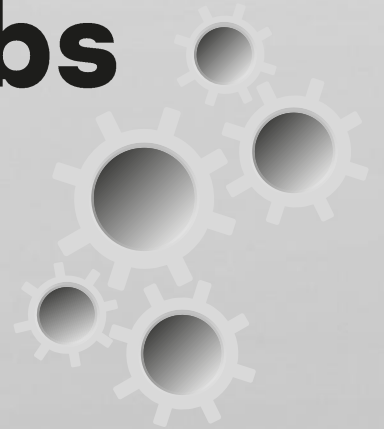


The future of jobs



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

More jobs than ever are being lost to robots because they can be more precise than humans. The boom in artificial intelligence and machine learning has also helped increase the complexity of tasks performed by machines.

The equation here is simple: as we make advancements in this technology, we expect to lose jobs to machines.

However, this increased connectivity brings along cybersecurity concerns regarding the safety and reliability of these robots.



comes to robot ad

comes to robot ad

3

Respondents. Who are they?

4

Age



18-24: 5%

25-34: 33%

35-44: 33%

45-54: 19%

55+: 11%

Employment status



- 90% of respondents in full-time work
- 8% of respondents in part-time work
- 2% business owner

Gender



Male: 62%

Female: 38%

Department in which they work



- Administration - 22%
- IT / Technical Operations - 20%
- Finance & Accounts - 14%
- Production - 14%
- Human Resources - 8%
- IT Security - 6%
- Research & Development - 5%
- Purchasing / Procurement - 4%
- Strategy /Corporate development - 4%
- Enterprise Risk / Compliance - 1%

Respondents. Who are they?

5

Organization classification



- IT / Telecommunications / Related IT sales & service - 18%
- Manufacturing (automotive, chemicals, consumer goods, high tech, industrial products, agriculture, etc.) - 15%
- Financial services (banks, insurance, trading) - 11%
- Construction, engineering or real estate - 9%
- Education - 7%
- Medical & Health services - 7%
- Government / Public sector - 7%
- Transportation and logistics - 5%
- E-commerce / Retail - 5%
- Hospitality / Food & beverage - 3%
- Entertainment (broadcast media, films, music, gaming) - 2%
- Utilities & Energy (electricity, water, etc.) - 2%
- Military - 1%
- Media / Advertising - 1%
- Non-profit / Charity - 1%
- Oil & Gas - 1%
- Pharmaceuticals - 1%
- Other - 5%

Key findings



#1

The majority of employees (64%) believe their positions can be performed by robots within 10 years.

#2

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

#3

Employees would trust robots to do unskilled chores (88%) and to code software (75%) but they are very skeptic about robots' opportunity to deal with critical tasks – less than half of respondents suppose that robots can perform a surgery (38%) or fly an airplane (31%).

Key findings



#4

The majority of the surveyed people (51%) believe that robots are vulnerable to hackers and know of such incidents in their or other local companies.

#5

Only 13% of respondents believe that in case of a cyberattack the disabled robots can be fixed immediately. The majority of employees expect recovery operations would take a few weeks or longer.

#6

Respondents split in their assessment of how protected robots are. The one half (44%) suppose that there is a high level of cybersecurity protection in organizations, the other half (40%) consider companies take not enough cybersecurity measures to protect themselves.

#7

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

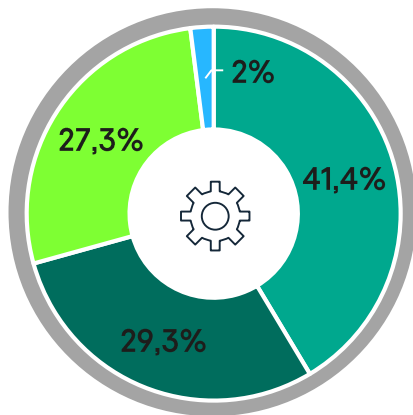
Current level of robotization in companies

8



41% employees said their organizations use robots, 29% is planning to use them in the future and 27% do not use them at all.

Are robotics used in your organization?

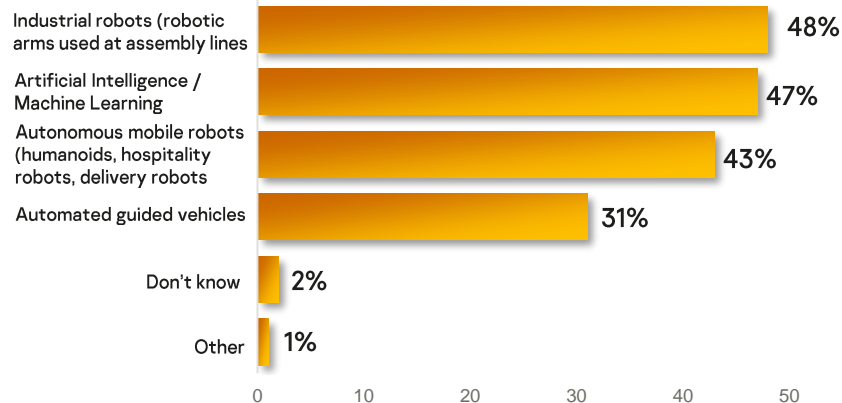


- Yes
- Not yet, but it is planned in 1-2 years
- No
- Don't know



Employees whose organizations use robots named industrial robots, artificial intelligence and autonomous mobile robots as the most widespread. Other reported their organizations using or planning to use automated guided vehicles.

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



Respondents reported robotization level in their organizations has increased over the last 1-2 years

9



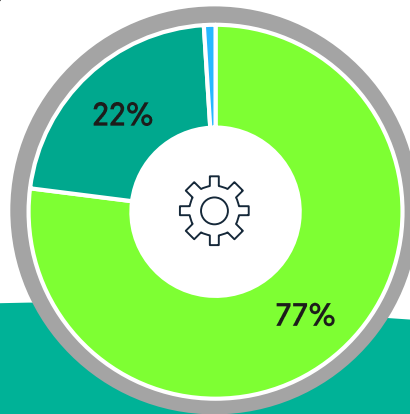
Among those employees who had robots functioning in their organization, the majority (77%) reported increased robotization levels in their companies over the past 1-2 years.



Every fifth respondent (22%) said that the robotization level in their company remained the same, and only 1% said it decreased.

Has the robotization level in your organization increased or decreased over the last 1-2 years?

- Increased
- Remind the same
- Decreased



The majority of employees suppose their positions can be replaced by a robot or automation solution

10



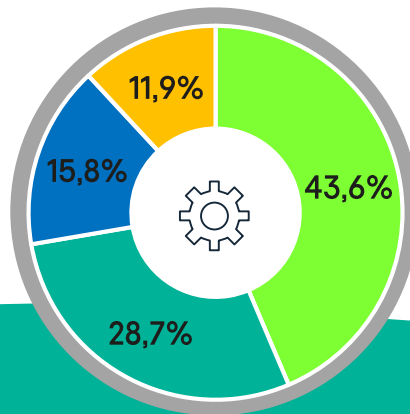
12% of respondents believe that their job can be fully performed by a robot, and 44% think robots can only do parts of their job.



More than a third of employees are skeptical of robots being able to replace them at their job: 16% think that this is absolutely impossible, and 29% believe that currently it is not possible, but it may be possible in the future.

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

- Yes
- Yes, some parts of my job
- No, but possibly in the future
- No, this is impossible



And they believe it will happen within 10 years

11

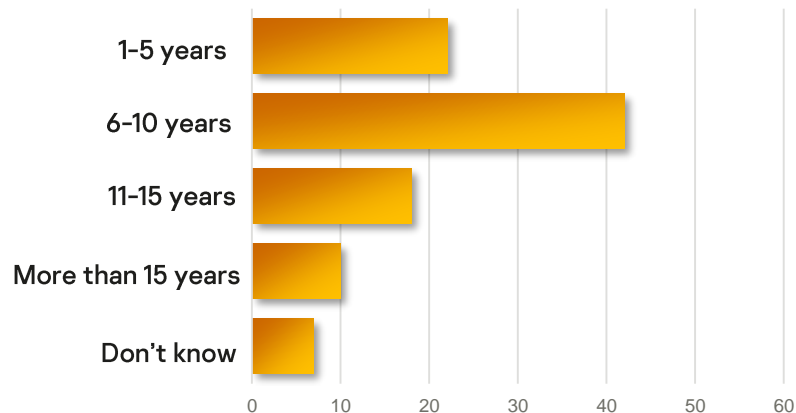


Among those employees who believe that their job could be done by a robot, almost a half (42%) consider that it will happen within 6 to 10 years, 22% are more optimistic and suppose that their positions will be replaced within 5 years



19% answered that it will happen 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?



Respondents suppose the loss of ordinary jobs because of robots will be countered by creation of new jobs

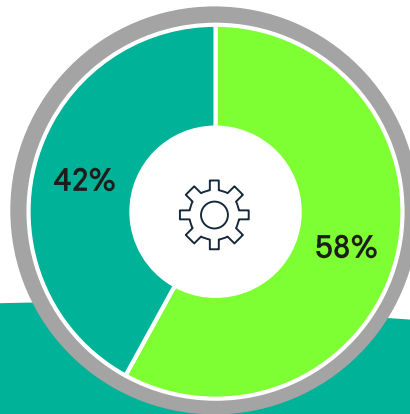
12



Employees remain optimistic in view of robots taking away jobs: the majority of employees (58%) believe enough new jobs will be created to counter the loss of ordinary jobs to robots.

Do you think enough new jobs will be created to counter the loss of ordinary jobs to robots?

- Yes
- No



At the same time employees feel cybersecurity risks related robots

13

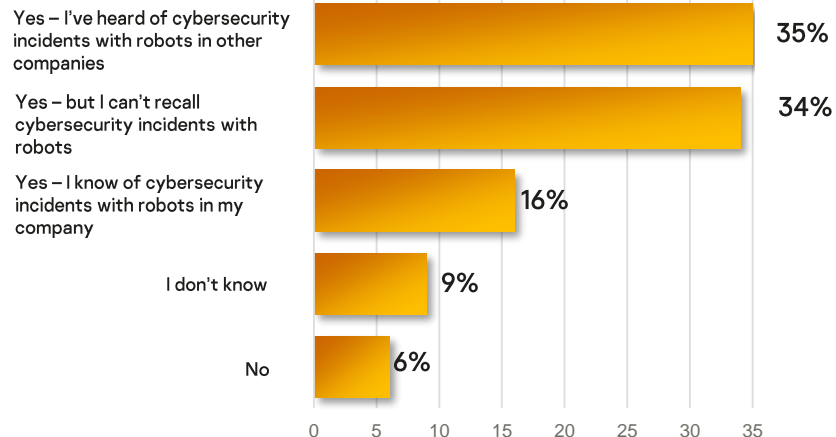


The majority (85%) believe robots can be hacked, and 51% know of such incidents in their or other local companies (specifically, 16% know of cybersecurity incidents with robots in their companies, 35% have heard of such incidents in other companies).



34% of respondents think that robots are vulnerable to hackers, but do not remember cybersecurity incidents with them.

Do you think robots can be hacked?



They split in their assessment of how protected robots are

14

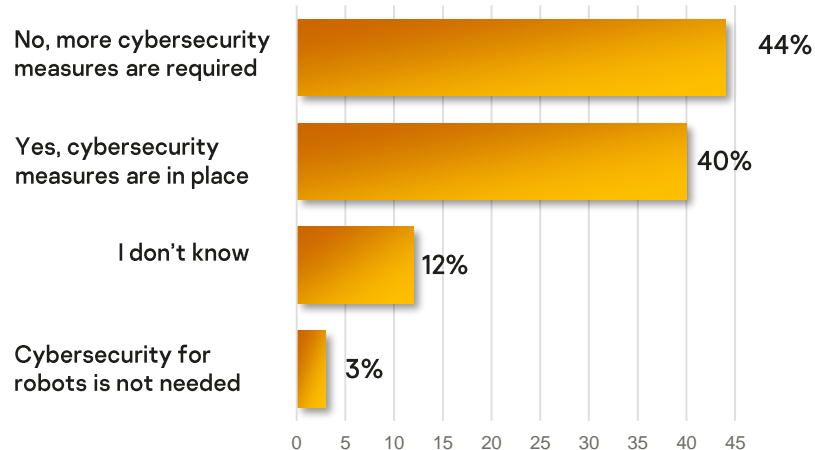


Almost half of employees (44%) believe that not enough cybersecurity measures are in place to protect the robots in different industries.



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

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



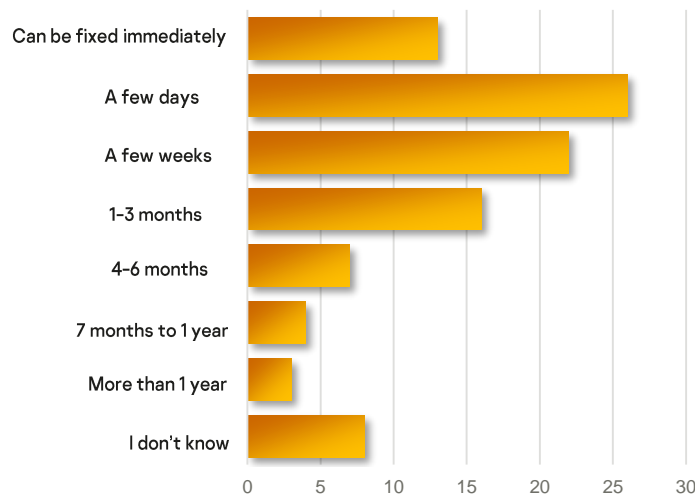
The majority consider that disabled by a cyberattack, robots can't be fixed immediately

15

In case of a cyberattack that disables robots, more than half of employees (52%) expect that recovery operations would take a few weeks or longer.

26% think that operations could return to normal within a few days, and 13% believe the 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?



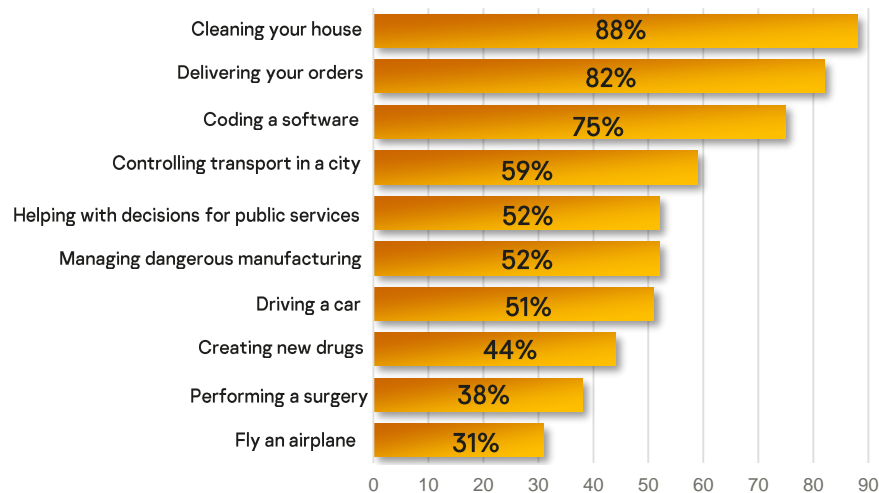
Employees would trust robots to do unskilled chores but they are very skeptic about robots' opportunity to deal with critical tasks

16



Employees split in their opinions on trusting robots to perform critical tasks. Generally, they would trust robots to do unskilled chores, such as housecleaning and order delivery. However they are very skeptic about robots' opportunity to deal with critical tasks such as creating new drugs, performing a surgery, or fly an airplane.

Do you trust robots in performing the below critical tasks?

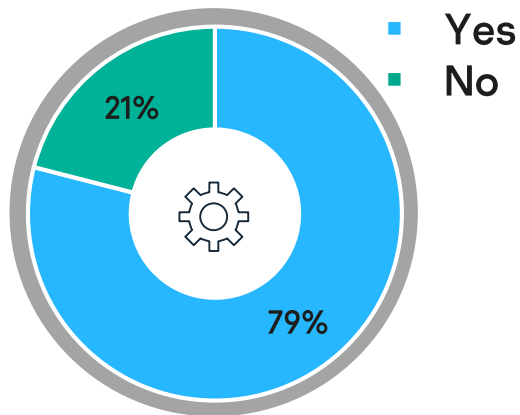


Respondents also consider robots should be more widely used across different industries

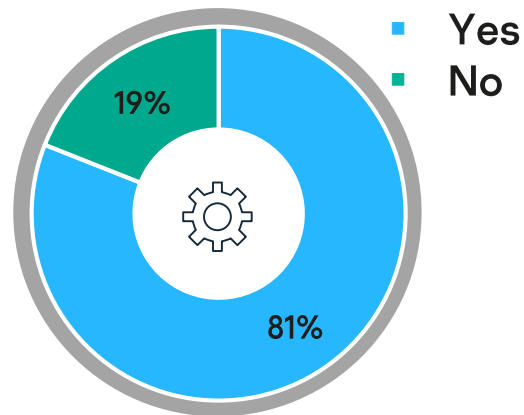
17



79% of respondents consider robots should be more widely used across different industries. Only 21% are against of this statement.



81% of the surveyed employees think that robots can revolutionize entire industries.



They regard robot usage as a mean for making humans' roles more safe and intellect-demanding, along with increasing the efficiency of production

18



The majority of respondents (60%) believe that robotization can free people from hard or dangerous duties and reduce risks to life and health.



Half (52%) think that the efficiency of production processes and economic benefits for the organization increases due to robot use.

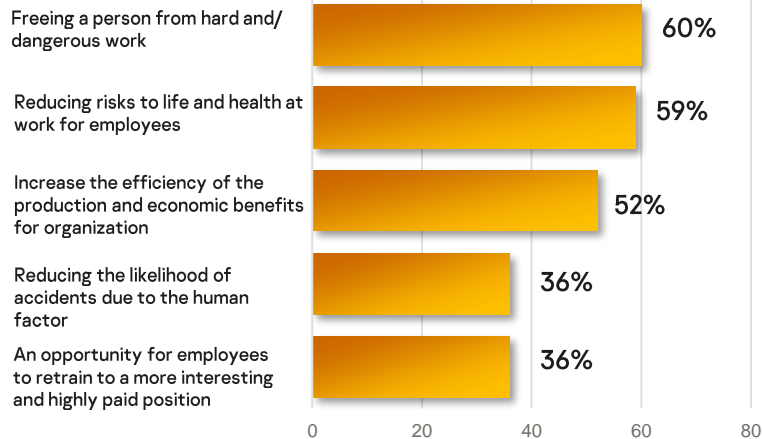


36% see robots doing jobs in production as an opportunity for employees to retain more interesting or highly paid positions.



More than a third (36%) of respondents believe that 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?



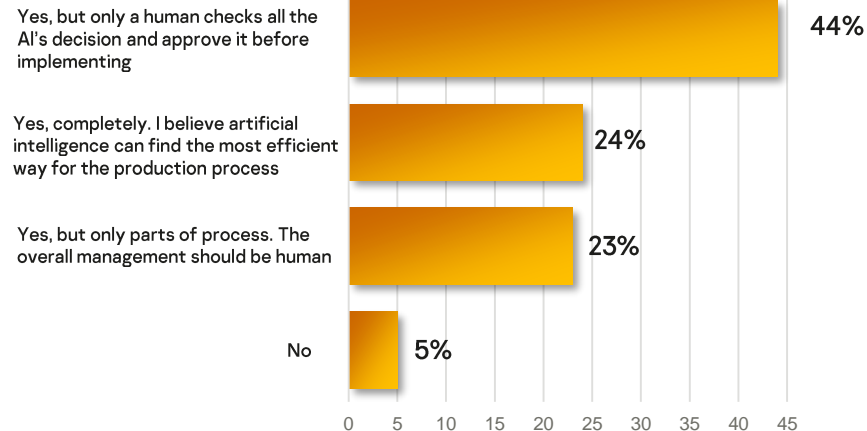
However they believe the overall management should always remain by human

19

Just a quarter of employees (24%) are ready to trust the management of a production process to an AI robot.

The majority (67%) would like to see human oversight of management processes in that way or another.

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



Respondents suppose it is unclear who will bear responsibility if robots fail

20

At the same time employees consider risks that rapid robotization may cause.

More than half (60%) say that it's unclear who bears responsibility if robots fail in that way or another (for instance, in case of an equipment malfunction or a cyberattack).



Thank you!

kaspersky