

The future of jobs

The study on the
consequences of
automation and
increased use of robots

Buddying up with robots in the cyber workplace of the future:

How we're learning to trust AI-driven robots bringing efficiency and tackling daily challenges at work

If you walk through any modern factory, production facility, or logistics center, workers buddying up with robots and cobots are commonplace. This closely integrated approach seeing people and robots working together is a trend designed to help workers with tasks requiring high levels of dexterity when overcoming repetitive tasks or pinpoint accuracy.

Embracing automation, data exchange, and manufacturing technologies, robots and collaborative robots, also known as co-bots, are part of [Industry 4.0](#), a term used to describe the cyber-physical fourth industrial revolution.

As the AI-driven robot revolution opens unlimited worlds of production by making tasks easier, and safer for aging workforces or people with mobility issues who may find their job difficult or impossible, there are employment concerns as devices replace people and cybersecurity connectivity issues regarding their safety and reliability.

Methodology

To better understand views of what the workplace of the future will look like Kaspersky conducted a survey of [4,582](#) people in IT, manufacturing, financial and other industries to gain their opinion of how robots directly affect them in the workplace, and understand any setbacks or security concerns when faced with robot adoption.

Interviews were conducted globally with representation across [15 countries](#) including Argentina, Brazil, Egypt, France, Germany, Italy, Japan, Saudi Arabia, Singapore, Spain, South Korea, South Africa, Turkey, United Arab Emirates and the U.S.A.



Key findings

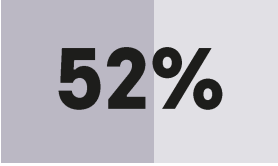
Industrial robots, artificial intelligence and autonomous mobile robots are the most widespread types of robots in organizations nowadays.



64%

A decade of robot change is ahead...

64% of employees believe their positions will be performed by robots within 10 years.



52%

... as companies see robotic production efficiencies increase

52% of respondents think robots can help to increase the efficiency of production processes and economic benefits in organizations.



88%

Robots do the jobs you hate but lack critical thinking...

88% of employees would trust robots to do unskilled chores or code software (75%) but are skeptical about robots' abilities to deal with critical tasks. Less than half of respondents think robots can perform surgery (38%) or fly an airplane (31%).



67%

They still need to be managed by people

67% of employees are not yet ready to trust the management of a production process to an AI robot, and would like to see human oversight.



85%

Robots and their networks may be vulnerable to cyberattacks

51% believe robots are vulnerable to cybercriminals.



44%

How protected are robots from cyberthreats?

44% consider there is a high level of cybersecurity protection in organizations, the other half (40%) consider companies take not enough cybersecurity measures to protect themselves.



13%

Repairs to robots after a cyberattack could take weeks

13% of respondents believe in case of a cyberattack a disabled robot can be fixed immediately. Most employees expect recovery operations would take weeks or longer.

The robot age is here

The majority of people responding to the survey say their organization uses industrial robots, artificial intelligence machine learning or autonomous mobile robots in some way and that robotization has increased over the last one or two years.

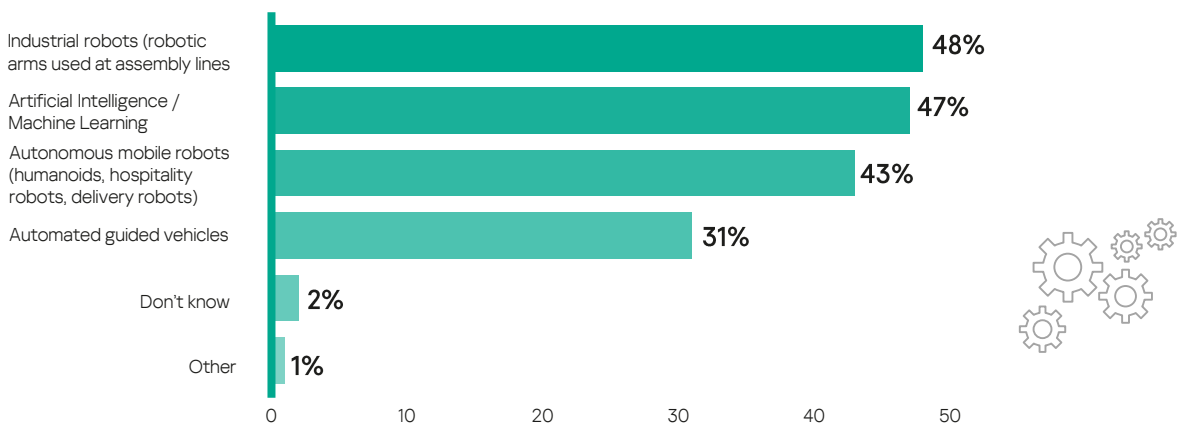
In current workplaces, **41%** of employees said their organizations use robots, with **29%** planning to use or introduce them to their facility in the future. Just over a quarter (**27%**) do not use them at all.

Just under half of factories or production facilities where respondents work (**48%**) features large, heavy industrial robots in fixed positions automating tasks and processes with employees revolving around them.

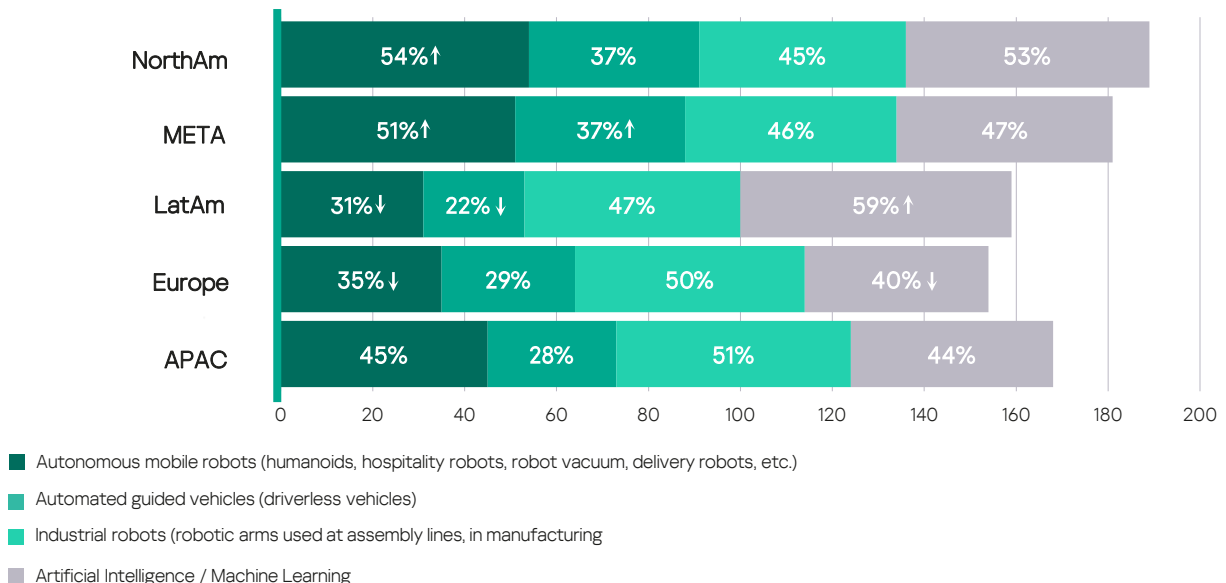
Unsupervised artificial intelligence robots with the ability of a computer that 'learn' tasks on their own usually performed by humans are also finding their way on to more production lines with **47%** saying they are present in their job.

Autonomous robots that gain information about their environments and work for extended periods of time without human intervention are widespread for **43%** of workers. The future for **31%** of workers will see their organization either using or planning to use automated guided vehicles.

What kind of robotics are used or plan to be used in your organization?



By regions

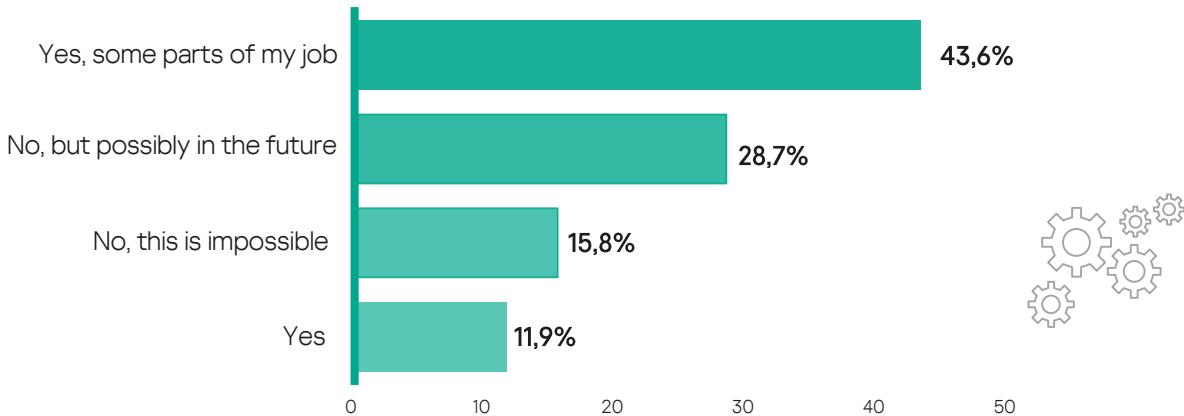


After trialling robotic systems, most companies roll them out across their business, and for employees who had robots functioning in their organization, the majority (77%) reported increased robotization levels in their companies over the past one or two years. Every fifth respondent (22%) said the number of robots remained the same, and only 1% said it decreased.

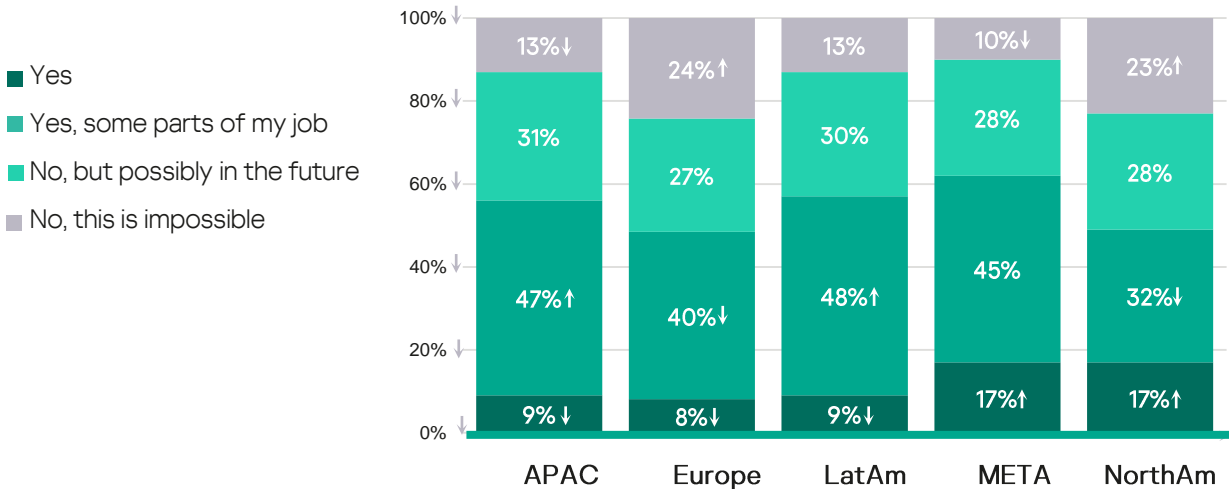
With the onset of Industry 4.0, and more robots appearing in the workplace, employees also have concerns about being replaced, losing their job, and finding new roles in markets where robots may be favored over humans. Most employees are of the opinion that their positions can be replaced by a robot or another automation solution within 10 years but believe the loss of ordinary jobs because of robots will be countered by creation of new forms of employment.

When it comes to their role within their organization, 12% believe their job can be fully performed by a robot, while 44% think robots can only do part of their job. More than a third of employees are skeptical of robots being able to completely replace them - 16% think this is impossible, and 29% believe that currently this is not the case, but may in future.

Do you think your job can be replaced by a robot or other automatization solution?



By regions

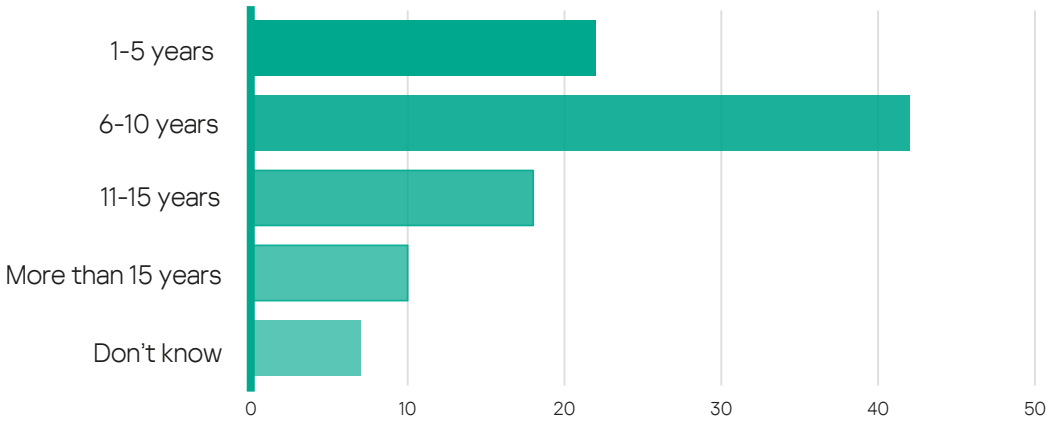




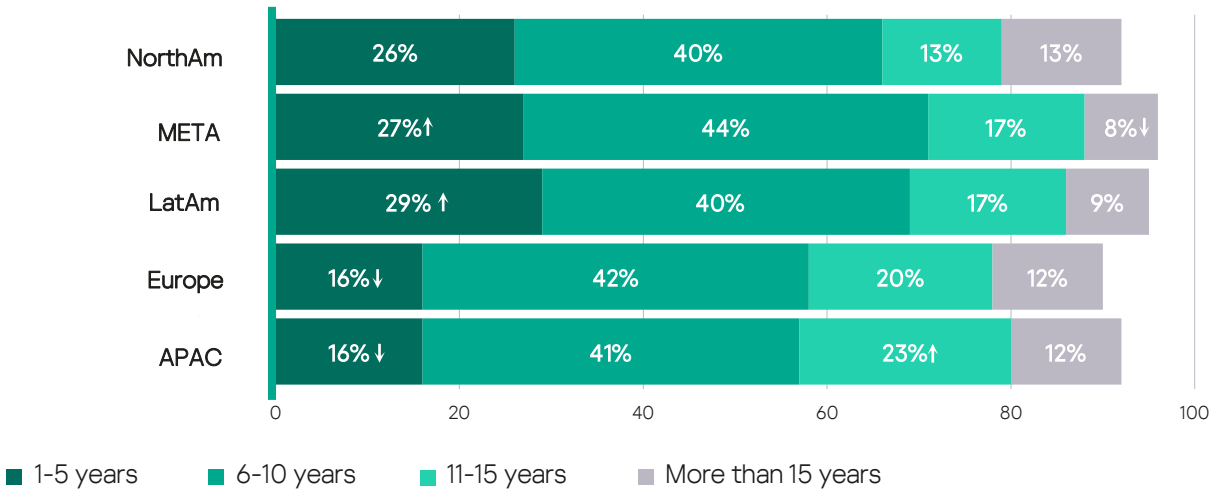
Among those employees who believe their job could be carried out by a robot, almost a half (42%) consider that it will happen within six to 10 years, just under a quarter (22%) are less optimistic and consider their positions will be replaced within five years.

Some have a long-term view of their workplace and employment trends, with 19% considering autonomous change will take be within 11-to-15 years and 10% that it takes more than 15 years.

When would it be possible for your job to be done by a robot or other automatization solution?



By regions



With robots leaving employees more time to focus on precision jobs, crafting or quality or managerial tasks, most of those questioned (58%) have an optimistic in view of robots taking away jobs, and believe there will be sufficient job creation to support the move to a robot-based work culture.

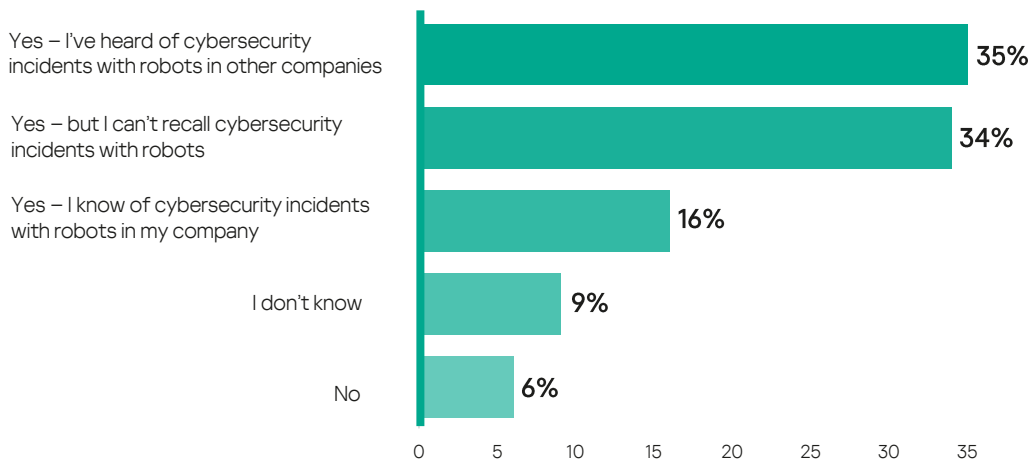


Robot-related cyber risks

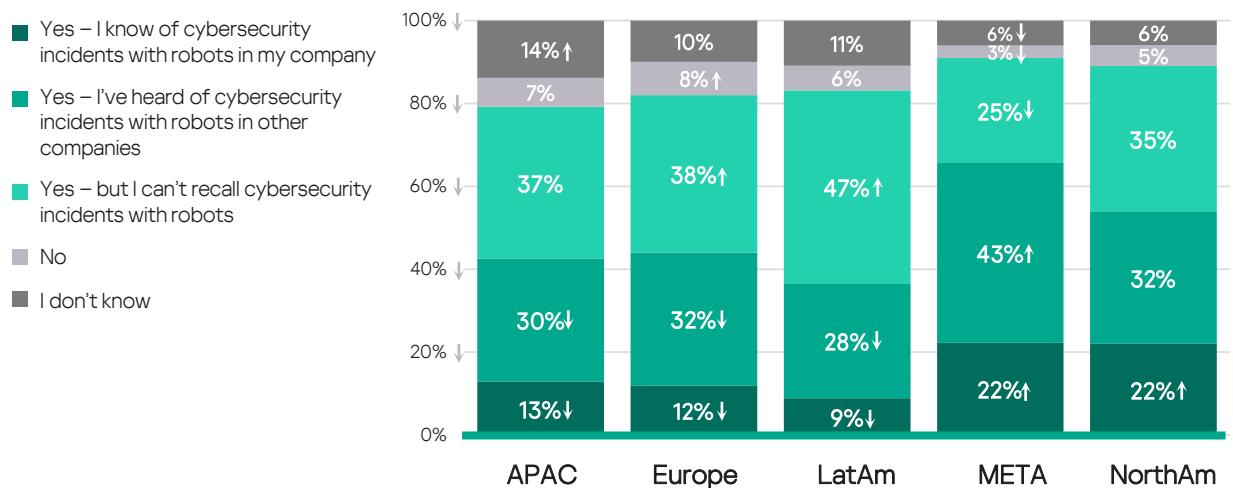
As much as our new hi-tech friends are great at assisting us with jobs we'd rather not do, ensuring they are cybersecurity is a big issue for employees asked to work within close proximity to a robot.

The majority of respondents feel cybersecurity risks are related to autonomous devices in the workplace, with **85%** believing robots face cyber attacks, and **51%** know of such incidents in their or other local companies. Specifically, **16%** know of cybersecurity incidents with robots in their companies, while **35%** have heard of such incidents in other companies. There were considerations also that robots are vulnerable to hackers, but do not remember cybersecurity incidents with them.

Do you think robots can be hacked?



By regions



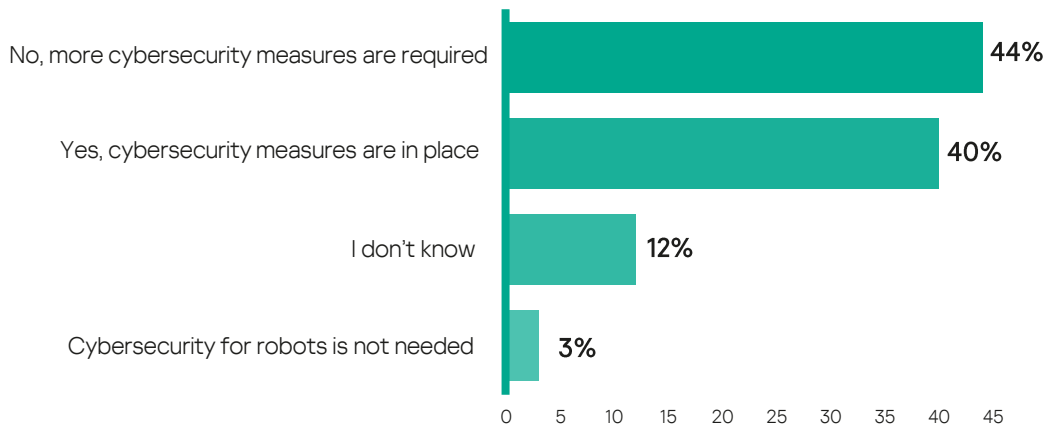


Additionally, many of those questioned believe their employer's overall cybersecurity needs upgrading ahead of any automated installation involving robots.

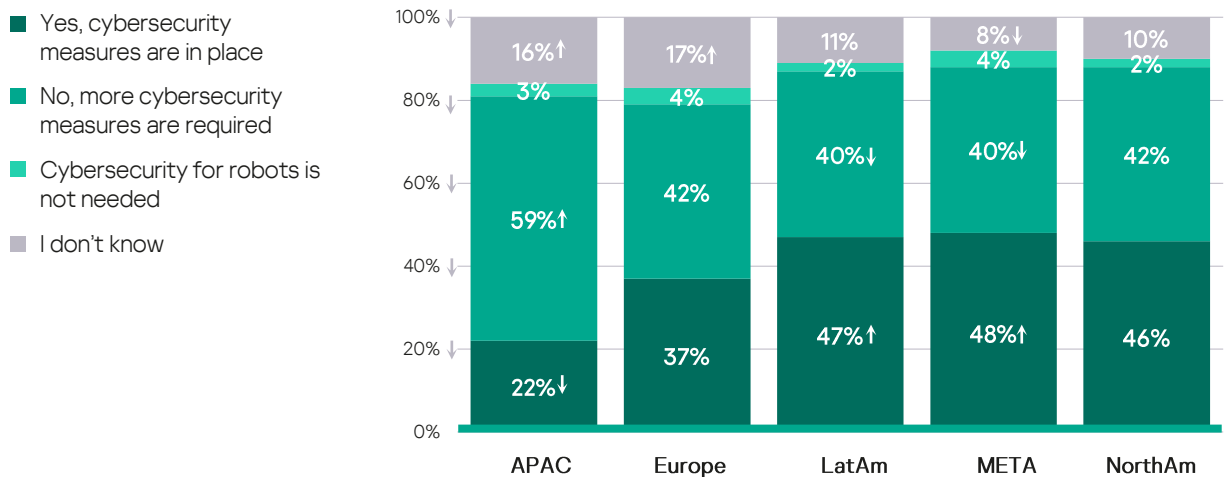
Almost half of employees (**44%**) takes the view that many companies do not have enough cybersecurity measures in place to protect themselves.

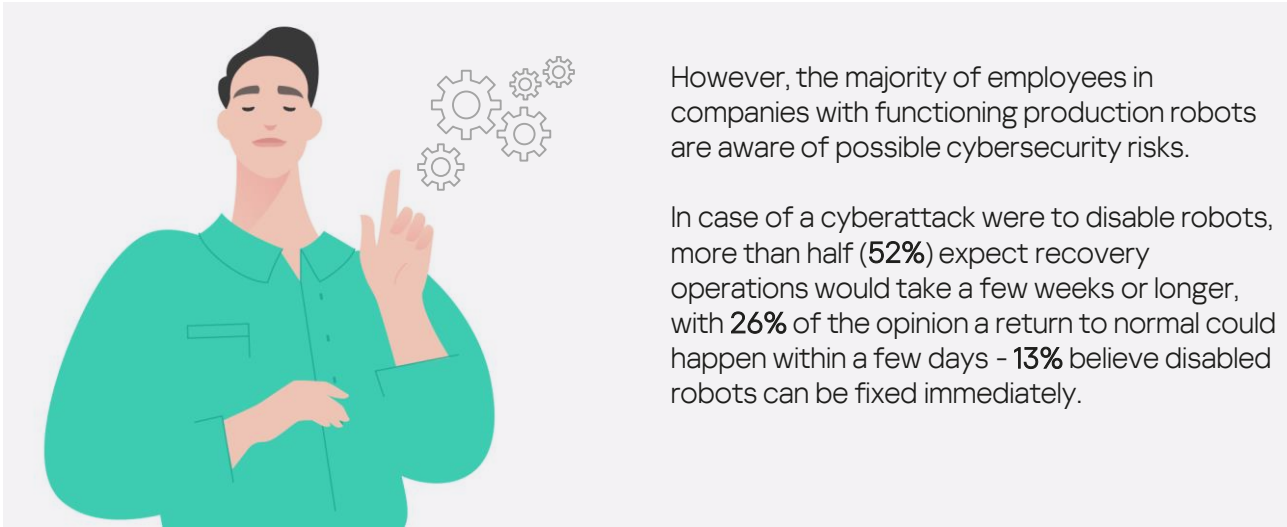
At the same time, **40%** believe enough protective measures are in place. Just **3%** believe that cybersecurity for robots is not required.

Do you think enough cybersecurity measures are taken to protect robots in different industries?



By regions

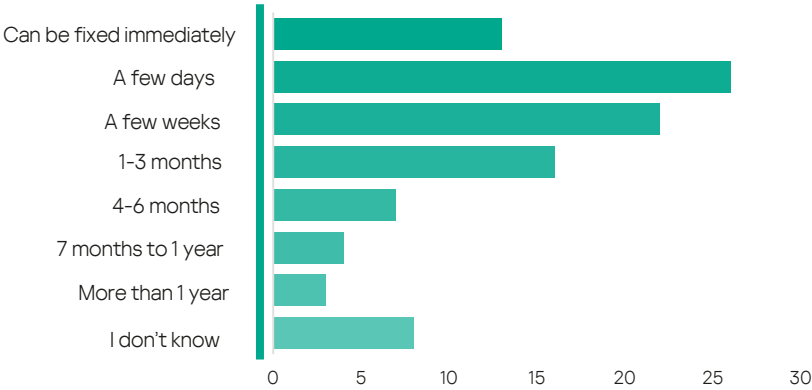




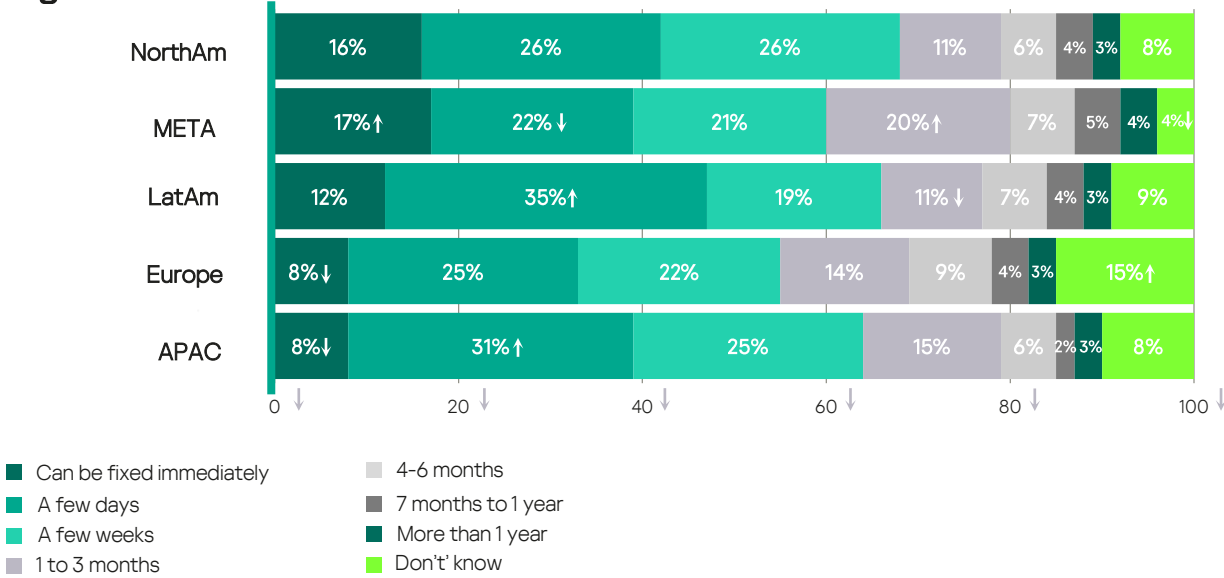
However, the majority of employees in companies with functioning production robots are aware of possible cybersecurity risks.

In case of a cyberattack were to disable robots, more than half (**52%**) expect recovery operations would take a few weeks or longer, with **26%** of the opinion a return to normal could happen within a few days - **13%** believe disabled robots can be fixed immediately.

How much time will your organization or an organization in your industry need to recover in case of a cyberattack that disables all robots?



By regions



- Can be fixed immediately
- 4-6 months
- A few days
- 7 months to 1 year
- A few weeks
- More than 1 year
- 1 to 3 months
- Don't know

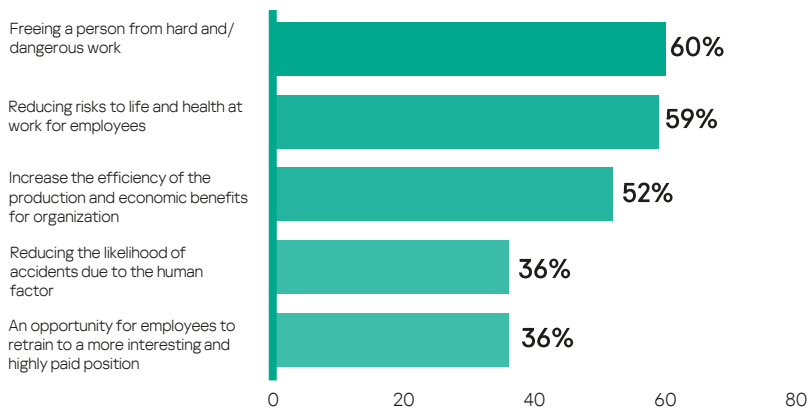
Man and machine are not always in perfect harmony

Workers regard robots as a hi-tech assistant that should be overseen managing tasks requiring high levels of dexterity across a range of industries, and while making production line efficiencies, they are still no match for the accuracy of the human eye, haptics, and sensors.

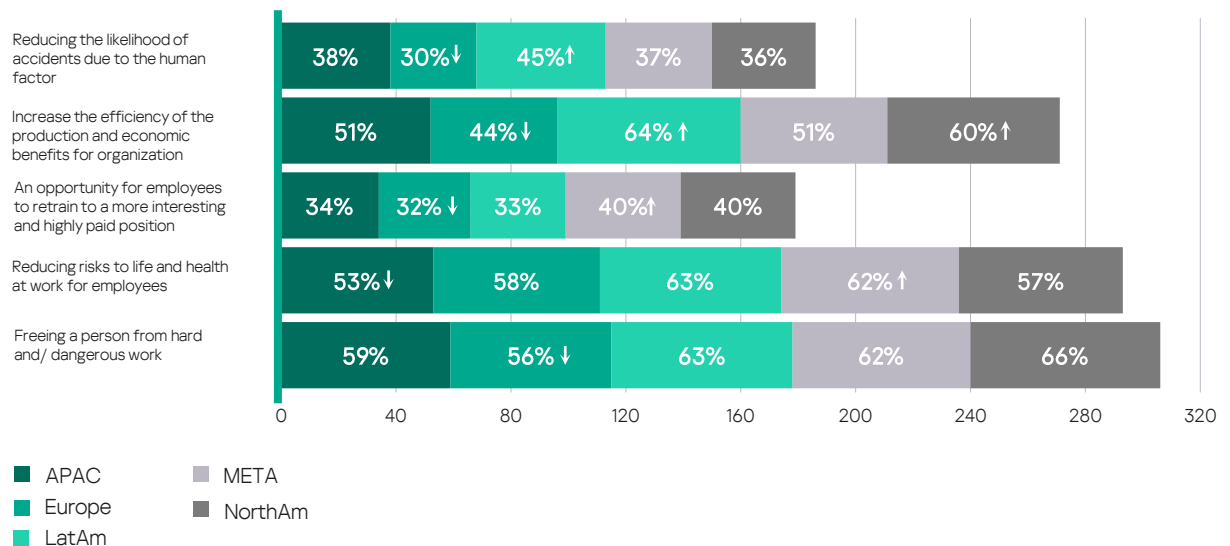
There is a general acceptance (79%) that robots are now part of everyday manufacturing and should be more widely used across different industries, and 81% of those surveyed think robots can revolutionize entire industries - 21% are against of this.

The majority of respondents (60%) believe robotization can improve worker safety by freeing people reduce risks to life and health in the workplace. Half (52%) think the efficiency of production processes and economic benefits increase due to robot use. Additionally, 36% see robots taking production on roles in as an opportunity for employees to retain more interesting or higher paid positions. More than a third (36%) of respondents believe robot use reduces the likelihood of accidents due to the human factor.

What are the positive aspects of robotization in terms of production process and business?



By regions



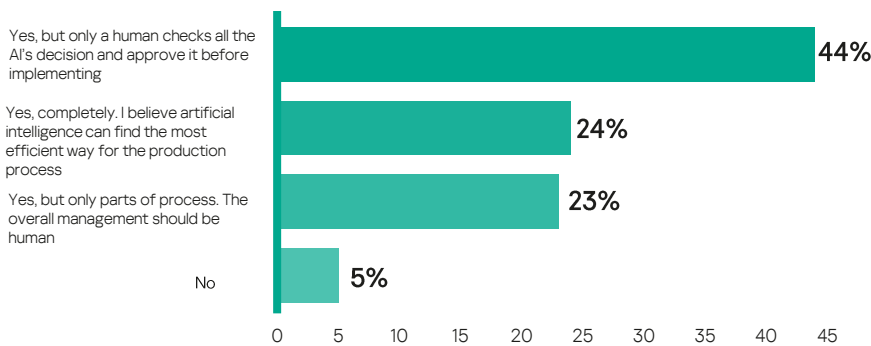
While we're happy to see robots join us on the shop floor, we're not quite ready yet to hand over complete control of the factory to a machine or fancy the idea of having a robot as a boss.

Just a quarter of employees (24%) are ready to trust the management of any production process to an AI robot, with the majority (67%) wanting to see human oversight of robot management processes.

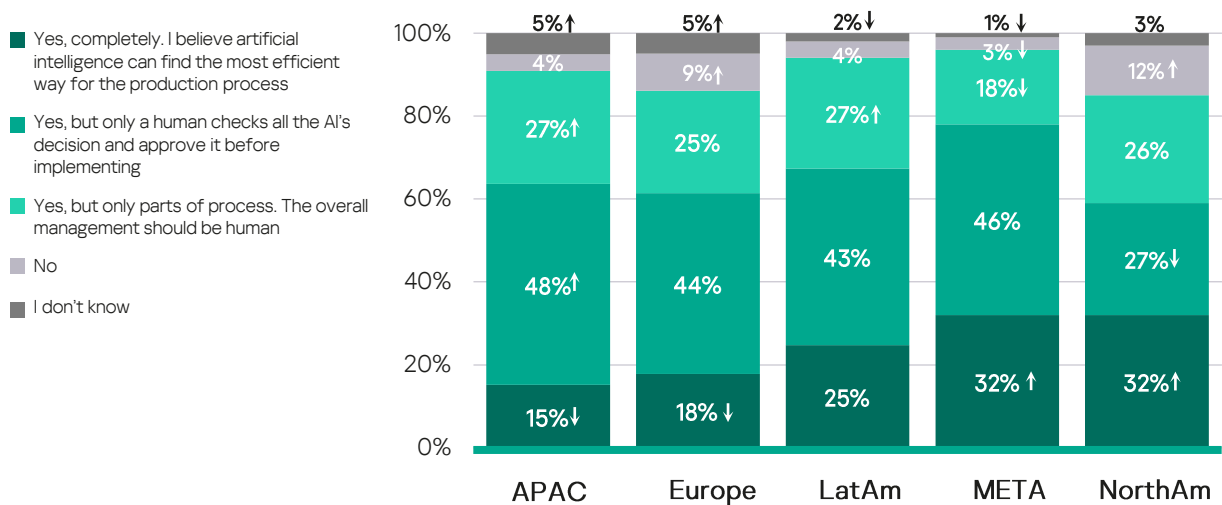
And with humans controlling automated autonomous devices, employees are not entirely clear who will be responsible in case of a failure brought on by a cyberattack. More than half (60%) of the surveyed shared such point of view.



Hypothetically, would you trust the management of a production process to an artificial intelligence robot/solution?



By regions



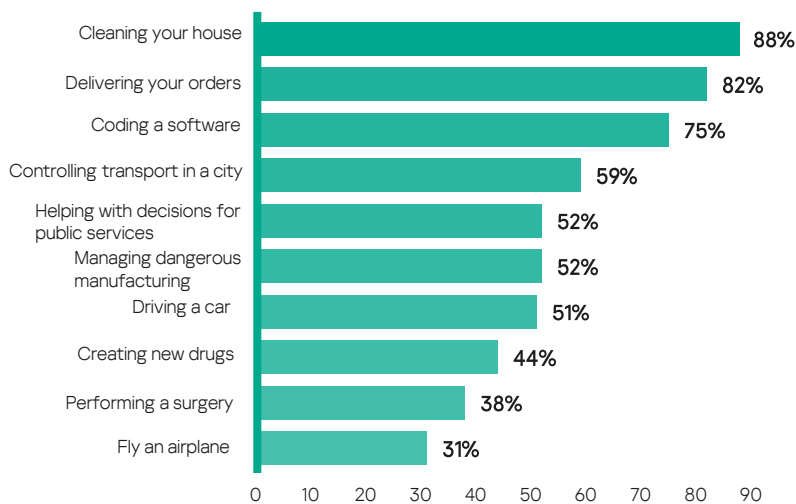
Many people are used to having robot vacuum cleaners and lawn mowers at home, doing chores while they're at work, but when it comes to duties with greater responsibilities or tasks that could seriously impact our safety, we're not as convinced they're up to the job.

Employees have slightly mixed feelings about trusting their hi-tech co-workers, with the majority trusting robots to do unskilled chores such as housecleaning (88%), or make deliveries (82%), and to code software (75%), but are skeptical about robots' ability to deal with critical tasks.

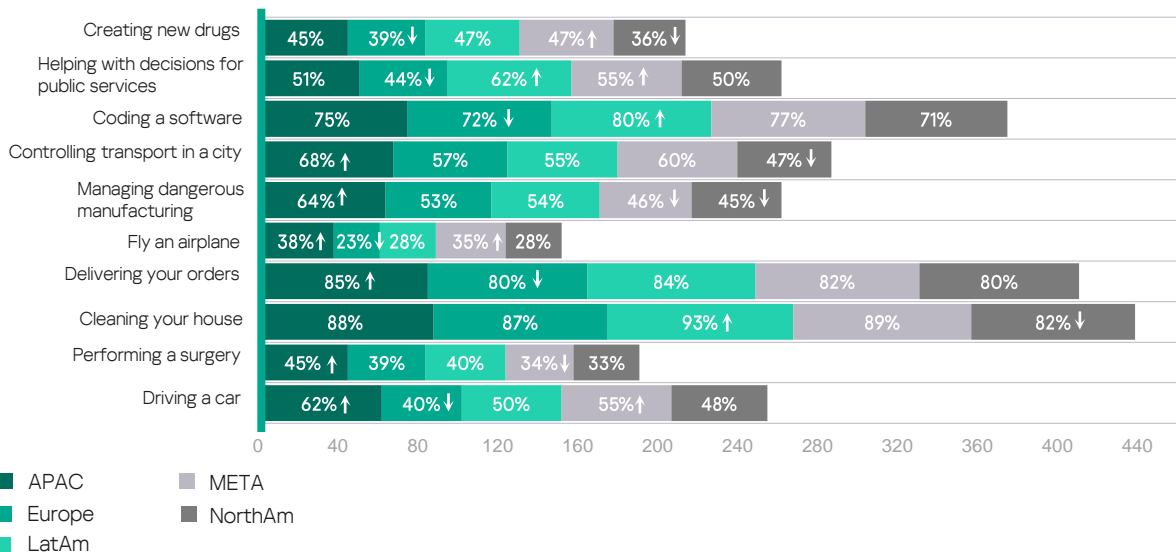


More than half of employees would be comfortable with robots controlling city transport (59%), driving vehicles (51%), helping with decisions for public services (52%), managing dangerous manufacturing (52%). At the same time, less than half of employees trust robots in performing such tasks as creating new drugs (44%), performing a surgery (38%), or flying an airplane (31%).

Do you trust robots in performing the below critical tasks?



By regions



■ APAC ■ META
■ Europe ■ NorthAm
■ LatAm

Conclusion

It is clear the age of the robot is here and very much to stay and – with aging workforces working longer – means production lines and logistics centers will see more robot collaborations embracing automation, data exchange, and manufacturing technologies.

As the robot revolution that has rapidly taken hold in the last five years opens further unlimited worlds of production by making jobs easier, they are still no match for human haptics, requiring careful management by humans in the workplace. And while there is a general acceptance robots are now part of everyday manufacturing, workers have slightly mixed feelings about the capabilities of hi-tech autonomous devices.

The majority of workers regard robots as assistants that can help to make the workplace safer, but at the same time they are concerned about problems robotization can cause. Lack of control by third parties, ambiguous regulations, distrust on the part of employees, cyber threats – all of this are risks for the industries. Employees believe it is possible for industrial machines to be hacked, or they are potentially vulnerable to hackers - and many consider their organization does not have sufficient cybersecurity measures in place to protect themselves.

