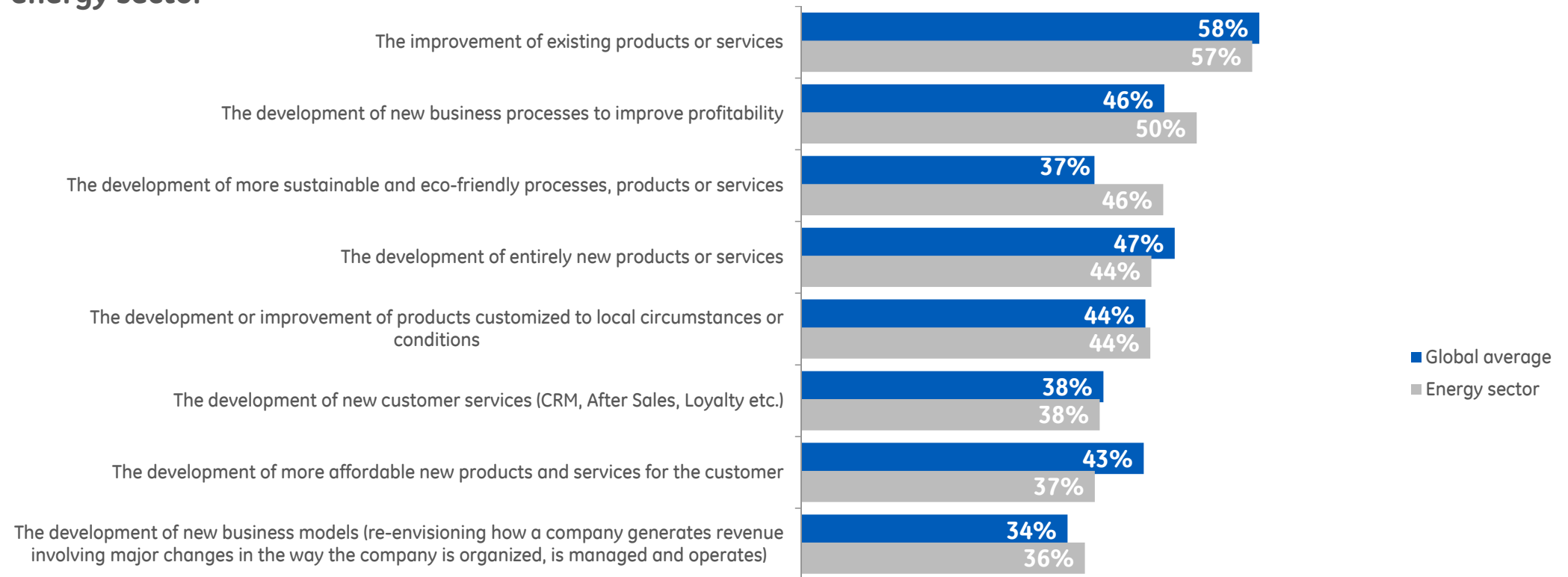


Q27. Thinking now about innovation in the energy sector, which of the following outcomes is the most likely to happen in your country? Base business executives: 2,748



Energy companies have seen the biggest contribution from existing products/services over the past few years

Types of innovations that have contributed the most to your company's performance in the past few years – energy sector

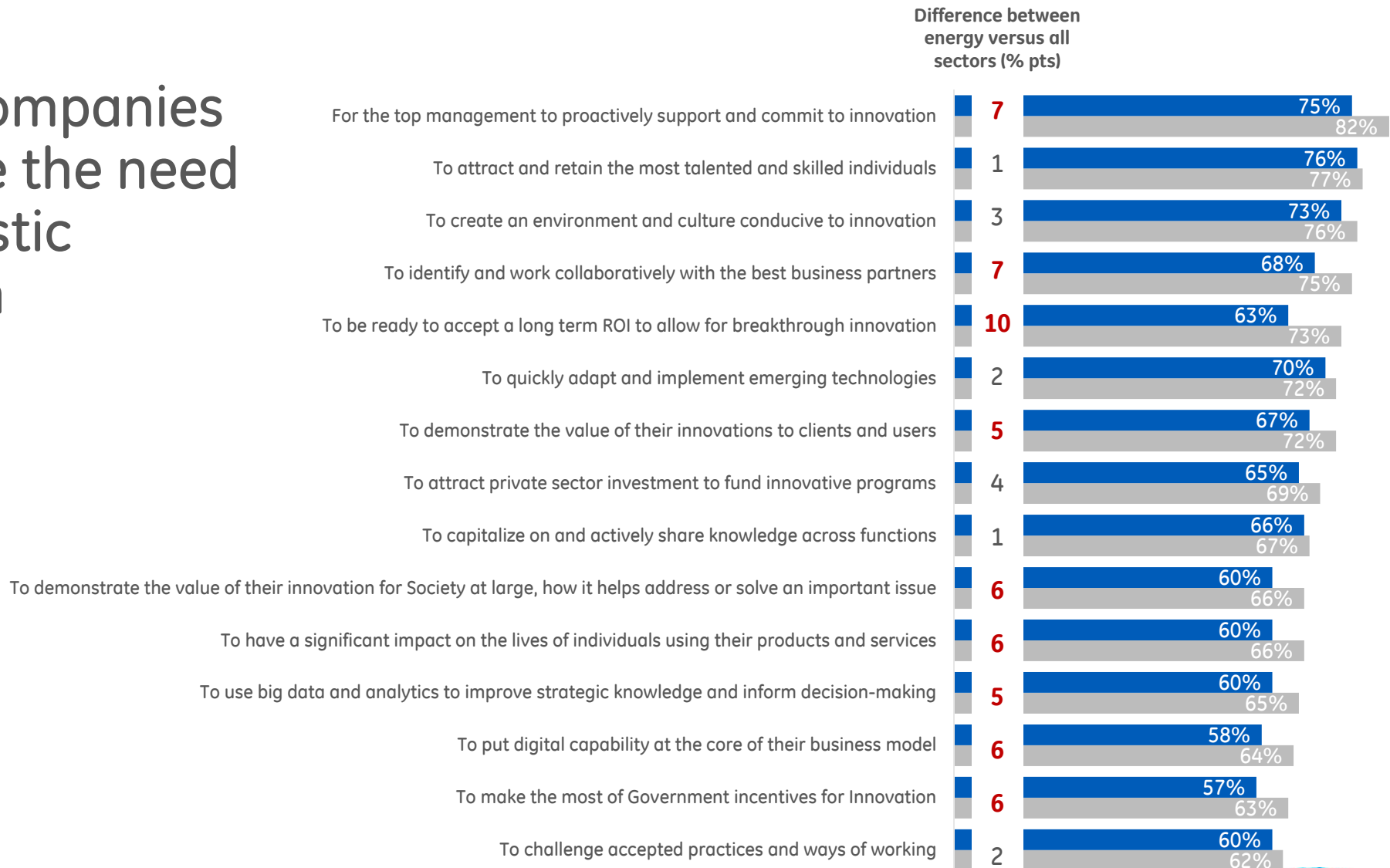


Q9. In the past few years, what kind of innovations has contributed the most to your company's performance? Base business executives: 2,748



Energy companies recognize the need for a holistic approach

■ All industries
■ Energy related



Q7. On a scale from 1 to 10, how important do you think the following elements are for a company to be able to innovate successfully? Net: Top 3



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