DREES & SOMMER

STEM MARK

DIGITALIZATION TRENDS IN REAL ESTATE AND CONSTRUCTION

IN POLAND, HUNGARY, AND THE CZECH REPUBLIC

MARKET RESEARCH 2024

CONTENT

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DIGITAL TRANSFORMATION IN THE REAL ESTATE AND CONSTRUCTION INDUSTRY: A CENTRAL EUROPEAN PERSPECTIVE

The real estate and construction industry is undergoing a profound structural transformation, significantly driven by digitalization. This shift is not just a temporary trend but a necessity to address both current and future challenges. Digitalization acts as a catalyst for change and a strategic approach to meet the complex demands of the industry. This study focuses on the broader Central European region, including Poland, Hungary, and the Czech Republic, to explore how digital transformation is being adopted and perceived by industry workers.

The data in this report is based on exclusive market research conducted by the research agency STEM/MARK on behalf of Drees & Sommer. The research, carried out in August and September 2024, surveyed a representative sample of 939 workers in the real estate and construction sectors across Poland, Hungary, and the Czech Republic. The findings highlight significant digitalization trends, with a particular focus on artificial intelligence (AI) adoption and perception.

Despite the increasing interest in AI, approximately 70% of construction and real estate workers in these countries have not yet integrated AI into their work routines. However, there is a strong desire to learn and use AI more frequently, with 60% of respondents expressing interest in developing their digital skills. Many workers lack a clear overview of available AI tools and digital skills, which hampers broader adoption. Additionally, specific activities promoting AI innovations within companies are rather limited.

Currently, AI is primarily used for data collection, document management, reporting, and planning. Looking ahead, workers wish to expand AI usage to areas such as process automation, energy efficiency, site analysis, reducing operating costs, developing new products and services, valuation and finance, intelligent space design, and building administration. The perception of digitalization varies across the region, but overall, it is viewed positively. Workers are convinced of the potential benefits, in particular increased efficiency and reduced operating costs.

To enhance their digital maturity and secure a competitive edge for the future, companies in this region and worldwide must blend strong leadership with operational excellence. This involves bridging generational gaps, encouraging and rewarding adaptability among employees, and embracing a comprehensive strategy for optimizing processes, managing data, and applying technology effectively.

02

MARKET RESEARCH PARAMETERS

MARKET RESEARCH PARAMETERS

The market research, commissioned by Drees & Sommer, was carried out by the renowned research agency STEM/MARK during August and September 2024. The study encompassed three markets: the Czech Republic, Poland, and Hungary. A representative sample of 313 respondents from each market (939 in total) was surveyed. These respondents, actively working in the real estate and construction sectors, held various positions and job statuses, accurately reflecting the labor market distribution. A total of 11 multiple-choice questions were posed to respondents through online panels.
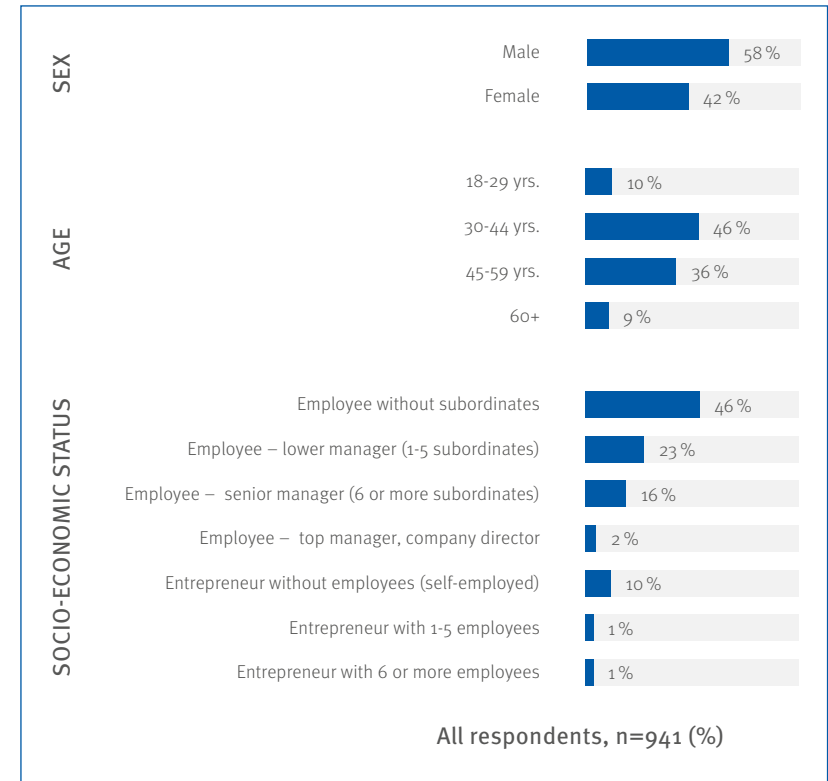
RESEARCH GOALS

- Use of AI (artificial intelligence) by construction and real estate workers
- Reasons for (not) using AI at work
- Overall attitude towards digitalization

TARGET GROUP

- Construction and real estate workers from the Czech Republic, Poland and Hungary
- Data collection was based on socio-economic status and profession

DETAILS OF RESEARCH DESIGN

- Method: CAWI
- Number of conducted interviews: 941
- Date of data collection:
  August 28 – September 03, 2024
- Without quota – data collection was based on atributes (socio-economic status and profession)

SEX
- Male — 58 %
- Female — 42 %

AGE
- 18-29 yrs. — 10 %
- 30-44 yrs. — 46 %
- 45-59 yrs. — 36 %
- 60+ — 9 %

SOCIO-ECONOMIC STATUS
- Employee without subordinates — 46 %
- Employee – lower manager (1-5 subordinates) — 23 %
- Employee – senior manager (6 or more subordinates) — 16 %
- Employee – top manager, company director — 2 %
- Entrepreneur without employees (self-employed) — 10 %
- Entrepreneur with 1-5 employees — 1 %
- Entrepreneur with 6 or more employees — 1 %

All respondents, n=941 (%)

03
MAIN FINDINGS

3

MAIN FINDINGS

- **The majority** of construction and real estate workers **do not use AI at work** (70% in total), with the least usage in Hungary.

- **AI is typically used at work approximately every week across all countries.** Notably, 2 out of 5 of Polish workers who use AI work with it daily, which is a significant difference compared to the other countries.

- **3 out of 5 of all respondents wish to learn how to use AI in their workplace or use AI more frequently.**

- Construction and real estate **workers lack an overview of available AI tools for their work.**

- **Data collection, document management, reporting, and planning are the most common AI activities** in this industry. Using AI for data collection is particularly popular in Hungary, with more than half of the respondents who use AI engaging in this activity.

- **If respondents had the right support and wished to use AI for their work, they would typically use it for data collection, increasing efficiency, automating processes, and planning.** Czech workers who do not currently use AI would most often like to use it for planning, whereas respondents from Poland and Hungary more frequently mentioned data collection.

- **1 out of 4 of all respondents state that their company does not promote innovation in the field of AI,** and another **30% of workers are unaware of any specific activities** in their company.

- **More than 40% of workers use other technologies or digital tools (alongside AI)** for their work. Compared to the other countries, workers in Poland are more likely to use document management software; in Hungary, cloud computing is more common, and in the Czech Republic, the Internet of Things is more prevalent.

- **The majority** of respondents **perceive the level of digitalization in their industry positively,** with Czechs perceiving it negatively the most.

- **The biggest challenge of digitalization is the lack of digital skills among employees,** as noted by more than 2 out of 5 of respondents from all the countries.

- **The biggest opportunity of digitalization is seen in increased efficiency and reduced operating costs,** according to all respondents.
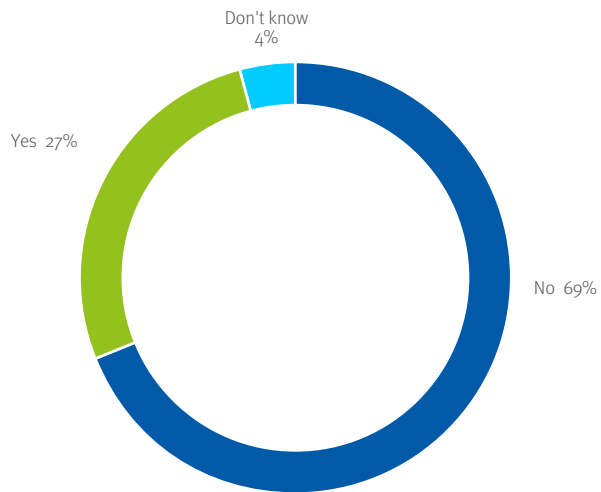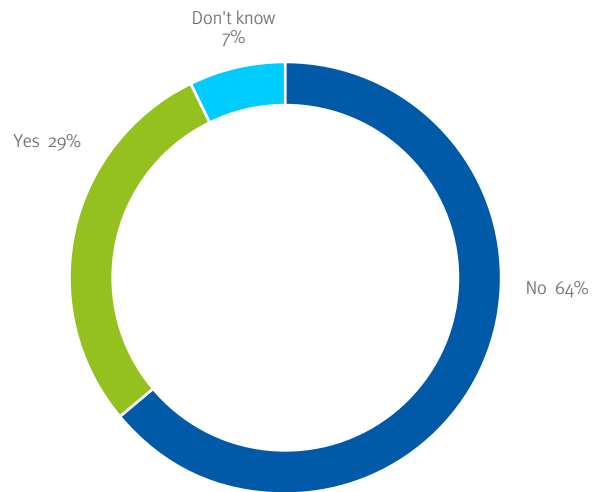
04

MARKET RESEARCH RESULTS IN DETAILS

4.1

FREQUENCY OF AI USE

QUESTION: DO YOU USE ARTIFICIAL INTELLIGENCE (AI) FOR YOUR WORK?

Total: Yes 26%   No 70%   Don't Know 5%

Don't know 4%
Yes 27%
No 69%

CZECH REPUBLIC

Don't know 7%
Yes 29%
No 64%

POLAND

Don't know 2%
Yes 22%
No 76%
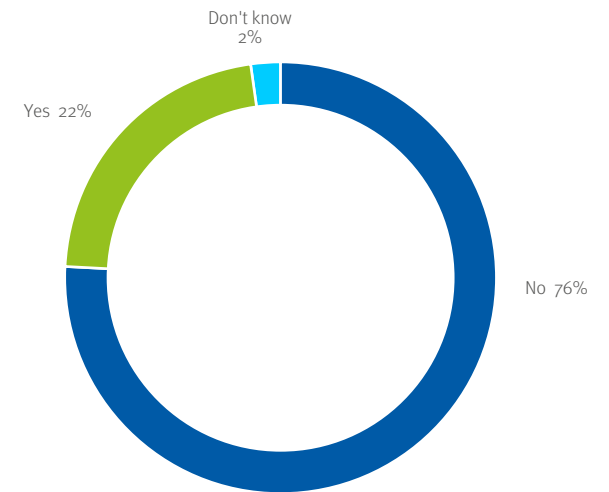
HUNGARY

The survey results indicate that AI usage at work is relatively low among construction and real estate workers in Poland, the Czech Republic, and Hungary. Overall, across all three countries, 26% of workers use AI, 70% do not, and 5% are unsure. Poland leads the way with nearly 30% of workers actively using AI, followed by the Czech Republic at 27%, while Hungary has the lowest percentage of active users at 22%.

4.1

FREQUENCY OF AI USE

QUESTION: HOW OFTEN DO YOU USE AI FOR YOUR WORK? ONLY RESPONDENTS WHO USE AI FOR THEIR WORK.

Total: Daily 26%   Weekly 46%   Monthly 17%

Across Poland, Czech Republic, and Hungary, AI usage for work varies. Overall, 26% of the users use AI daily, with Poland having the highest daily usage at 38%, while the Czech Republic has the lowest at 15%. Weekly usage stands at 46%, with the Czech Republic having the highest share. Monthly usage is at 17%, with Hungary leading in this category. Less frequent usage is at 7%, and random usage is at 5%.

■ Randomly
■ Less frequently
■ Monthly
■ Weekly
■ Daily

CZECH REPUBLIC
- 4%
- 7%
- 20%
- 54%
- 15%

POLAND
- 8%
- 9%
- 7%
- 38%
- 38%

HUNGARY
- 1%
- 4%
- 26%
- 46%
- 23%

4.1
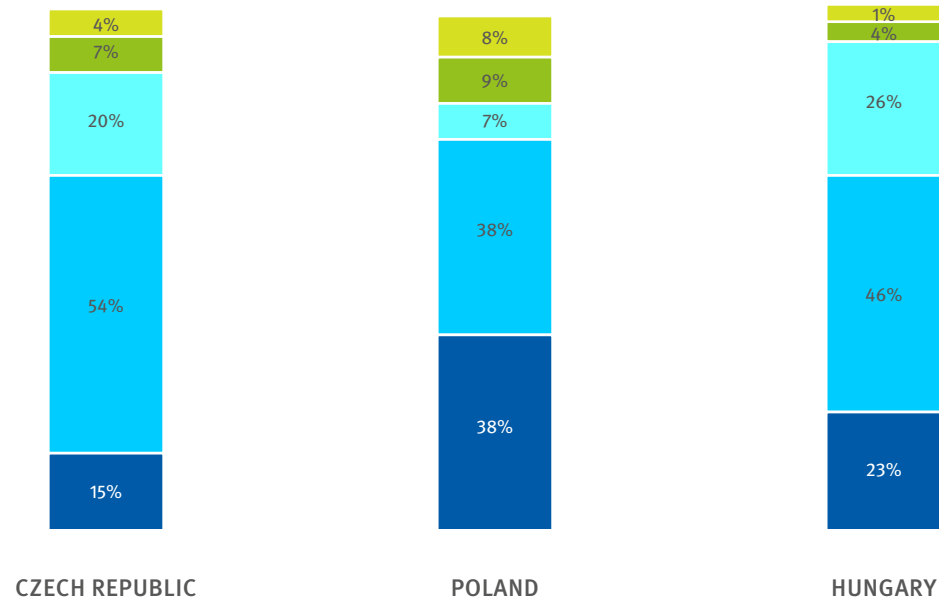
FREQUENCY OF AI USE

QUESTION: DO YOU WISH TO LEARN HOW TO USE AI AT YOUR WORK OR USE AI FOR YOUR WORK EVEN MORE OFTEN?

Total: Yes 59%   No 25%   Don't know 16%

The survey across Poland, Czech Republic, and Hungary shows that 59% of respondents wish to learn how to use AI at work or use it more often, 25% do not, and 16% are unsure. The results indicate a high motivation to engage with AI across the region, with no significant differences among the countries.

- Don't know
- No
- Yes

	Don't know	No	Yes
CZECH REPUBLIC	15%	25%	60%
POLAND	17%	25%	57%
HUNGARY	15%	26%	59%
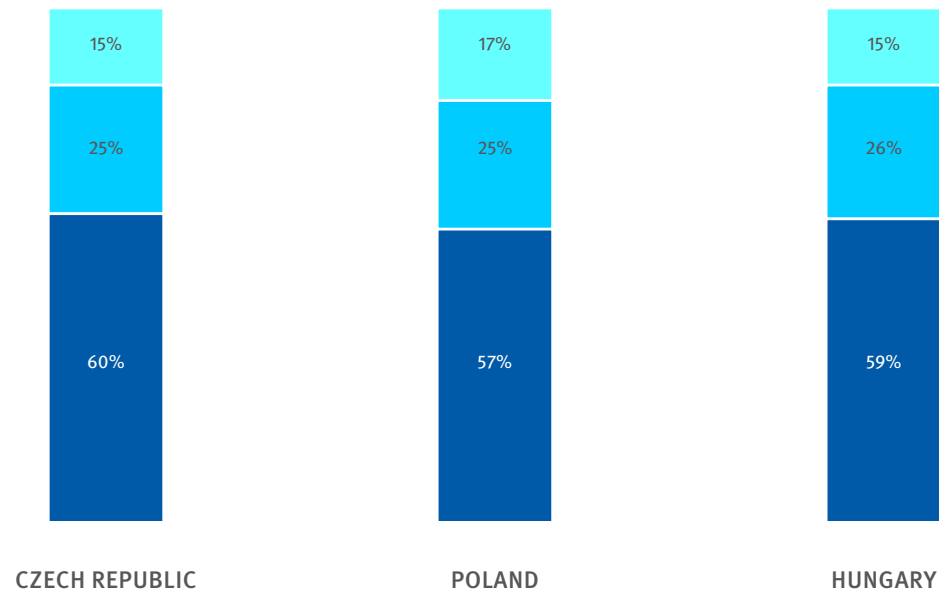
MAIN OBSTACLES TO MORE FREQUENT AI USE

QUESTION: WHAT ARE THE MAIN OBSTACLES THAT PREVENT YOU FROM USING AI AT YOUR WORK AT ALL OR MORE OFTEN?

Total (three biggest obstacles): Insufficient overview of available tools 33%   Insufficient training 16%   Lack of trust 14%

According to the market research in Poland, the Czech Republic, and Hungary the primary issue that prevents workers from using AI more often is an insufficient overview of available tools and solutions suitable for their work and company, affecting 33% of respondents. This problem is more pronounced in the Czech Republic and Hungary (around 35%) compared to Poland (26%). Inadequate training provided by companies is the second major obstacle, cited by 16% of respondents. Lack of trust in AI is the third obstacle, with higher distrust levels in Poland (17%) and Hungary (15%) than in the Czech Republic (9%), highlighting the importance of data verification in these markets. Positively, only 5% of workers across all three countries do not understand AI, and just 4% have had poor experiences with it.

CZECH REPUBLIC

- 9%
- 5%
- 6%
- 5%
- 15%
- 9%
- 14%
- 37%

POLAND

- 7%
- 5%
- 7%
- 6%
- 14%
- 17%
- 18%
- 26%

HUNGARY

- 10%
- 4%
- 4%
- 7%
- 9%
- 15%
- 16%
- 35%

Legend:
- ▉ Other
- ▉ I don't have a good experience with it
- ▉ I don't understand it
- ▉ I don't have any support from my boss/team
- ▉ I don't have time to learn it/use it
- ▉ I don't trust it
- ▉ I don't have any training from the company
- ▉ I don't have an overview about available tools/solutions that would be suitable for my work/company
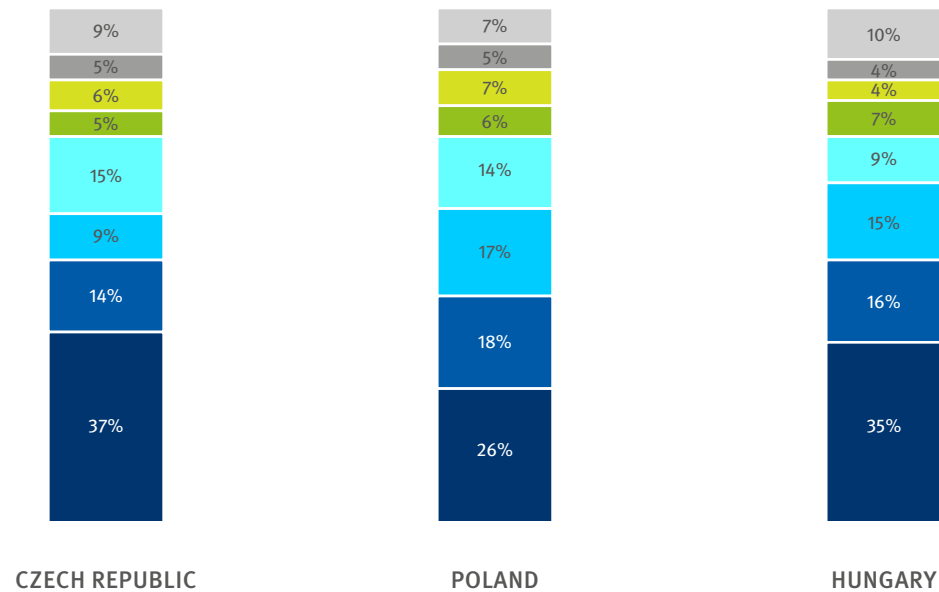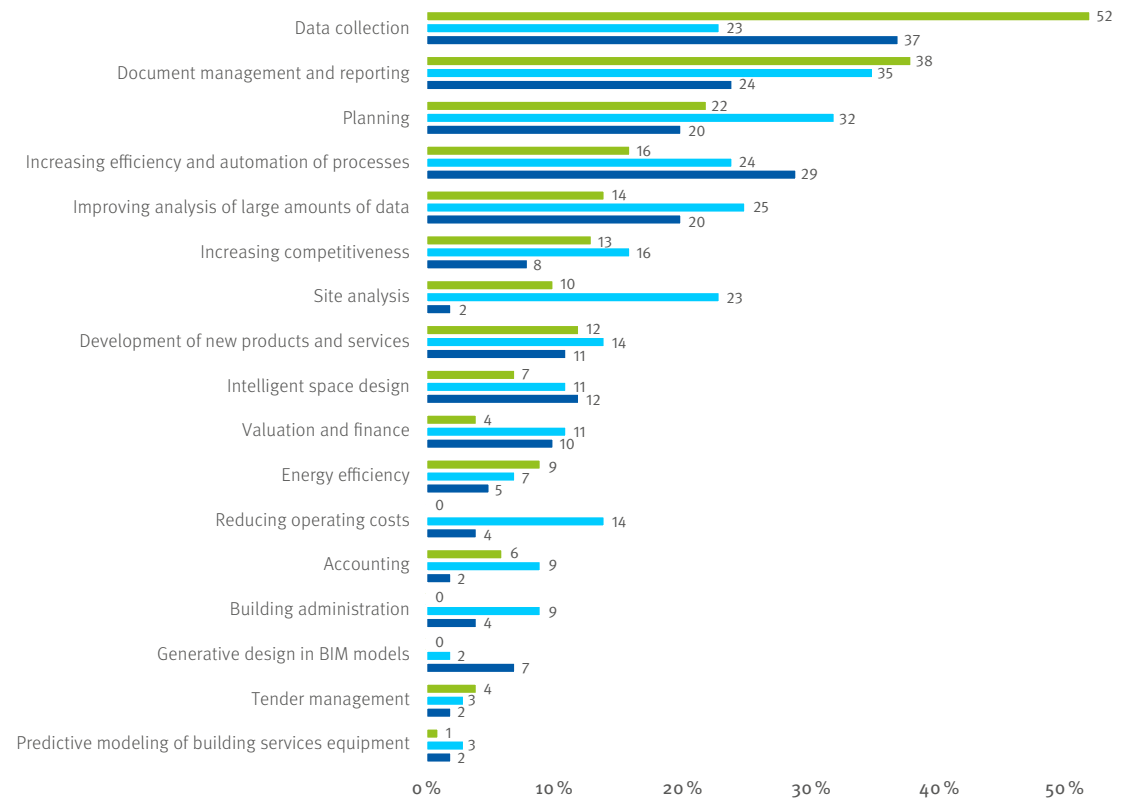
4.3

CURRENT AI APPLICATIONS

QUESTION: WHAT KIND OF ACTIVITIES DO YOU USE AI FOR MOST OFTEN? MAXIMUM OF 5 OPTIONS SELECTED. ONLY RESPONDENTS USING AI FOR WORK.

There are notable differences in AI application areas among real estate workers in Poland, the Czech Republic, and Hungary. Hungary leads when it comes to data collection, with 52% of workers using AI for this purpose, while the Czech Republic also has a significant share at 37%. Polish workers primarily use AI for document management and reporting (35%), which is also important for Hungarian workers (38%), and for planning (32%). In the Czech Republic, AI is often used for process automation (29%), whereas in Poland, it is used for improving the analysis of large amounts of data (25%) and site analysis (23%). The latter is unique to Poland, as Hungary and the Czech Republic show much less interest in this area (10% and 2%, respectively). AI usage for intelligent space design is more developed among Czech (12%) and Polish (11%) workers, while a higher percentage of Hungarian workers use AI for energy efficiency (9%). Poland stands out in using AI for reducing operating costs (14%) and building administration (9%). The Czech Republic has a higher percentage share in the area of generative design in BIM models (7%).

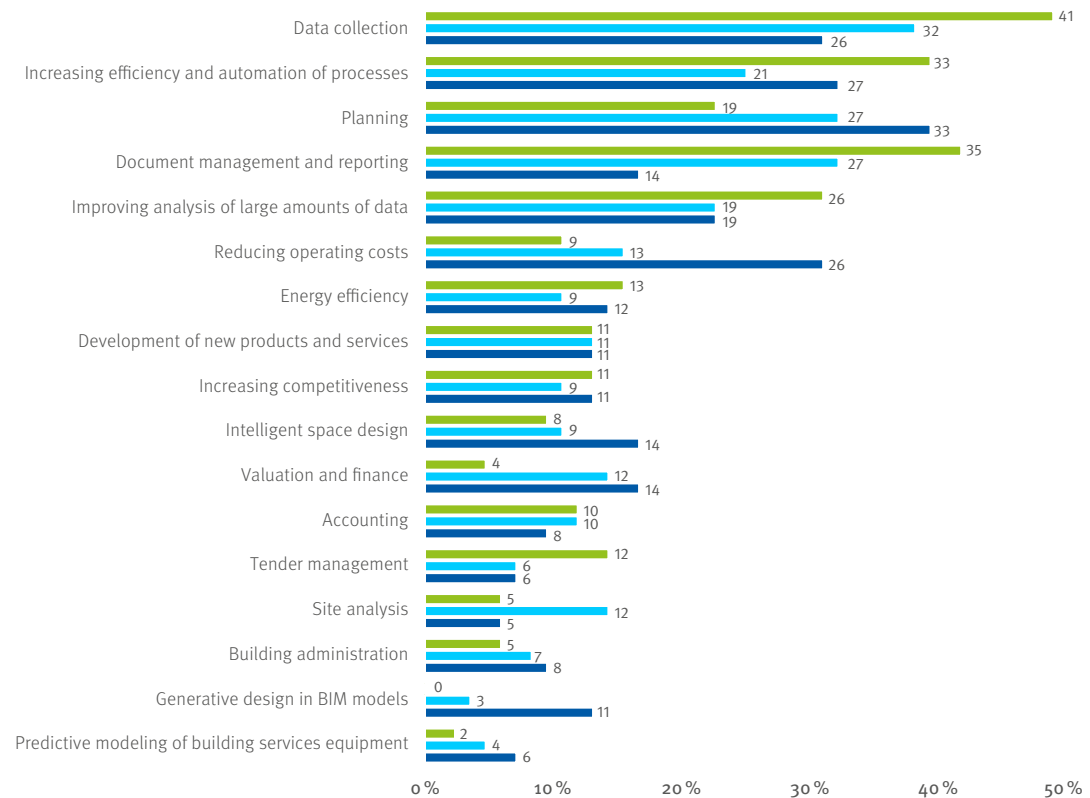| Activity	HU	PL	CZ
Data collection	52	23	37
Document management and reporting	38	24	35
Planning	22	32	20
Increasing efficiency and automation of processes	16	24	29
Improving analysis of large amounts of data	14	25	20
Increasing competitiveness	13	16	8
Site analysis	10	23	2
Development of new products and services	12	14	11
Intelligent space design	7	11	12
Valuation and finance	4	11	10
Energy efficiency	9	7	5
Reducing operating costs	0	14	4
Accounting	6	9	2
Building administration	0	9	4
Generative design in BIM models	0	2	7
Tender management	4	3	2
Predictive modeling of building services equipment	1	3	2

■ HU ■ PL ■ CZ

4.3

FUTURE AI APPLICATIONS

QUESTION: IF YOU HAVE THE RIGHT SUPPORT AND YOU WISH TO USE AI FOR YOUR WORK, WHAT KIND OF ACTIVITIES WOULD YOU LIKE TO USE AI FOR THE MOST?

Looking ahead, data collection remains a strong area for future AI applications across all three countries, with Hungary leading at 41%. Polish workers are keen to further apply AI in planning and document management and reporting (both 27%). Document management and reporting is also of high interest to Hungarian workers (35%), who also wish to focus on process automation (33%). Czech workers see significant AI potential in planning (33%), process automation (27%), and reducing operating costs (26%). Additionally, Czechs are interested in applying AI in intelligent space design, valuation and finance (14%), energy efficiency (12%), and generative design in BIM models (11%). Polish workers see good potential for AI in valuation and finance (12%) and accounting (10%). Hungarian workers also wish to use AI more in energy efficiency (13%) and tender management (12%).

■ HU ■ PL ■ CZ

Category	HU	PL	CZ
Data collection	41	32	26
Increasing efficiency and automation of processes	33	21	27
Planning	19	27	33
Document management and reporting	35	27	14
Improving analysis of large amounts of data	26	19	19
Reducing operating costs	9	13	26
Energy efficiency	13	9	12
Development of new products and services	11	11	11
Increasing competitiveness	11	9	11
Intelligent space design	8	9	14
Valuation and finance	4	12	14
Accounting	10	10	8
Tender management	12	6	6
Site analysis	5	12	5
Building administration	5	7	8
Generative design in BIM models	0	3	11
Predictive modeling of building services equipment	2	4	6

PROMOTION OF AI INNOVATIONS IN COMPANIES

QUESTION: HOW DOES YOUR COMPANY PROMOTE INNOVATION IN THE FIELD OF AI?
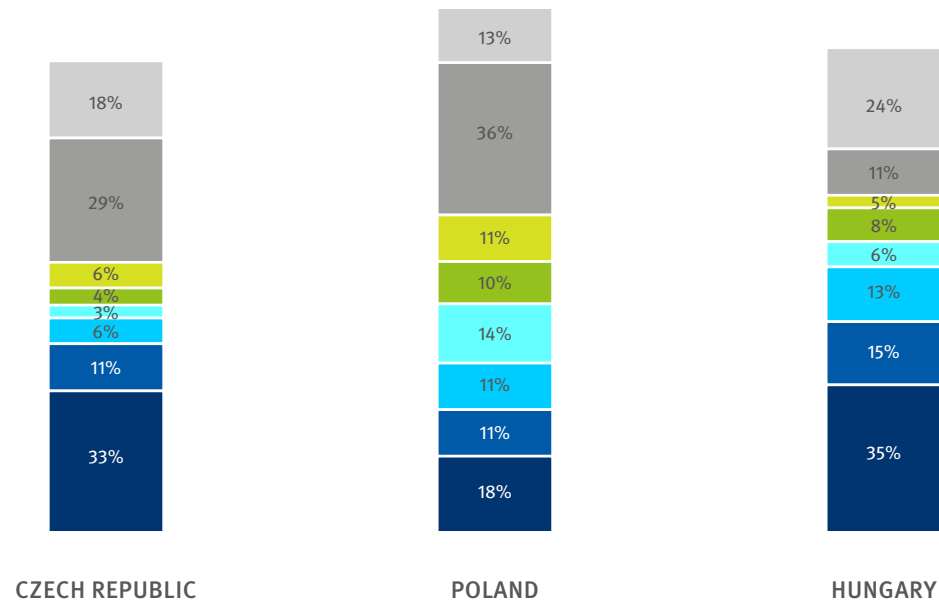
Total (three most common responses): Don't know of any specific activities in their company 29%   **The company doesn't promote it 25%**   **Training for employees 12%**

Over 50% of real estate workers in Poland, the Czech Republic and Hungary stated that their company either doesn't promote AI activities or they are not informed about them. In Hungary and the Czech Republic, the most common method for promoting AI innovations is through training and further education for employees (15% and 11%, respectively). In Poland, it is through participation in industry-specific events (14%). Cooperation with start-ups and the establishment of internal innovation labs and research departments are more common in Poland than in the other two countries.

- ■ I don't know
- ■ We don't promote it
- ■ Cooperation with external research institutions and start-ups
- ■ Establishment of internal innovation labs or research departments
- ■ Participation in industry-specific conferences and events
- ■ Establishment of incentive system for innovative ideas and projects
- ■ Training and further education for employees working with AI
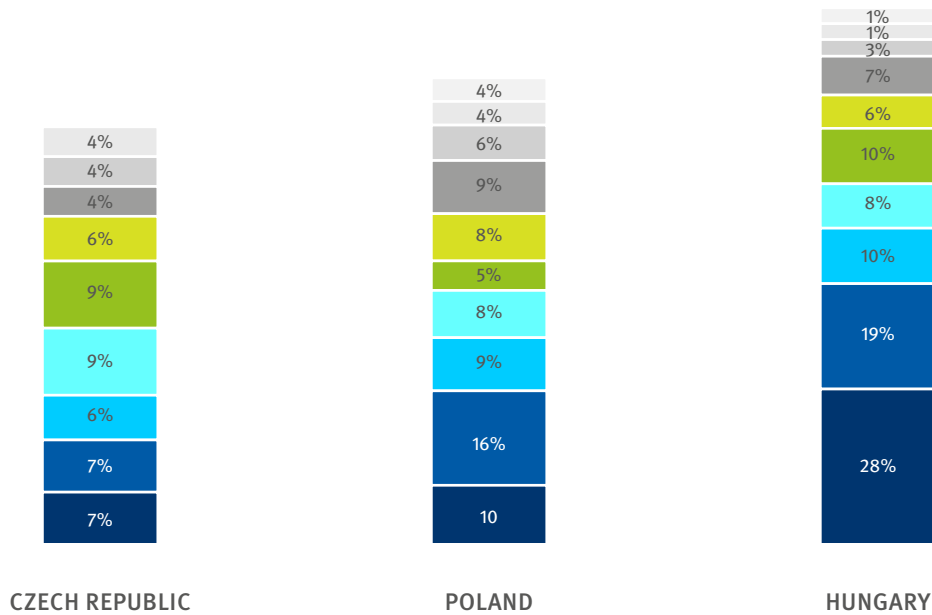- ■ I don't know about any specific activities in our company

CZECH REPUBLIC

- 18%
- 29%
- 6%
- 4%
- 3%
- 6%
- 11%
- 33%

POLAND

- 13%
- 36%
- 11%
- 10%
- 14%
- 11%
- 11%
- 18%

HUNGARY

- 24%
- 11%
- 5%
- 8%
- 6%
- 13%
- 15%
- 35%

4.5

USE OF OTHER DIGITAL TOOLS

QUESTION: DO YOU USE ANY OTHER TECHNOLOGIES/DIGITAL TOOLS (ALONGSIDE AI) FOR YOUR WORK?

Total: Yes 43%   No 40%   Don't know 17%

In total 43% of respondents across all three markets use other digital tools alongside AI. In Poland, the most used digital tools after AI are document management software (16%), cloud computing (10%), project management software, and business intelligence tools (9%). In Hungary, nearly 30% of workers use cloud computing, while in the Czech Republic, the Internet of Things is increasingly significant (10%).

- Yes, quantum computing
- Yes, digital twin
- Yes, energy management software
- Yes, business intelligence tools
- Yes, big data analytics
- Yes, internet of things
- Yes, other technology not mentioned above
- Yes, project management software
- Yes, document management software
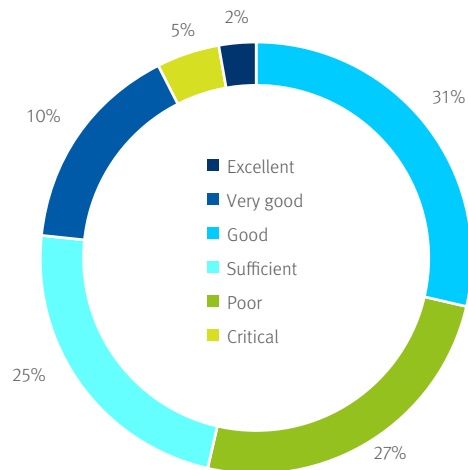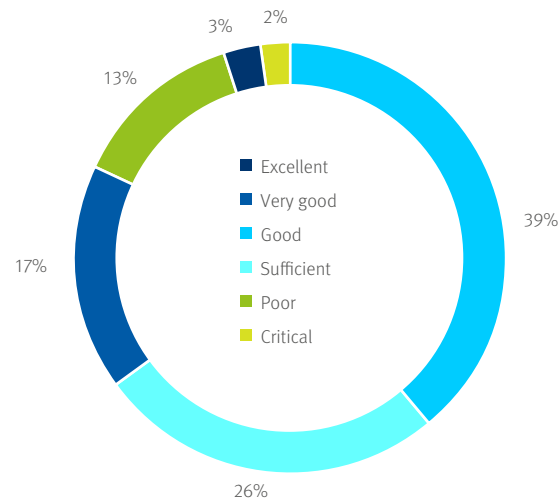- Yes, cloud computing

CZECH REPUBLIC

Czech Republic values (top to bottom): 4%, 4%, 4%, 6%, 9%, 9%, 6%, 7%, 7%

POLAND

Poland values (top to bottom): 4%, 4%, 6%, 9%, 8%, 5%, 8%, 9%, 16%, 10

HUNGARY

Hungary values (top to bottom): 1%, 1%, 3%, 7%, 6%, 10%, 8%, 10%, 19%, 28%

PERCEPTION OF DIGITALIZATION ADVANCEMENT

QUESTION: HOW DO YOU PERCEIVE THE LEVEL OF DIGITALIZATION IN YOUR INDUSTRY SECTOR?

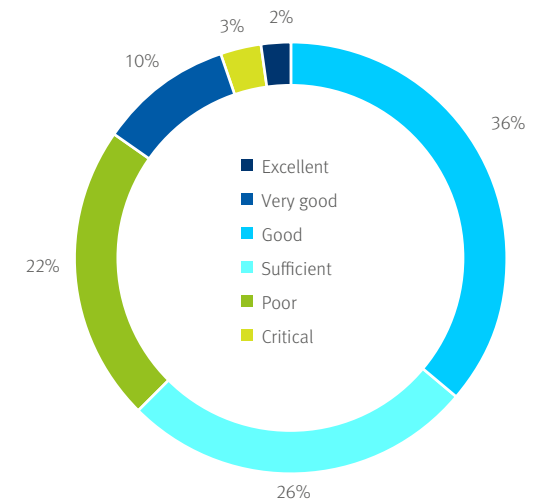**Total:** Excellent 2%   Very Good 12%   Good 35%   Sufficient 26%   Poor 21%   Critical 3%

CZECH REPUBLIC

31% · 2% · 5% · 10% · 25% · 27%

Legend:
- Excellent
- Very good
- Good
- Sufficient
- Poor
- Critical

POLAND

39% · 2% · 3% · 13% · 17% · 26%

Legend:
- Excellent
- Very good
- Good
- Sufficient
- Poor
- Critical

HUNGARY

36% · 2% · 3% · 10% · 22% · 26%

Legend:
- Excellent
- Very good
- Good
- Sufficient
- Poor
- Critical

The overall perception of digitalization in the real estate sector across Poland, the Czech Republic, and Hungary is positive, with almost half of workers rating it good or very good. Poles are the most optimistic, with 56% perceiving the digitalization level as good or very good. Conversely, Czechs are the most critical, with 27% rating it poor and 5% critical.
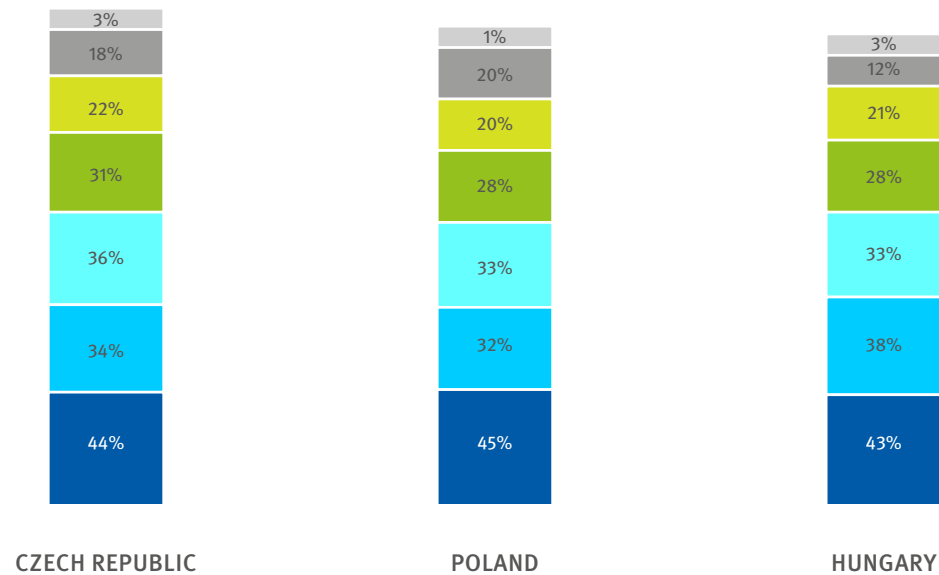
4.7

MAIN DIGITALIZATION CHALLENGES

QUESTION: WHAT ARE THE BIGGEST CHALLENGES OF DIGITALIZATION IN YOUR INDUSTRY SECTOR?

Total: (three most common responses): Lack of digital skills among employees 44%
Investment costs for digital tools implementation 35%   Lack of awarness of the digitalization benefits 34%

The primary challenges across all three markets are viewed similarly, with no significant differences between the countries. These challenges include a lack of digital skills among employees (44%), insufficient investment in digital tools, systems, and processes (35%), lack of awareness of the benefits and opportunities of digitalization (34%), data security and protection concerns (30%), insufficient leadership from company management to promote digitalization (21%), and lack of standardization and interoperability of digital tools (17%).

Legend:
- Other
- Lack of standardization and interoperability of digital tools
- Lack of leadership from company's management to promote digitalization further
- Data security and data protection
- Lack of awareness of the benefits and opportunities of digitalization
- Investment costs for implementing digital tools, systems, and processes
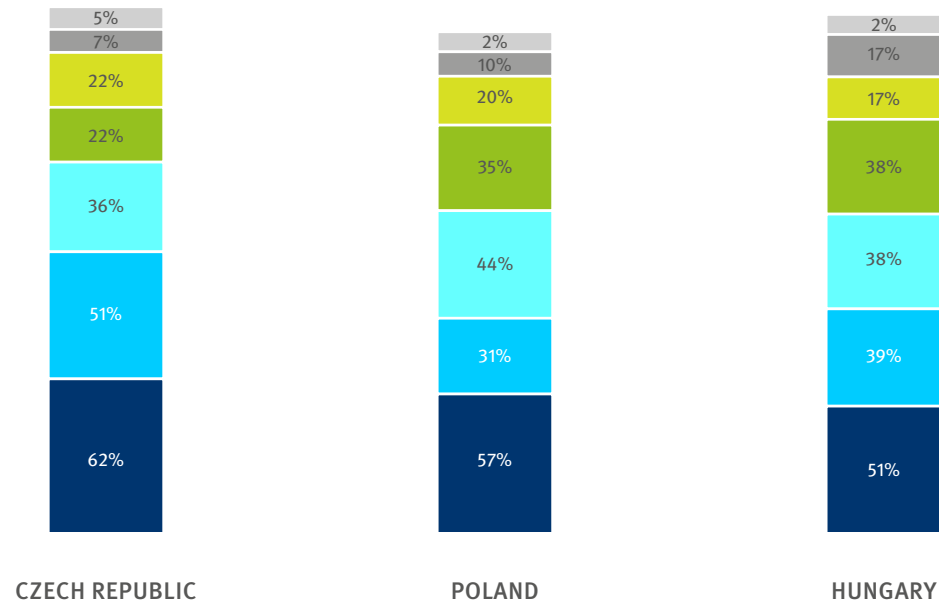- Lack of digital skills among employees

CZECH REPUBLIC
- 3%
- 18%
- 22%
- 31%
- 36%
- 34%
- 44%

POLAND
- 1%
- 20%
- 20%
- 28%
- 33%
- 32%
- 45%

HUNGARY
- 3%
- 12%
- 21%
- 28%
- 33%
- 38%
- 43%

4.8

MAIN DIGITALIZATION OPPORTUNITIES

QUESTION: WHAT ARE THE BIGGEST OPPORTUNITIES OF DIGITALIZATION?

Total: (three most common responses): Increased efficiency/reduced operating costs 57%   Process optimization 40%   Greater service quality 39%

Digitalization opportunities are perceived slightly differently in Poland, the Czech Republic, and Hungary. Workers in all three markets agree that the biggest opportunity lies in increased efficiency and reduced operating costs. The Czech Republic places a higher emphasis on process optimization (51%), while Poland views greater service quality as more important (44%). In Hungary, process optimization, greater service quality, and increased transparency through the availability of digital documents are seen as equally important (38%). Additionally, Hungary strongly believes in the potential of digitalization for generating new business models (17%).

Legend:
- ▇ Other
- ▇ Generate new business models
- ▇ Increased employer attractiveness for young professionals as new colleagues
- ▇ Increased transparency through availability of digital documents
- ▇ Greater service quality
- ▇ Optimization of process through digitalization
- ▇ Increased efficiency/reduced costs in operation

CZECH REPUBLIC
- 5%
- 7%
- 22%
- 22%
- 36%
- 51%
- 62%

POLAND
- 2%
- 10%
- 20%
- 35%
- 44%
- 31%
- 57%

HUNGARY
- 2%
- 17%
- 17%
- 38%
- 38%
- 39%
- 51%

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