

DigiChem SurvEY 2020

Digitalization progress in a global comparison

April 2021

Purpose

Digitalization has become one the most important drivers and enablers for business development and performance improvement in the Chemical industry.

The global DigiChem SurvEY 2020 is a long-term study with a focus on implementation progress and benefits of digitalization.

Agenda

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- 1 Study approach and summary of results
 - 2 Global results and regional comparison
 - 3 Influence of COVID-19
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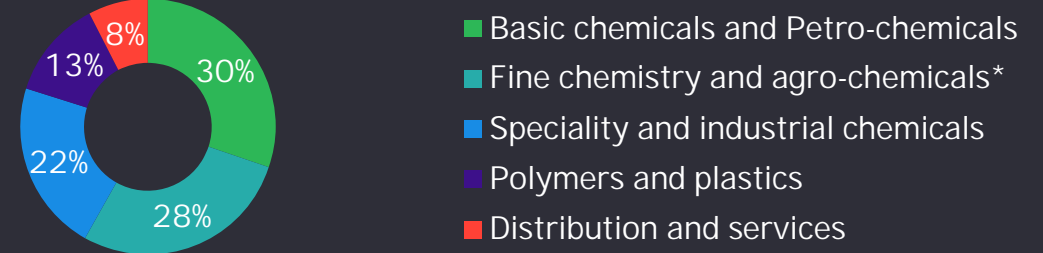
1

Study approach and summary of results

Study approach

- Last 3-year review and next 3-year outlook
- Conducted by an independent market research institute
- 369 top management members and executives from various segments and sizes of chemical companies
- Global approach including regions Europe, North America, Asia-Pacific, Middle East and Africa
- Additional COVID-19 survey with 124 participants (focus on region Europe and North America)

Chemical segments



Regions



Revenue



Note: chart percentages may not total 100% due to rounding.

*including Life Sciences

Summary of results (1/2)

1 Respondents with revenues between US\$2b – US\$10b report the maximum progress in digitalization across all regions except Asia-Pacific

2 Compared with North America and Europe, participants in Asia-Pacific and Africa are expecting revolutionary and disruptive impact of digitalization to a much higher degree

3 Asia-Pacific companies see equally great opportunities in strategic and operational issues, while participants from Europe and North America have an operational focus.

4 Operational competitiveness in logistics as well as in sales and order management is expected to highly benefit from digitalization across all the regions.



Summary of results (2/2)

5

Most of the regions have achieved benefits in cost reduction and improved responsiveness, except Asia-Pacific which witnessed maximum benefits in market access and ecosystems.

6

Chemical players expect improved data analysis and integration of optimized processes and systems to be among the digitalization topics with the highest potential.

7

Qualification and investments are top barriers in Europe and North America while Asia-Pacific and Middle East and Africa suffer from lack of technical infrastructure.

8

Overall, the majority of participants felt that their company was well or very well prepared for the COVID-19 pandemic. Regarding concrete measures in response to COVID-19, information and transparency as well as clear rules and instructions are most important.



2

Global results and regional comparison



Compared with North America and Europe, participants in Asia-Pacific are expecting revolutionary and disruptive impact of digitalization to a much higher degree.

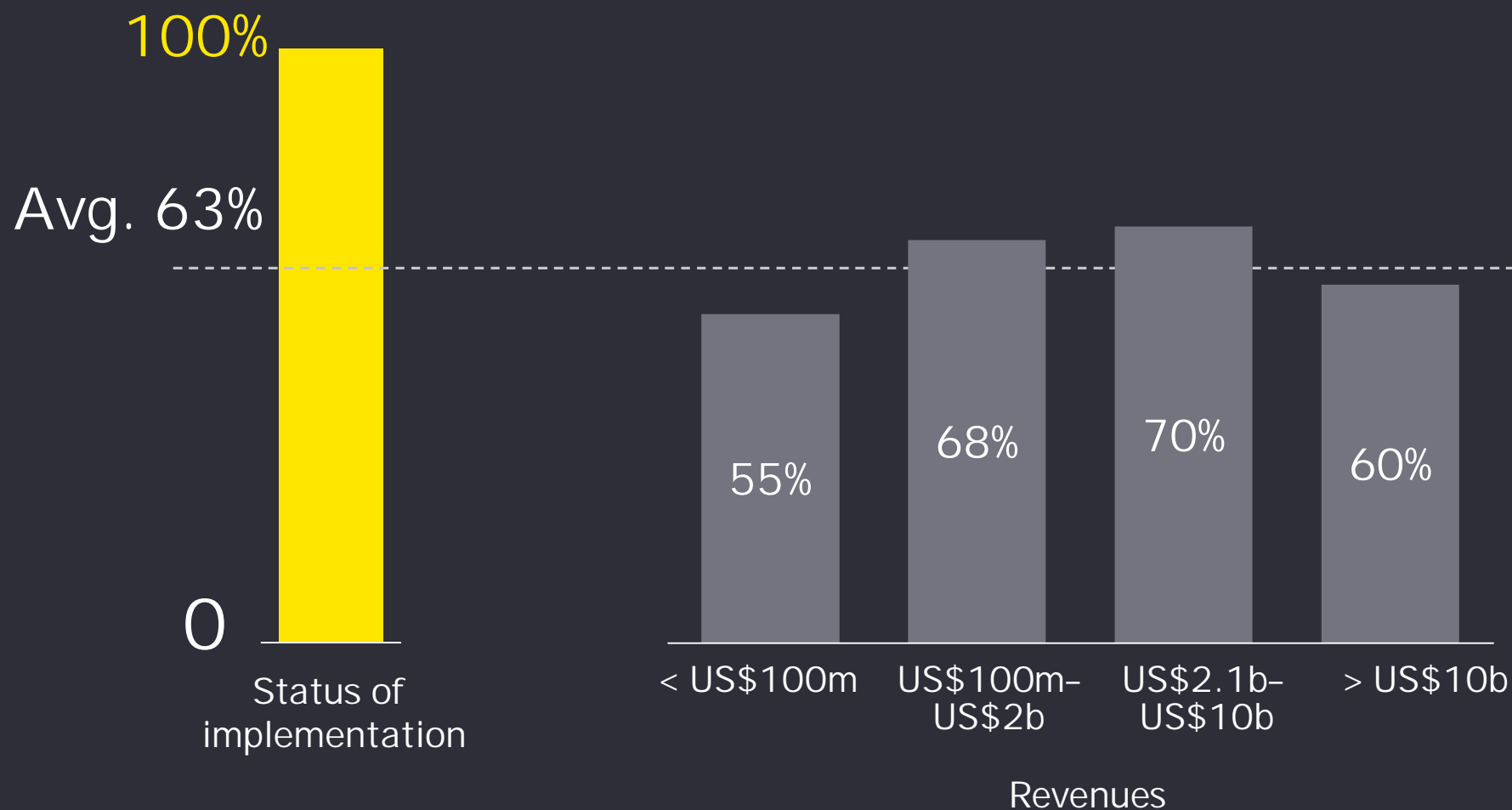
How would you assess the current status of the implementation of digitalization projects in your company?

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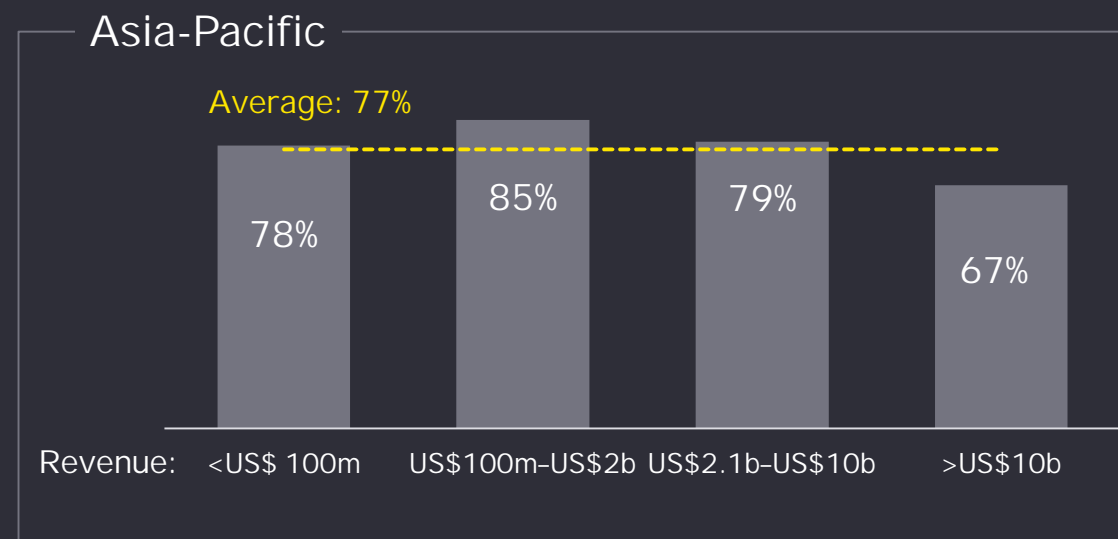
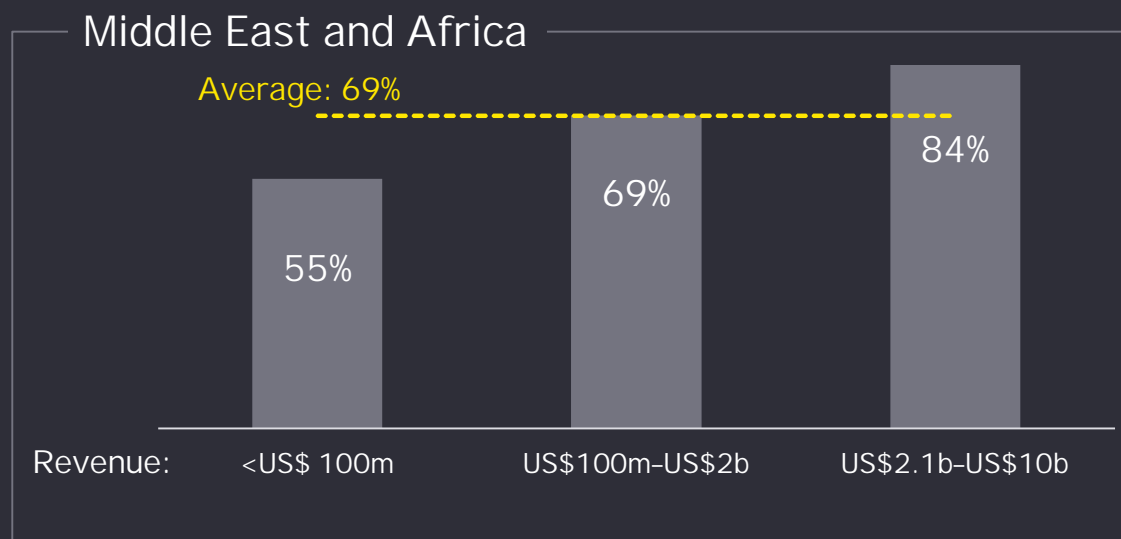
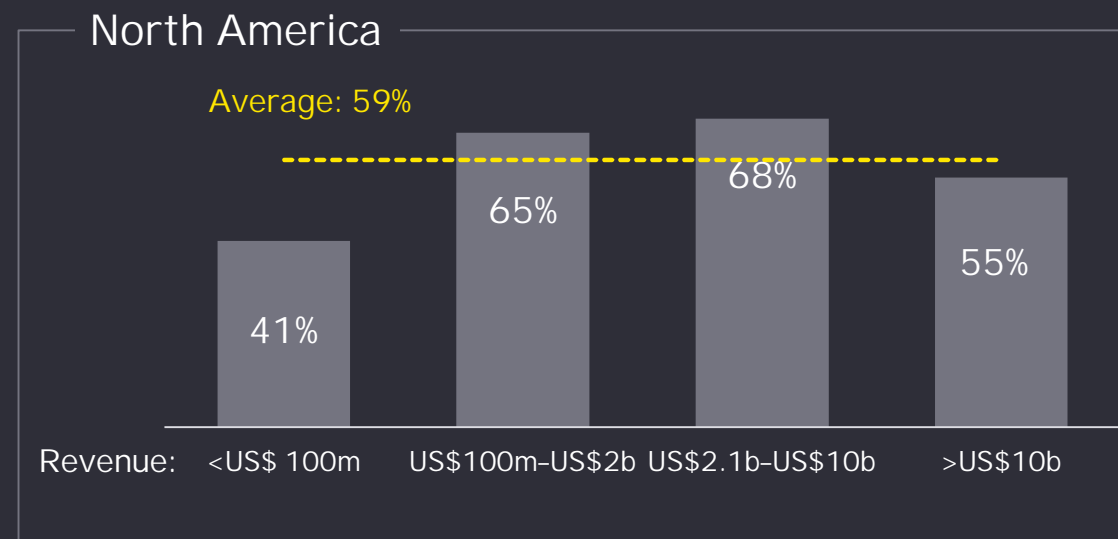
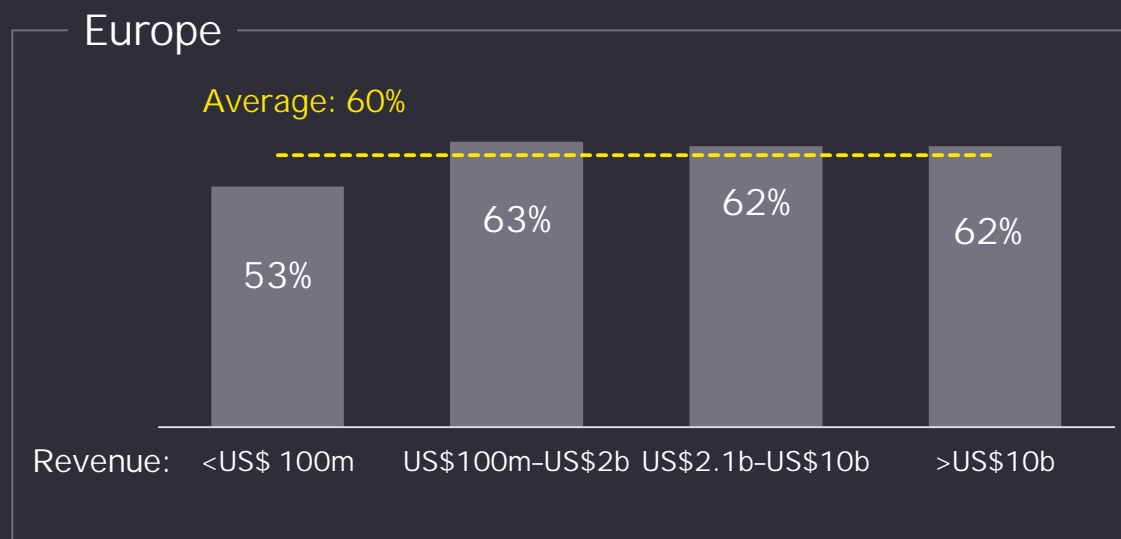
The digital transformation of the entire company is already running smoothly

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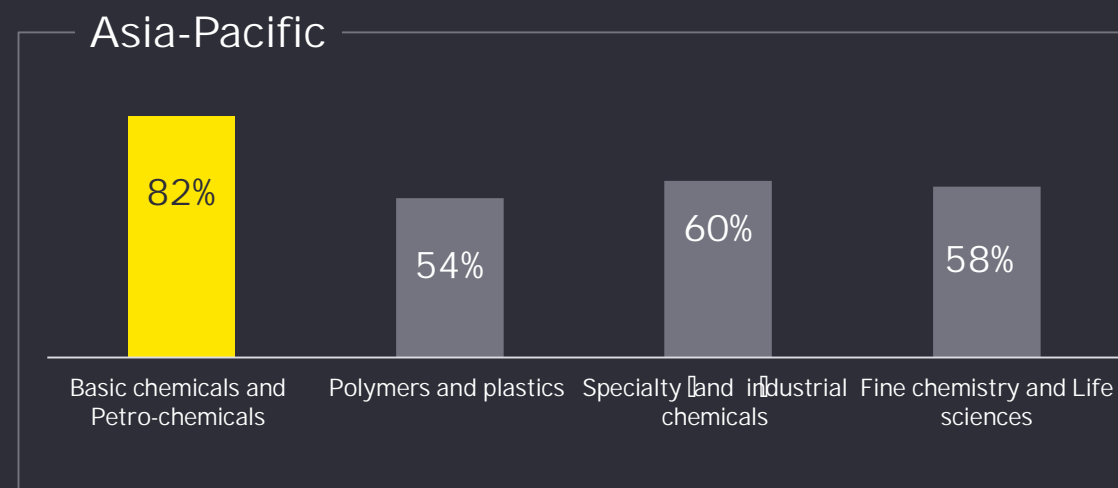
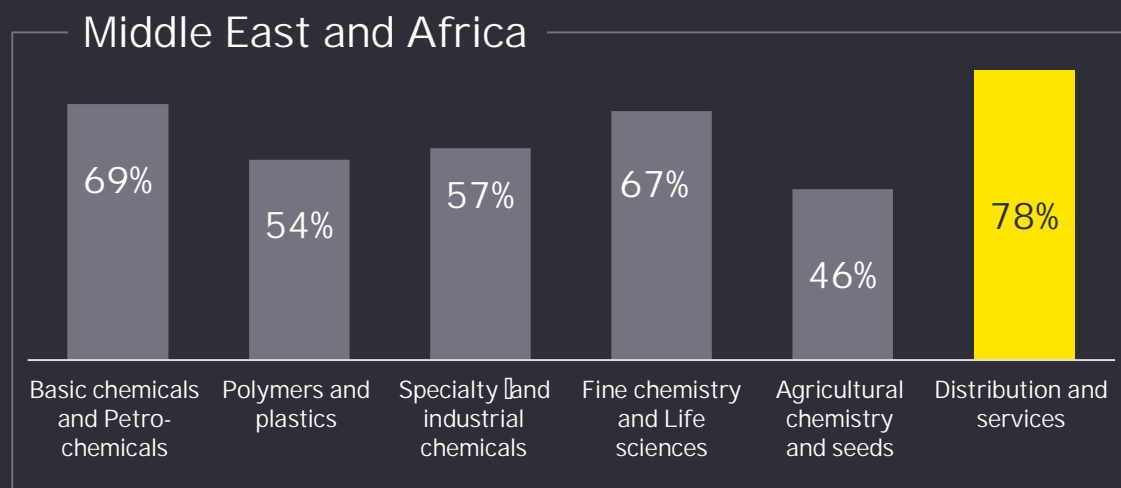
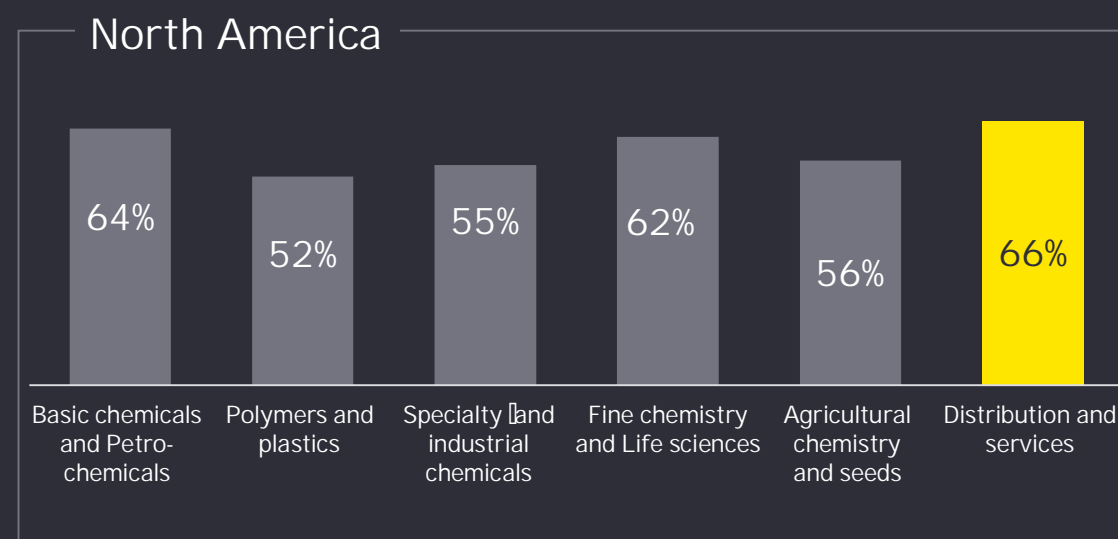
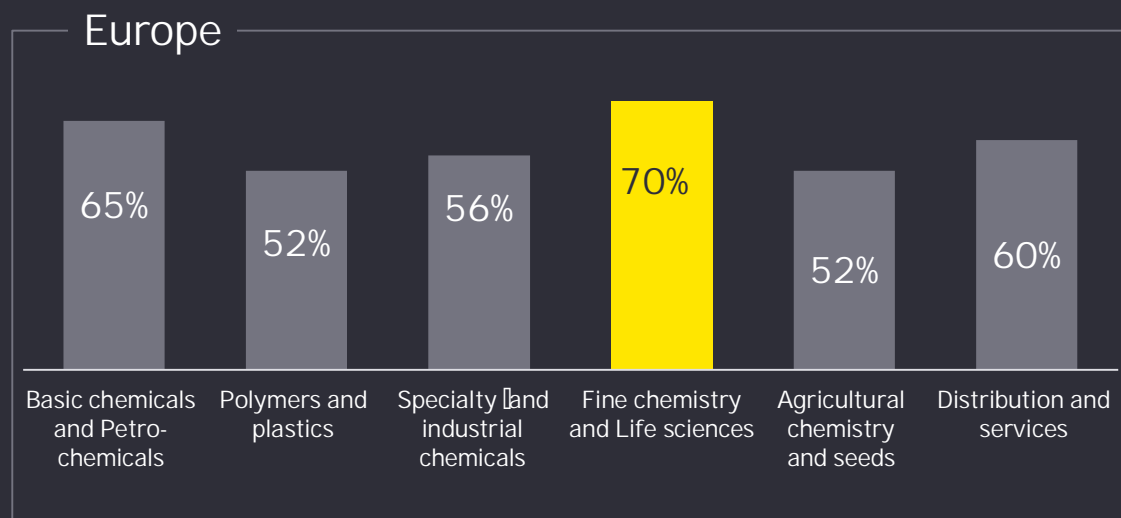
We have not yet started any digitization projects or activities



How would you assess the current status of the implementation of digitalization projects in your company? (breakdown by region)



How would you assess the current status of the implementation of digitalization projects in your company? (breakdown by segment)

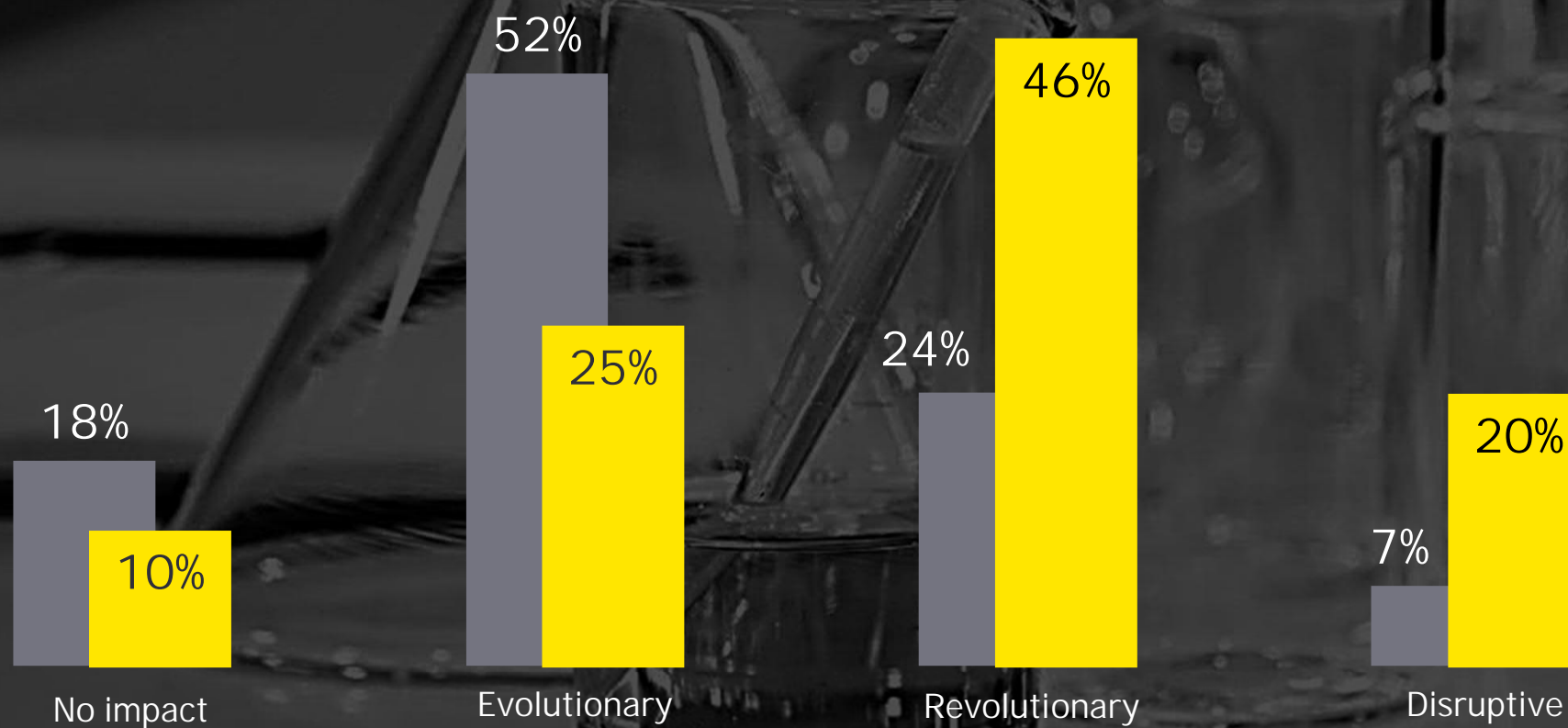


Note: No respondents for Distributor and services and Agricultural chemistry and seeds segments from this region.

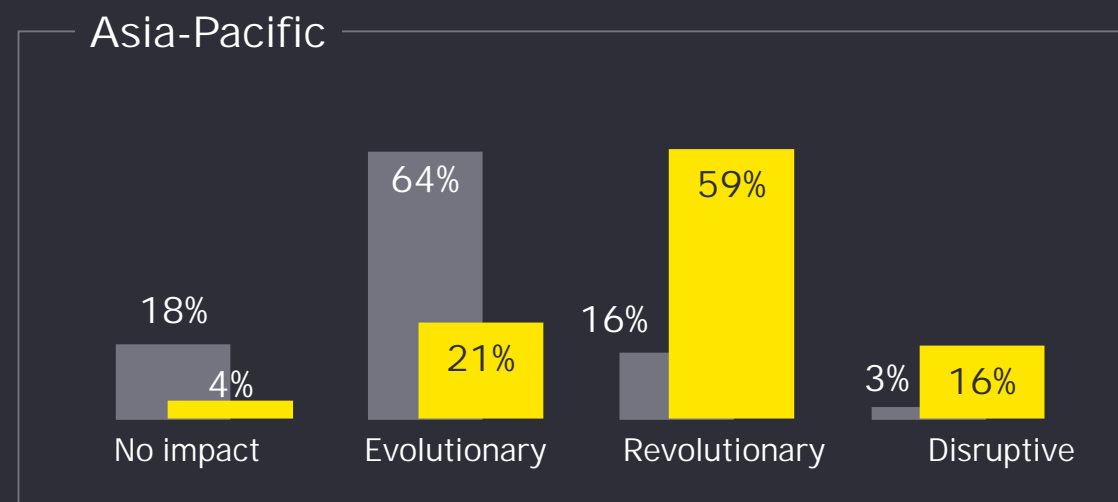
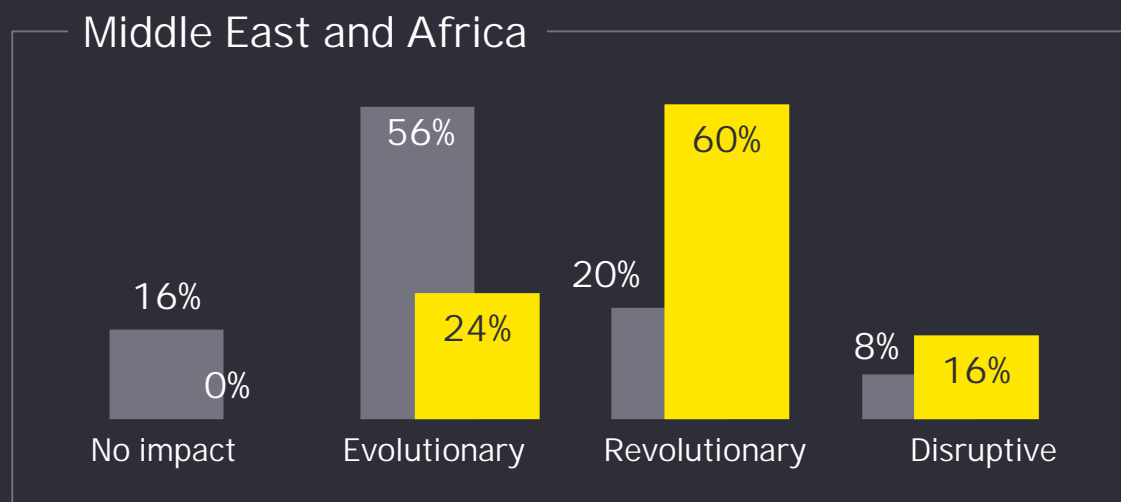
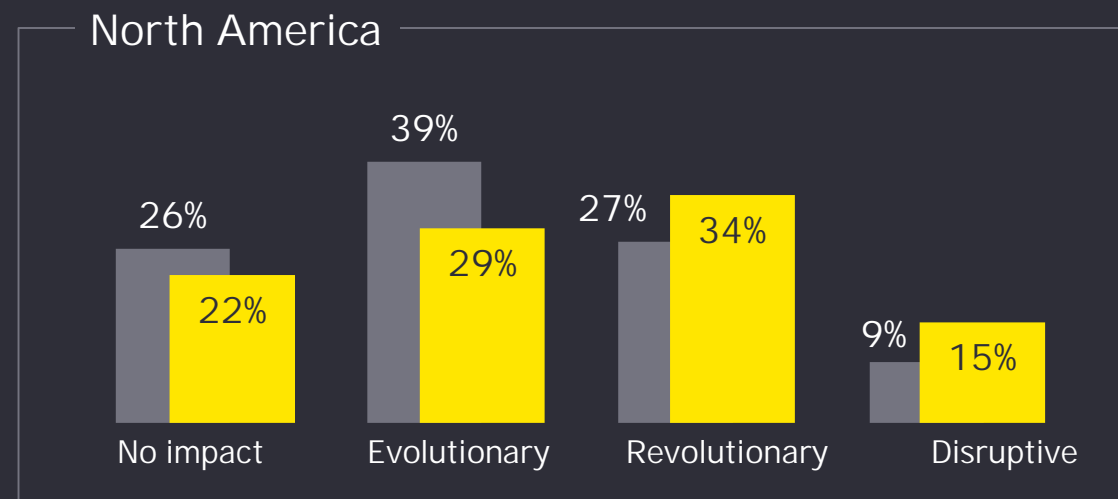
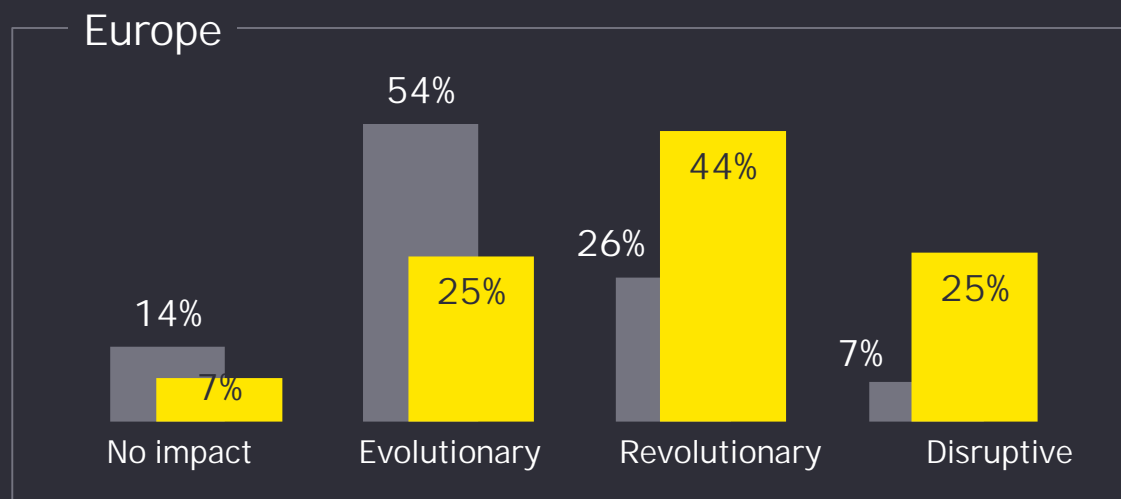
What impact do you expect digitalization will have on your company in the next three years?

Legend

- Next 3 years
- Last 3 years



What impact do you expect digitalization will have on your company in the next three years? (by region)

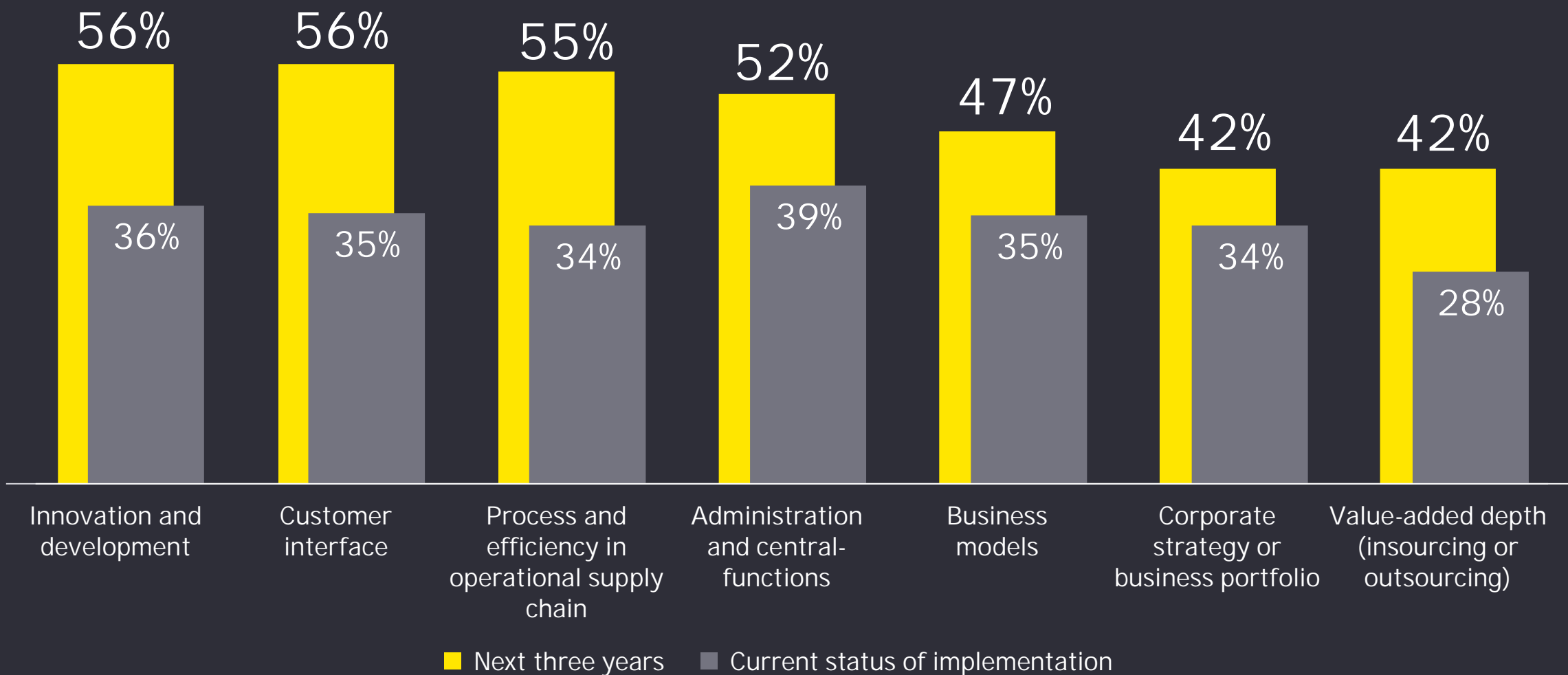


■ Next 3 years ■ Last 3 years

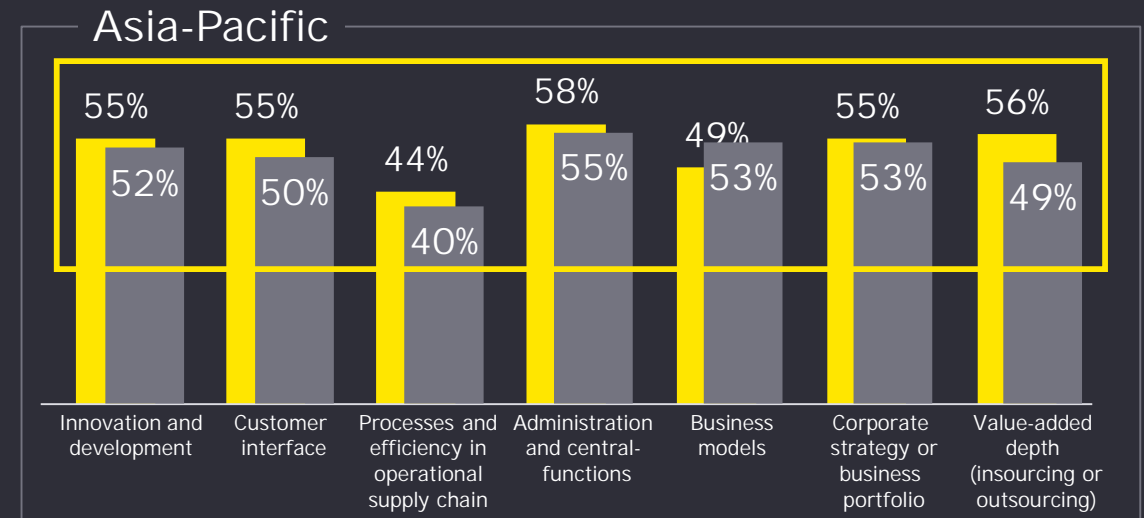
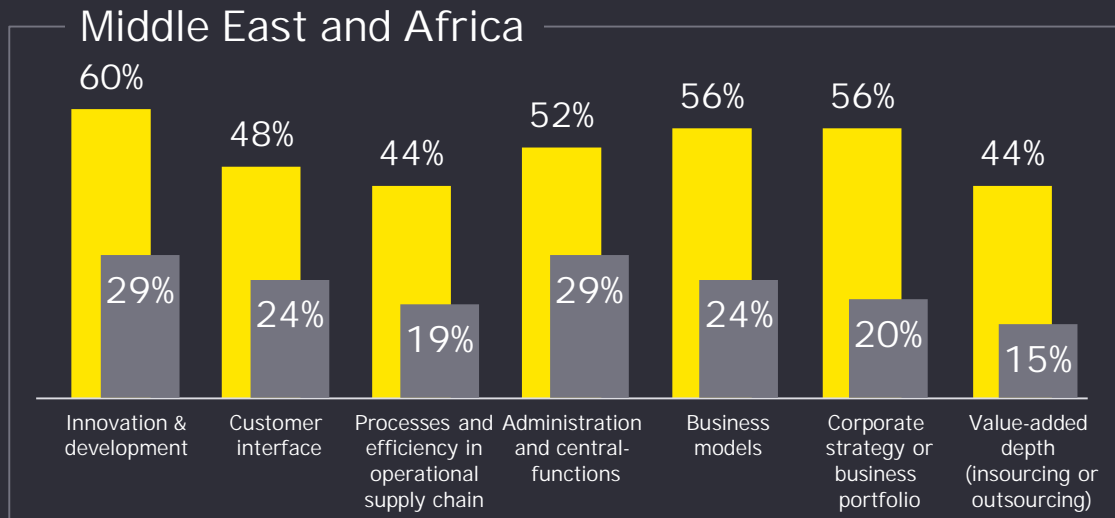
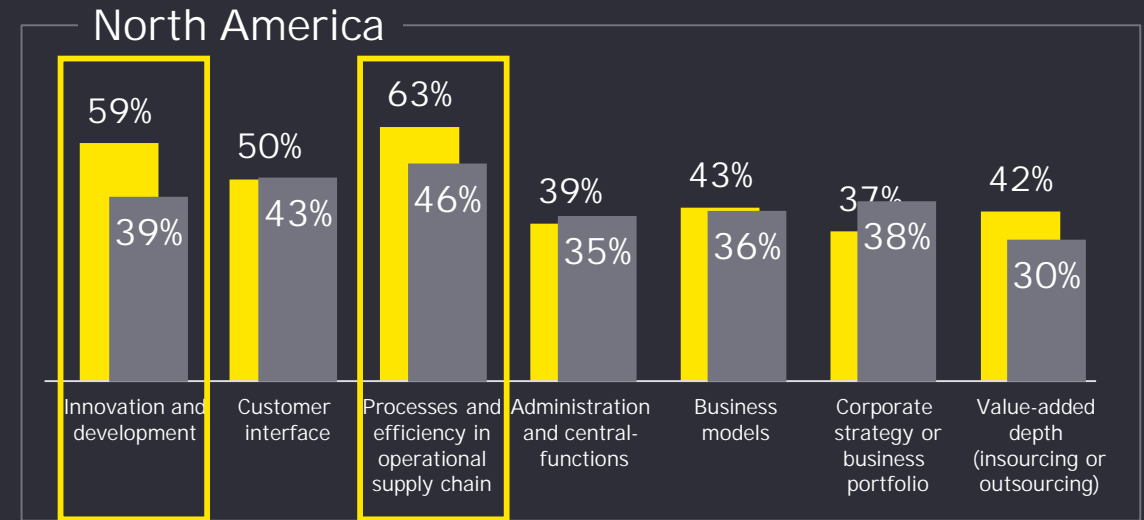
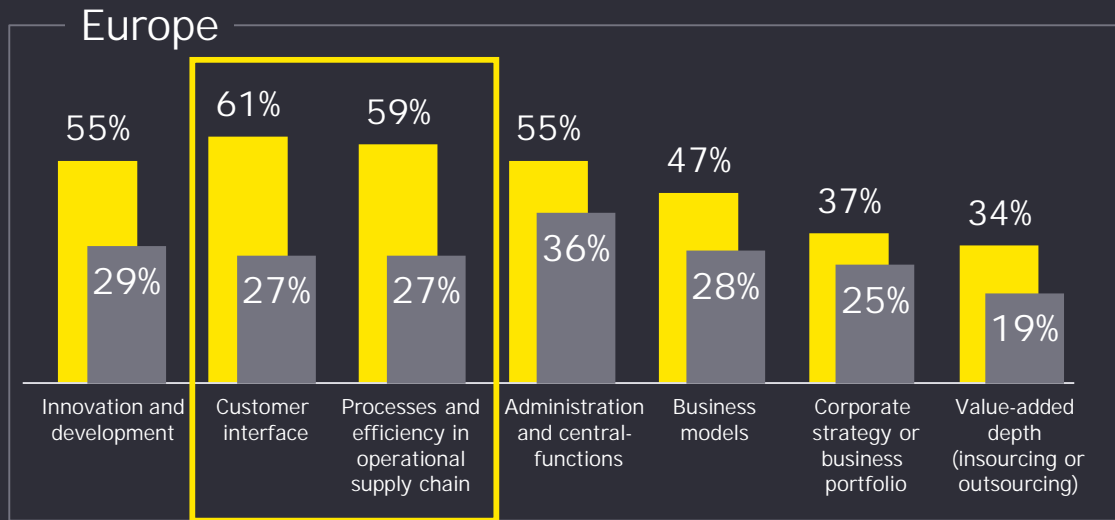


Asia-Pacific companies see equally great opportunities in strategic and operational issues, while participants from Europe and North America have an operational focus.

To what extent digitalization will affect the success of the strategic and operational positioning of your company in the next three years?



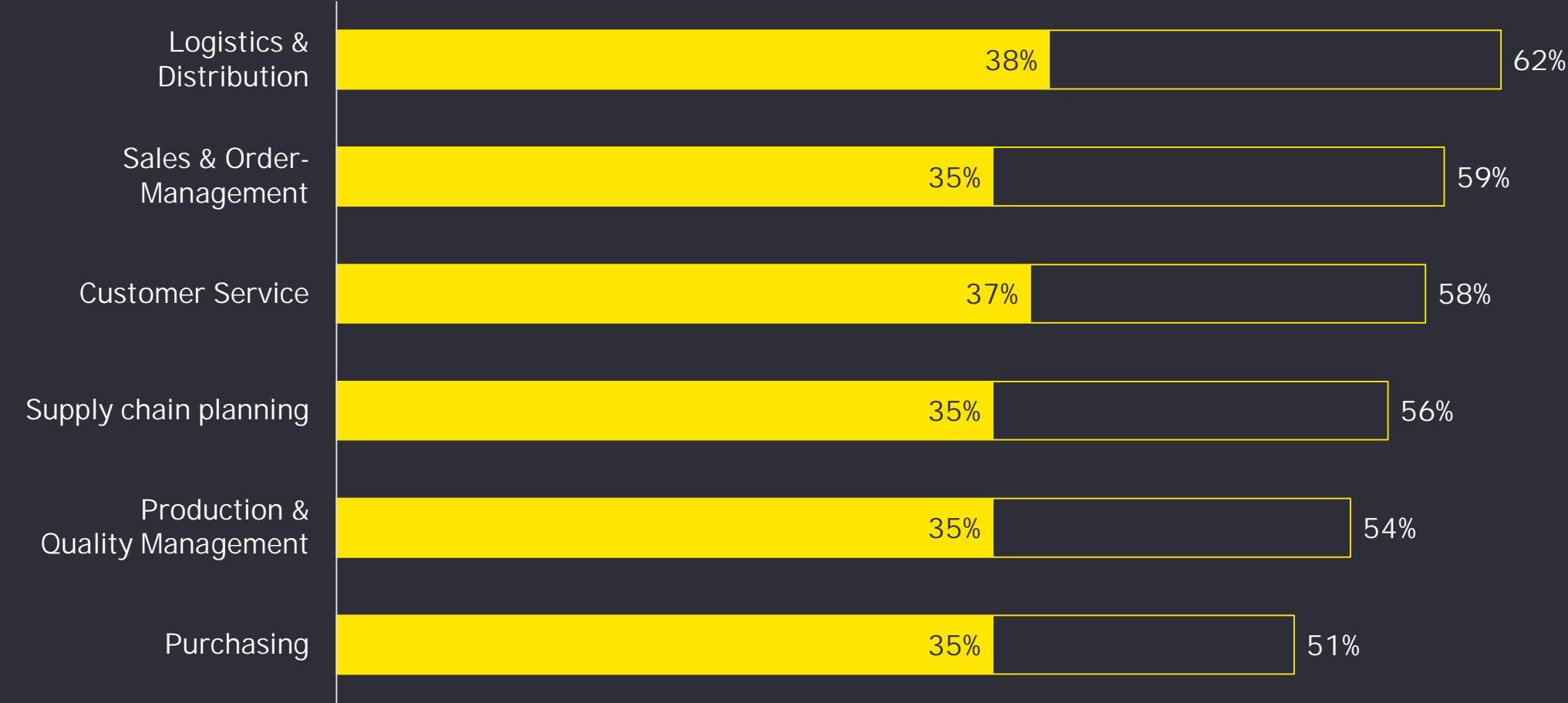
To what extent digitalization will affect the success of the strategic and operational positioning of your company in the next three years? *(by region)*





Operational competitiveness in logistics as well as in sales and order management is expected to highly benefit from digitalization across all the regions.

To what extent will operational competitiveness be affected by digitalization in the next three years?

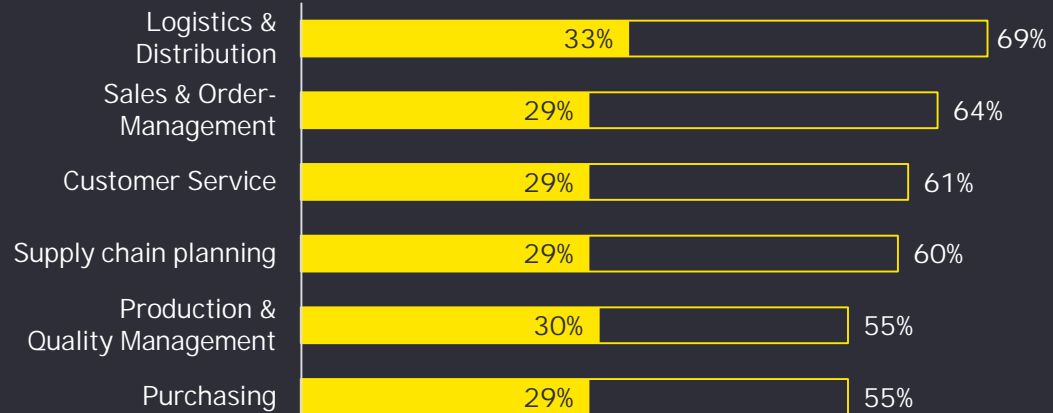


Includes responses for strong & very strong impact

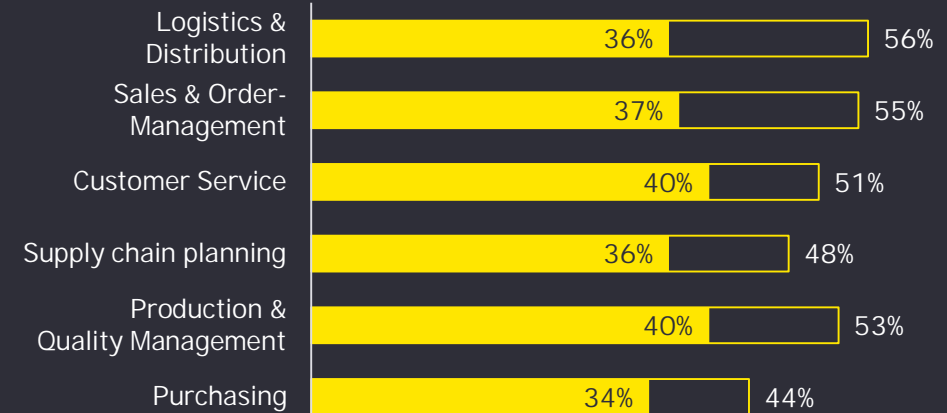
- Legend
- Impact over next three years
 - Current status of implementation

To what extent will operational competitiveness be affected by digitalization in the next three years? (by region)

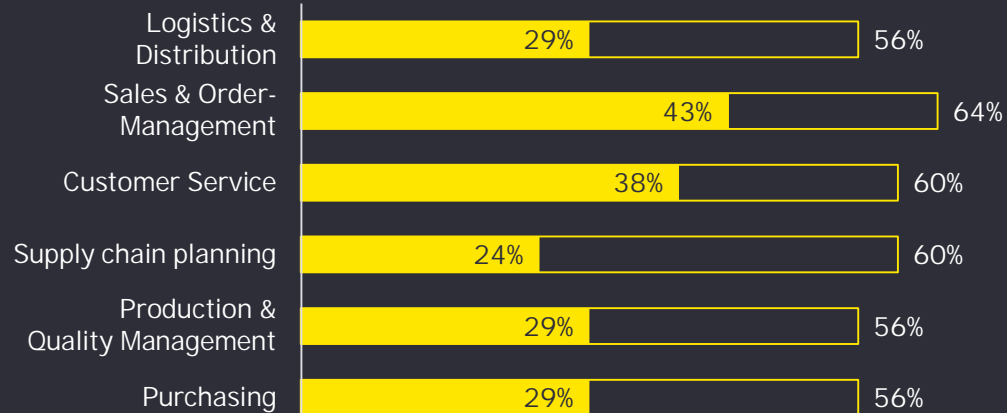
Europe



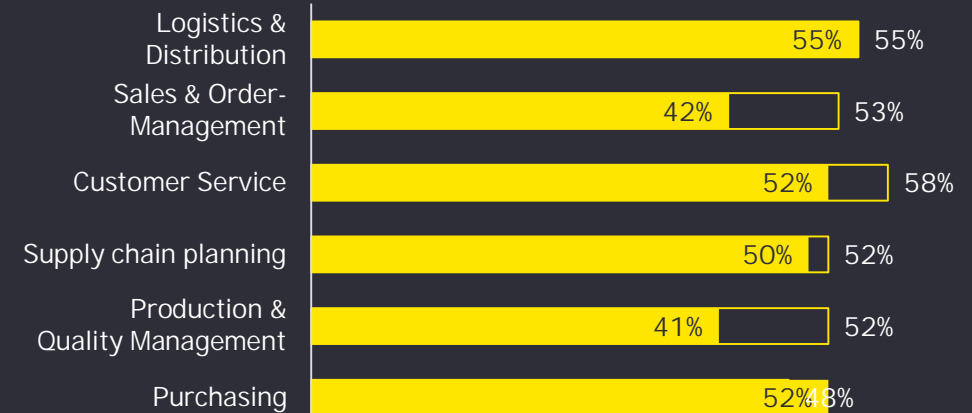
North America



Middle East and Africa



Asia-Pacific



Includes responses for strong & very strong impact

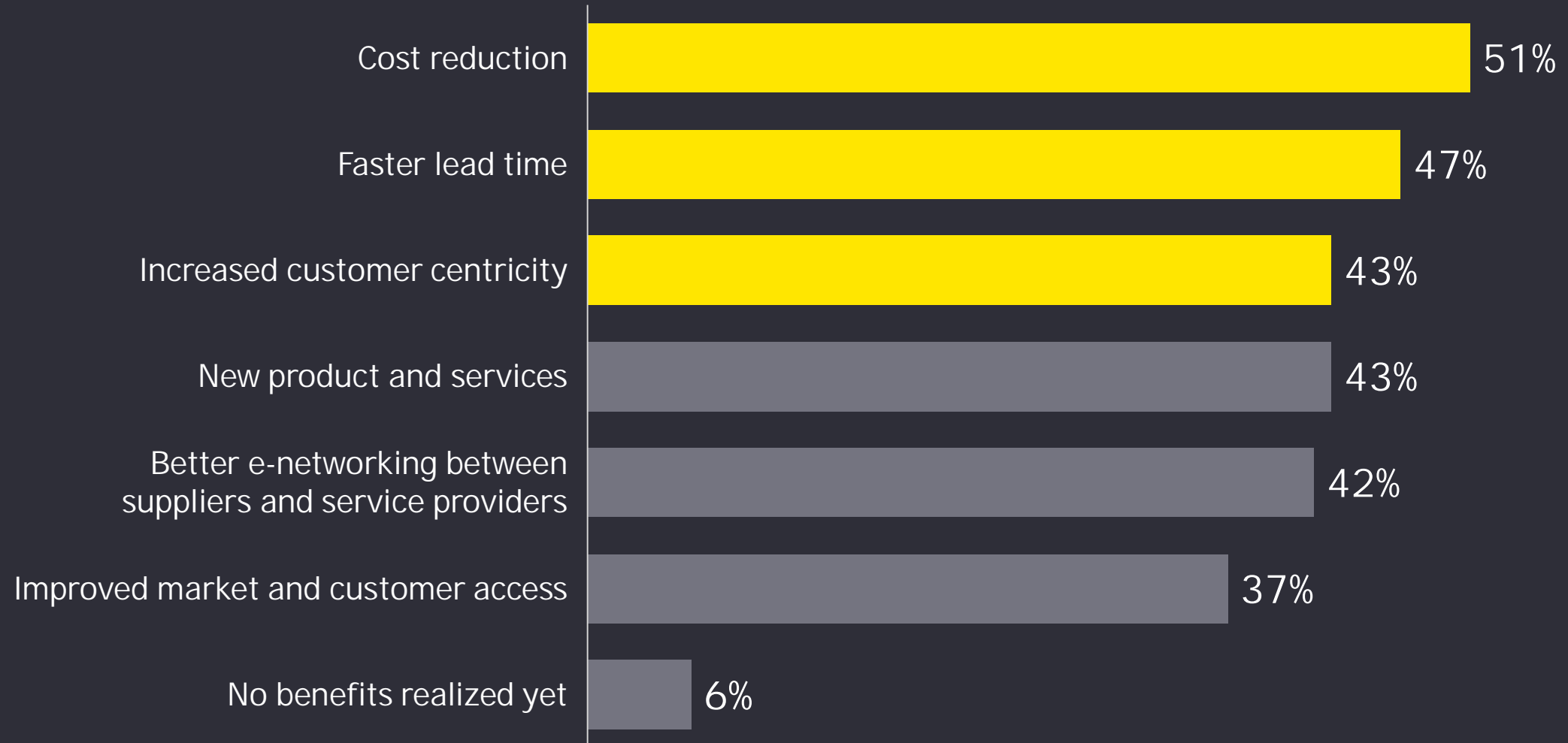
□ Impact over next three years

■ Current status of implementation



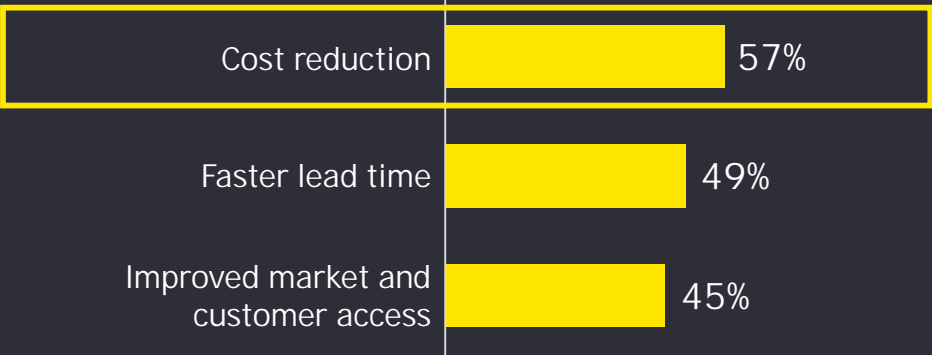
Most of the regions have achieved benefits in cost reduction and improved responsiveness, except Asia-Pacific which witnessed maximum benefits in market access and ecosystems.

Which benefits of digitalization have already been realized in your company?

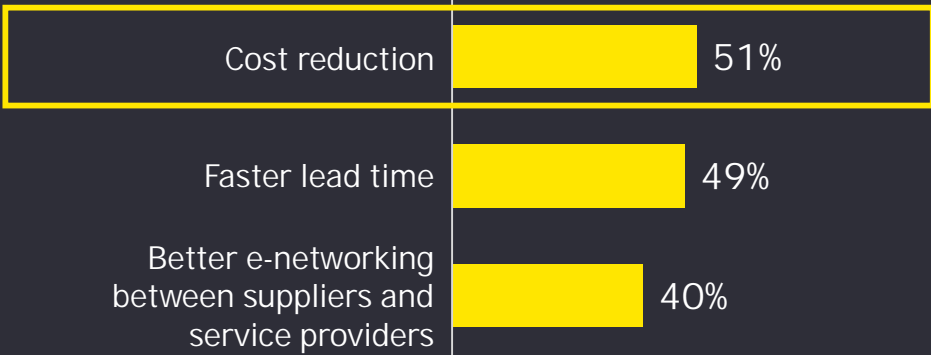


Which benefits of digitalization have already been realized in your company? (by region)

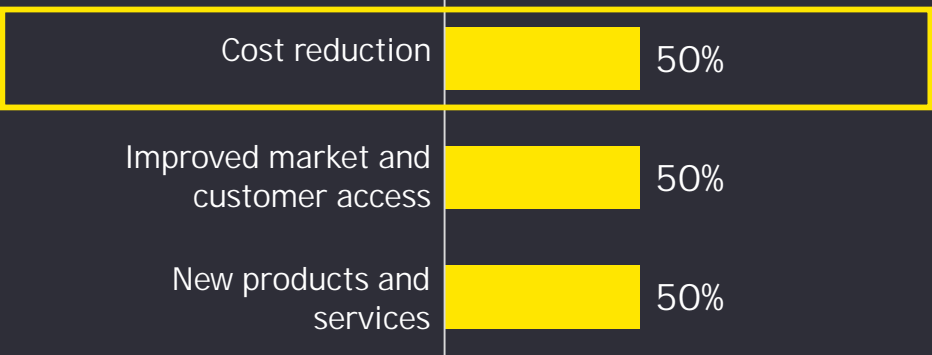
Europe



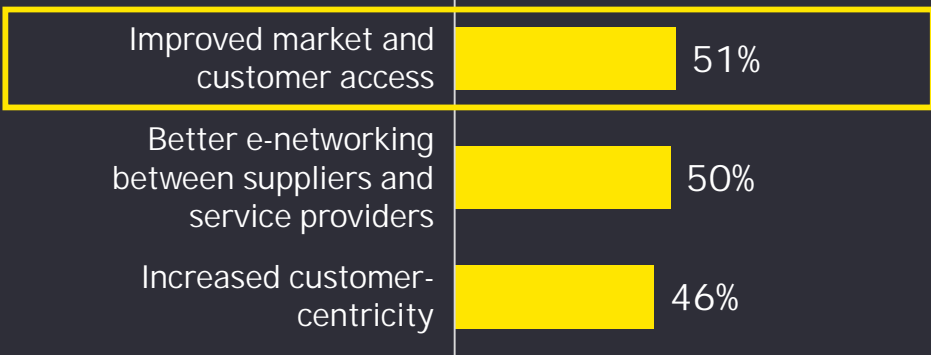
North America



Middle East and Africa



Asia-Pacific

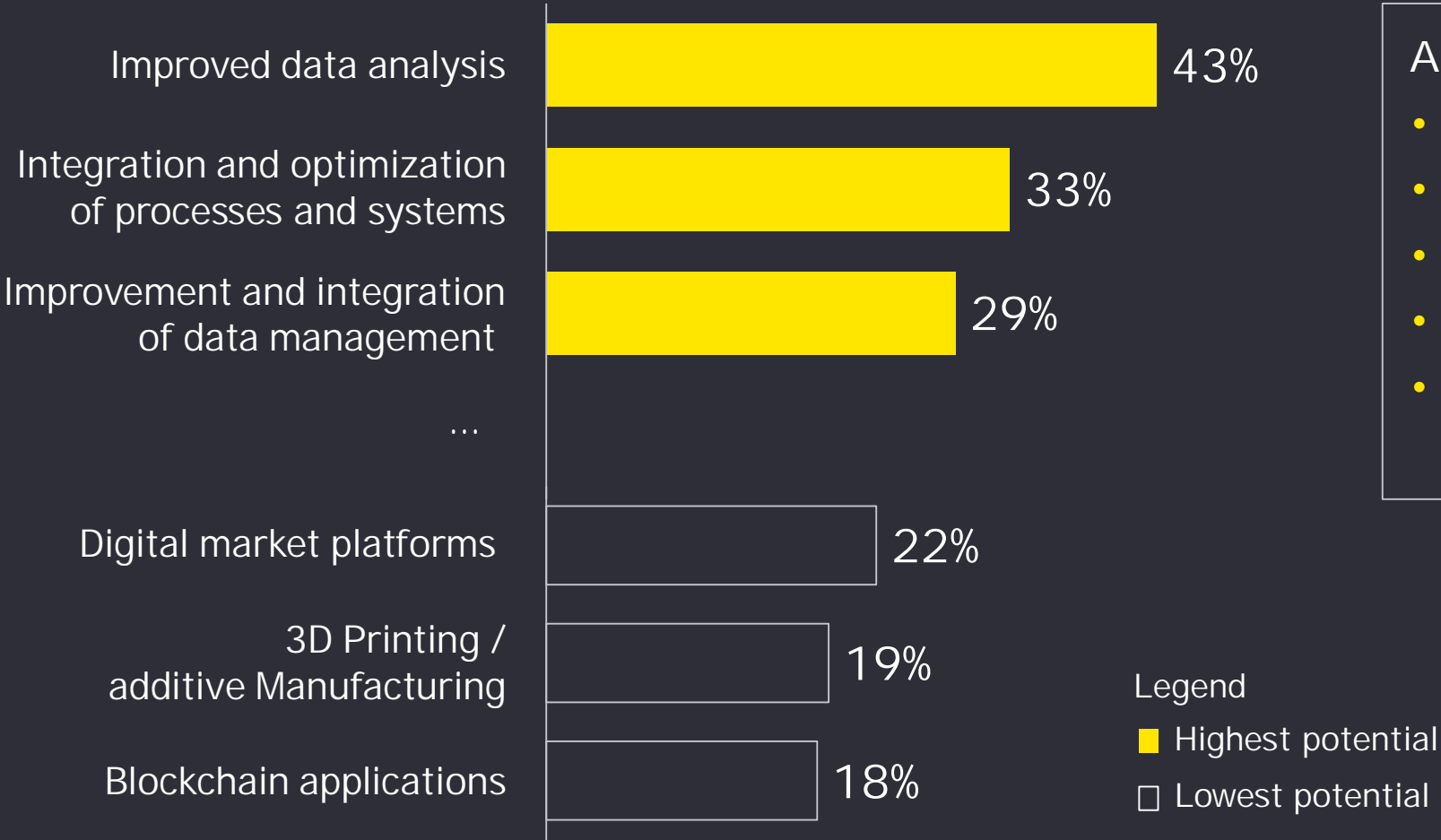


Legend ■ Top 3



In Europe and North America, stability and security of digital solutions are perceived more important for successful digital transformation.

Irrespective of whether the topic is already being implemented in your company, select the three digitalization topics with the highest potential



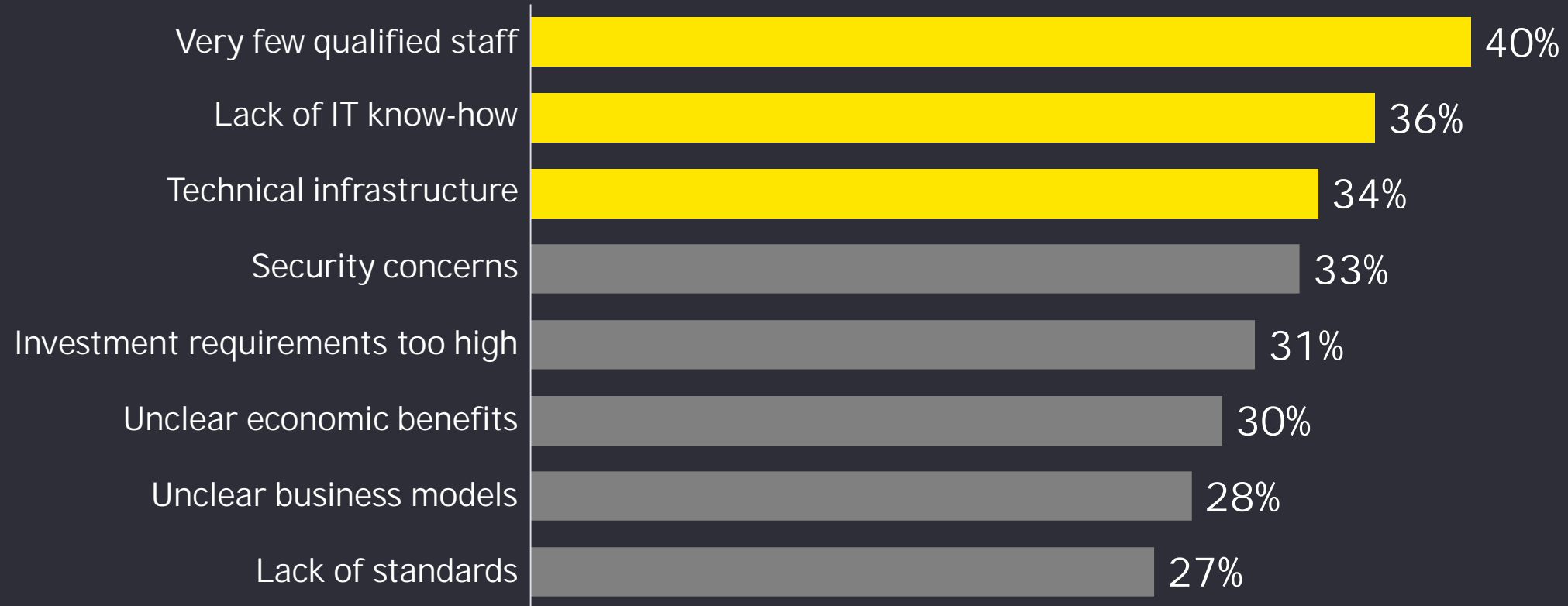
- Additional digitization topics :
- Digital ecosystems
 - Smart products and services
 - Smart factory
 - Digital security
 - Automation



Qualified personnel and security concerns are top barriers in Europe and North America while Asia-Pacific and Middle East and Africa suffer from lack of technical infrastructure.



What are the three biggest barriers to digitalization?



What are the three biggest barriers to digitalization? *(by region)*

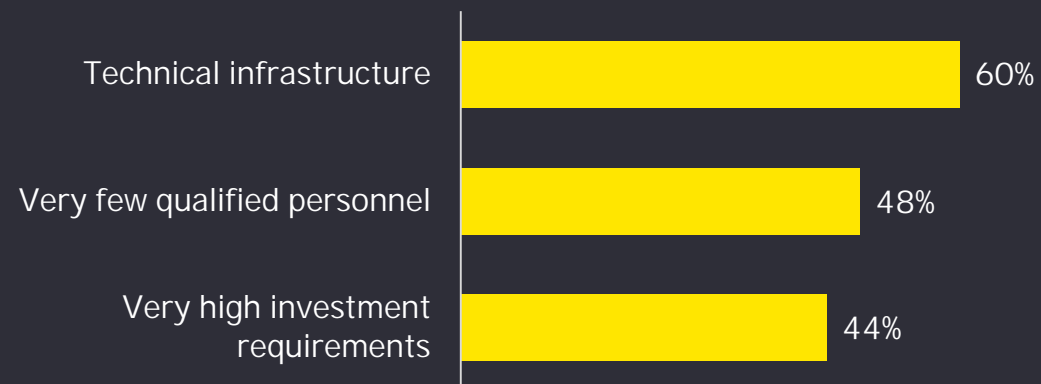
Europe



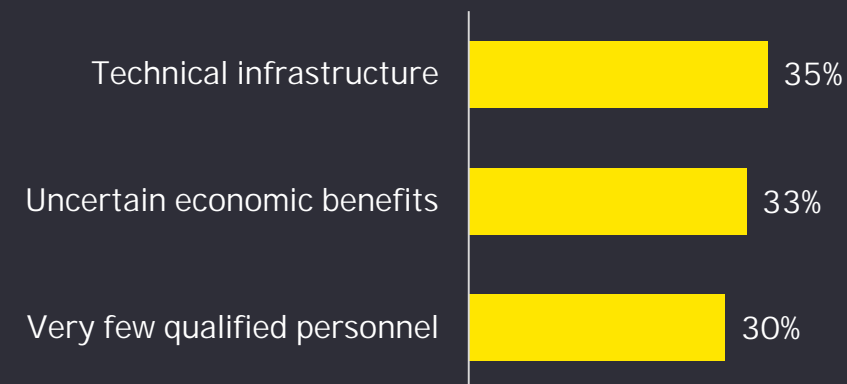
North America



Middle East and Africa



Asia-Pacific



Top 2



Asia-Pacific companies see equally great opportunities in strategic **and** operational issues, while participants from Europe and North America have an operational focus.



In a global comparison, companies from Asia-Pacific see greater progress in implementation.

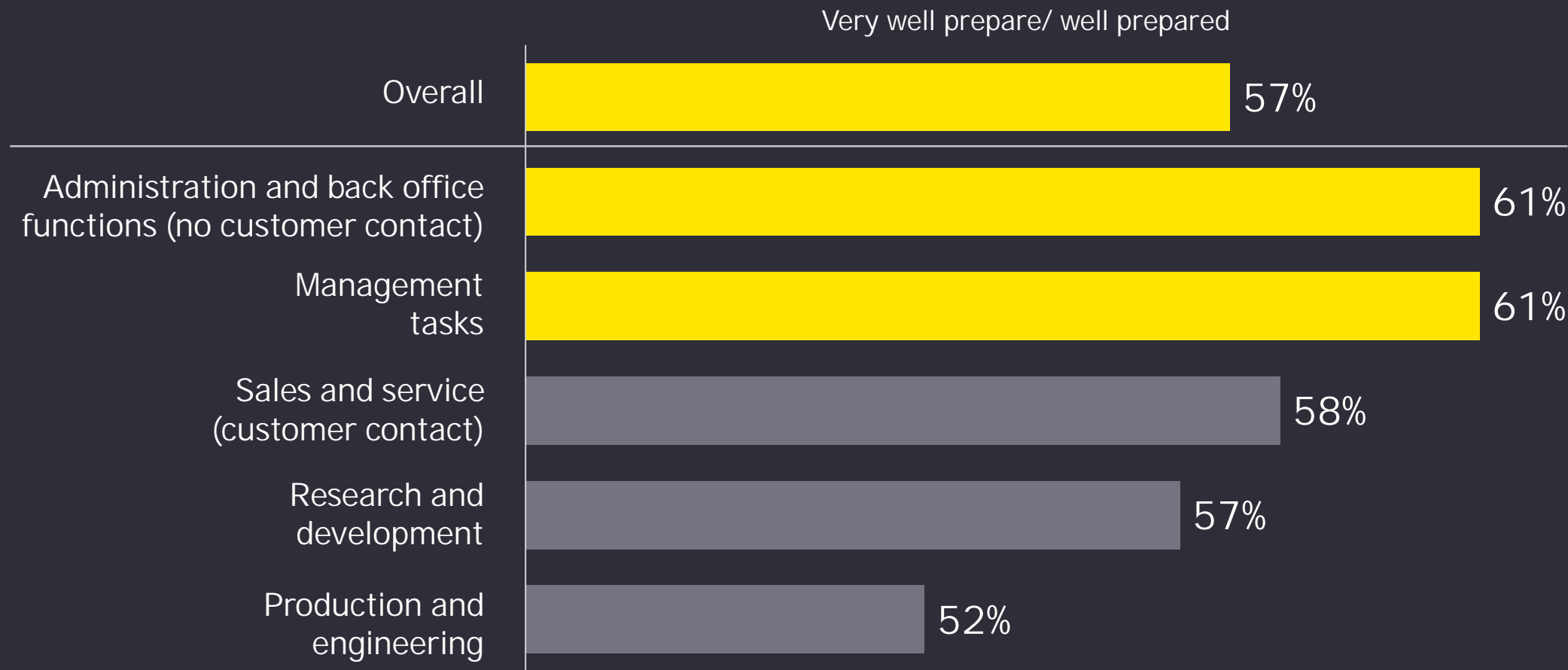
Influence of COVID-19



Overall, the majority of participants felt that their company was well or very well prepared for the COVID-19 pandemic.

How well prepared was your company at the beginning of the COVID-19 crisis? In regards of remote work, remote customer service, security at work?

Focus Europe / North America

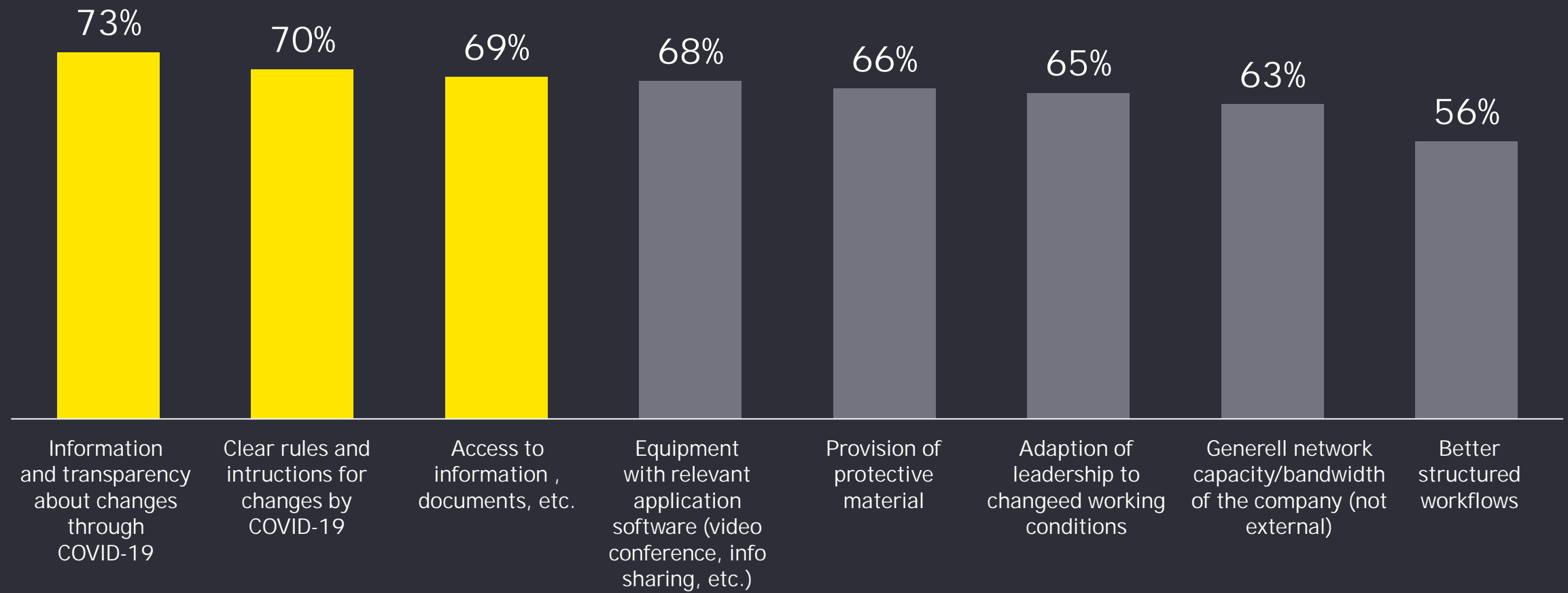




Regarding concrete measures in response to COVID-19, information and transparency, as well as clear rules and instructions, are most important.

Which concrete measures in response to COVID-19 do you consider important in light of your previous experience in your company?

Focus Europe / North America



Thank you for your attention!

Your contacts

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