NETWORK OF BRICS SCIENTIFIC RESEARCH INSTITUTES OF LABOR

Artificial Intelligence and the Future of Labor in Russia

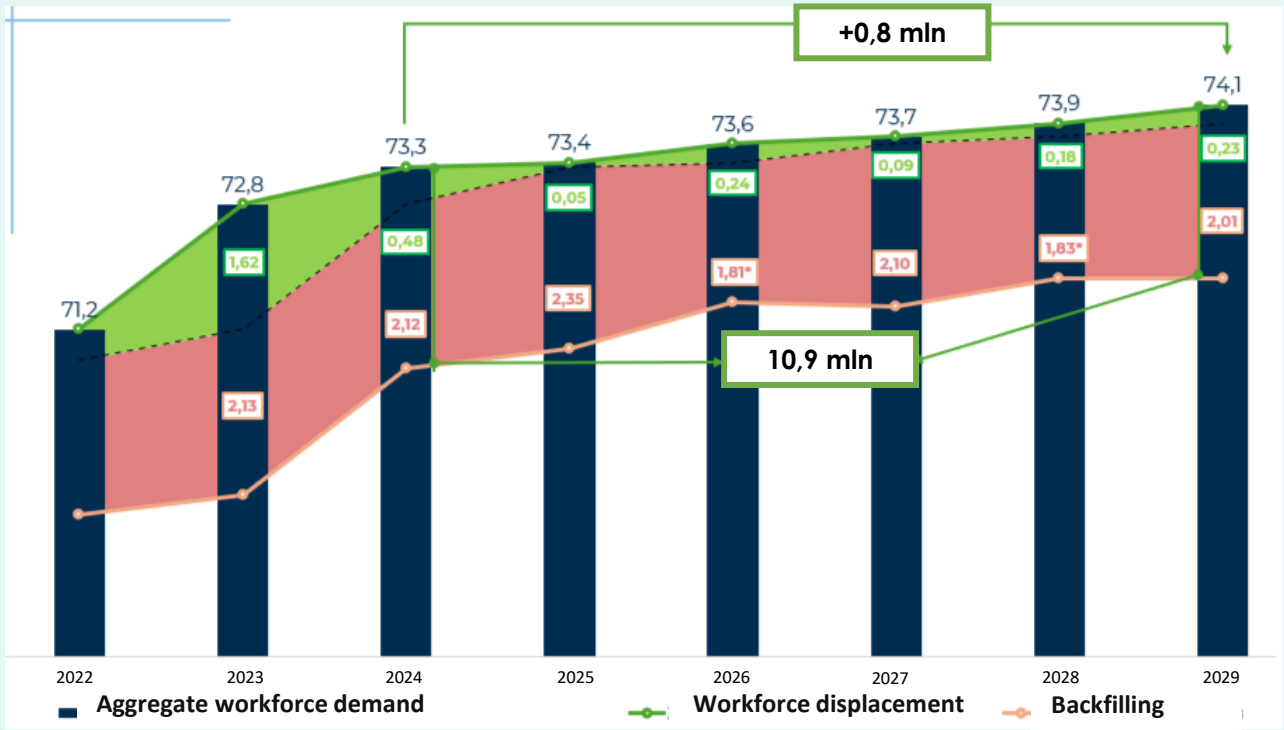
25th of November, 2025

Brasília, Brazil

State of labor market in Russia

- **Decline** in the total population, including those of working age;
- **Decrease** in the share of age groups with the **highest employment** rates and an **increase** in the share of youth (15-24 years old) **with low employment rates** due to involvement in full-time education by 2032;
- An **exhaustion** of employment growth **reserves** due to the minimal unemployment level and a decrease in the potential labor force;
- A **high level of workforce shortage**, growing since 2023, especially in manufacturing, reflected in the increase in the number of job vacancies (demand for workers) per job seeker.

Use of AI technologies in organizations at the moment and in the next 5 years (% of respondents)



0.8 million increase in total demand in 2029 relative to 2024

10.1 million - number of people leaving employment in 2025-2029

10.9 million - total replacement demand over 5 years

AI potential effects on Russian Economy

Potential effects:

- The technology can automate routine tasks and enhance employees' creative capabilities, leading to a **15–20% increase in labor productivity.**
- The implementation of generative AI could compensate for up **to 80% of the workforce shortage** across various industries.
- **Additional GDP growth** for Russia by 2030: ~**2.5%** (approximately 4.5 trillion rubles).

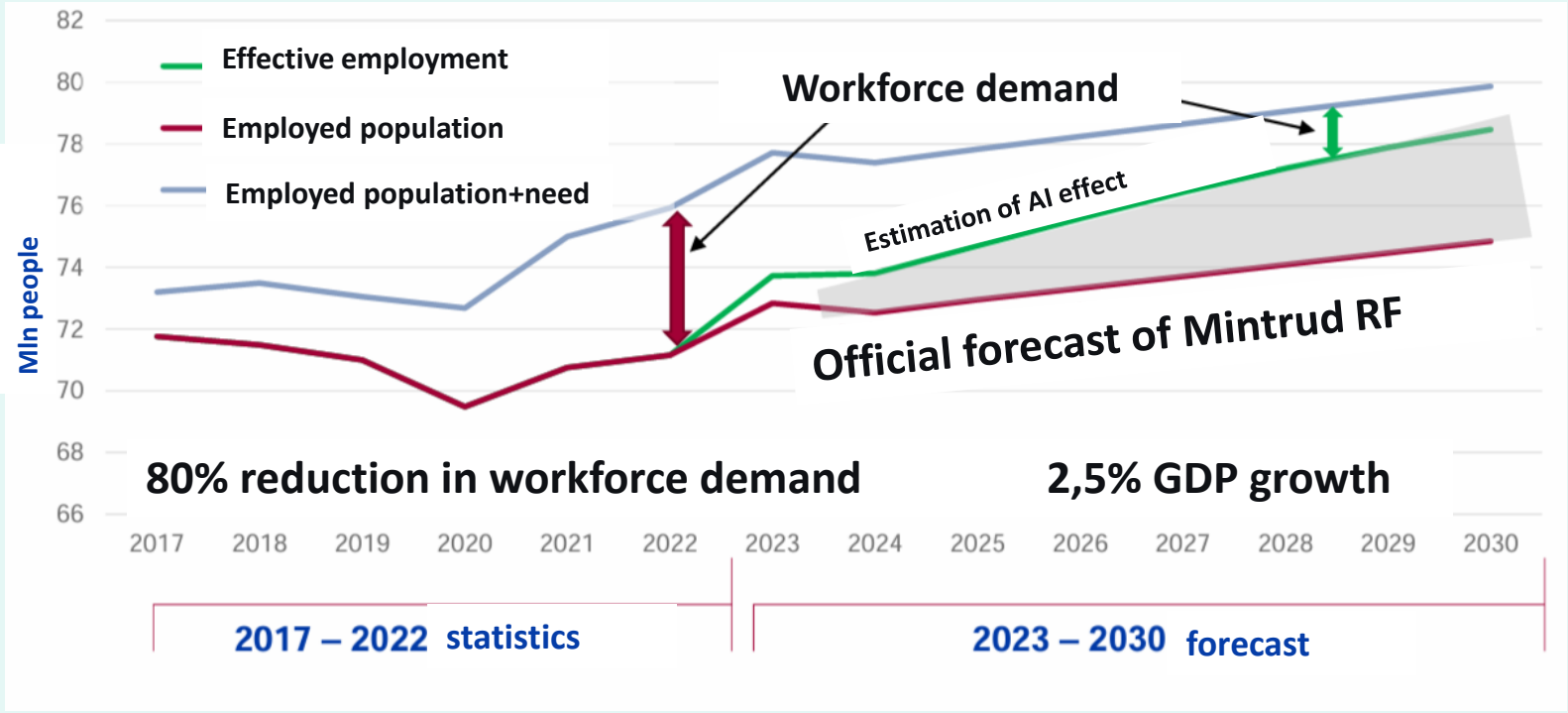
Highest potential for compensating workforce shortages:

- ❑ Healthcare and social services: 84%
- ❑ Manufacturing: 65%
- ❑ Public administration: 61%

Lowest potential:

- ❑ Hotels and food services: 10%
- ❑ Construction: 19%

Employed population in Russia: forecast

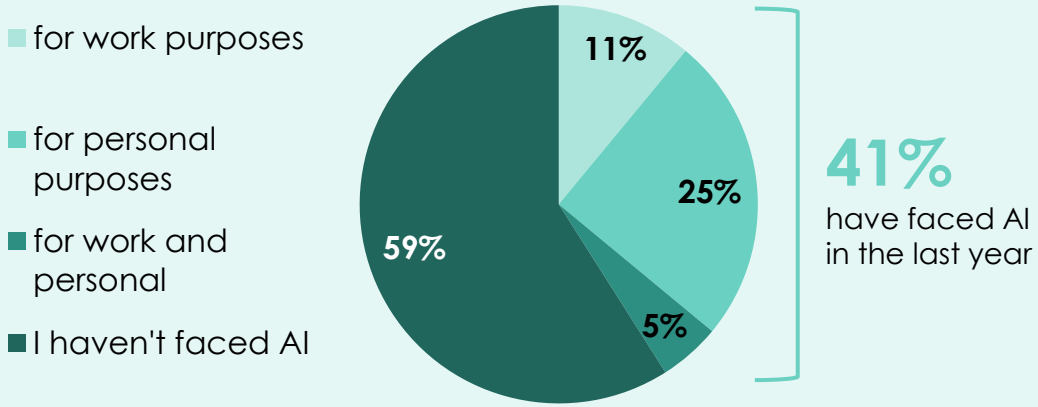


Scale and prospects of AI use in Russia

Level of AI awareness in Russia is very high

84% Russian respondents answered positively to the question *«Do you know what AI is?»*

Have you faced AI in the last year? (2024)



New Russian Society: Citizens and Artificial Intelligence // Yakov & Partners and ROMIR. - 2024. - URL: https://yakovpartners.ru/publications/russian-citizens-and-ai/

24% use **generative** AI for personal or work purposes

45% 32% 18%

BCG CCI Global Consumer Sentiment Survey 2023

Government AI Readiness Index in BRICS (2023)

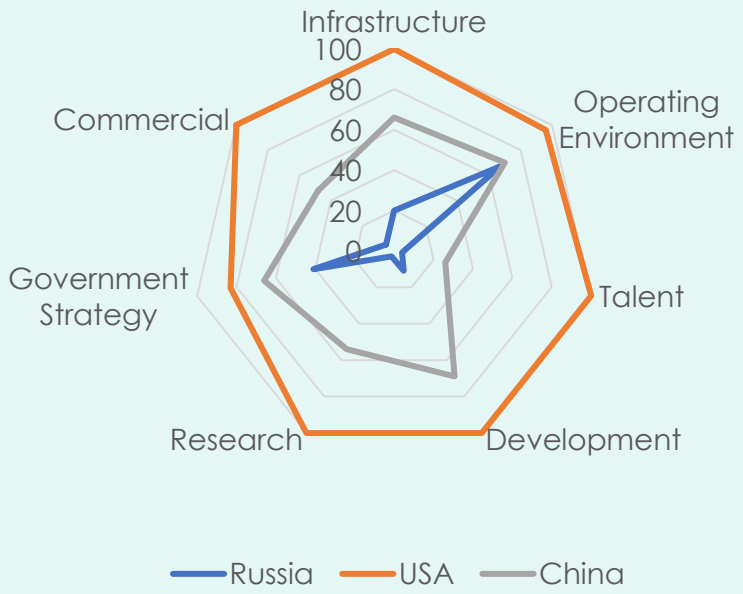
Global Ranking	*Country*	*Total score*	*Government Pillar*	*Technology Sector Pillar*	*Data & Infrastructure Pillar*
1	USA	84,8	86,04	81,02	87,32
16	China	70,94	77,32	60,76	74,75
32	Brazil	63,7	72,44	45,08	73,57
38	**Russian Federation**	**62,92**	**74,13**	**43,38**	**71,26**
40	India	62,58	75,18	49,39	63,17
77	South Africa	47,28	37,82	40,22	63,79

Government AI Readiness Index 2023 // Oxford Insights. – 2023. – URL: https://ai.gov.ru/knowledgebase/infrastruktura-ii/2023_indeks_gotovnosti_pravitelystv_k_vnedreniyu_iskusstvennogo_intellekta_2023_government_ai_readiness_index_2023_oxil/

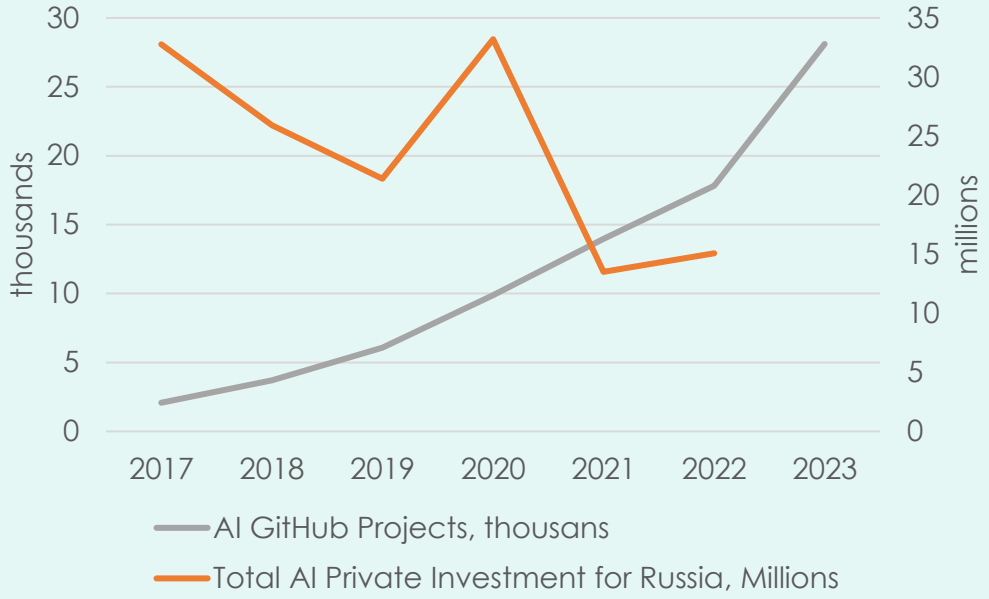
Russia

- is the 1st country in the Eastern Europe to have published ethical AI guidelines
- Is represented in the top 20 for AI research papers

International evaluation



Global Artificial Intelligence Index for Russia, China, and the USA, 2024



Trends in Russia's AI Development Level (Stanford University Data)

VNII Research:

- **Productivity effect + displacement effect**
- **Ambiguous impact of AI on income differentiation**

AI potential effects on Russian Economy

Questionnaire results:

Industry	Current Use of AI	Planned Use of AI in the next 5 years
Aviation / Aerospace Manufacturing	28%	52%
Oil & Natural Gas Extraction	46%	62%
Coal Mining	43%	54%
Rail Transport	**86%**	**97%**
Healthcare	**72%**	**93%**
ICT (IT Industry)	**88%**	**96%**
Metallurgy	69%	**92%**
Machinery & Equipment Manufacturing	54%	62%
Generation & Distribution	36%	57%
Industrial Electronics & Instrumentation	50%	73%
Shipbuilding	55%	64%
Agriculture	34%	67%

- In 34% of organizations, **AI technologies <1% of workers;**
- In 28% of organizations – from 1% to 5% of workers;
- In 15% of organizations – from 6% to 10% of workers;
- In 23% of organizations – more than 10% of workers

Use of AI technologies in organizations at the moment and in the next 5 years (% of respondents)

AI Technology	Currently Used	Planned for Use
Process automation, including robotics	29%	**48%**
Intelligent data analysis	33%	**54%**
Computer vision	32%	**54%**
Natural Language Processing (NLP), including GPT solutions, virtual assistants, chatbots	23%	45%
Speech recognition and synthesis, including voice assistants, various systems for automatic voice customer service	20%	41%
Recommender systems and intelligent decision support systems	22%	44%
Data analysis technologies based on deep learning algorithms	26%	**49%**
Image and video generation technologies based on text prompts or initial images with processing instructions	13%	29%

Use of AI Technologies in Organizations in Russia

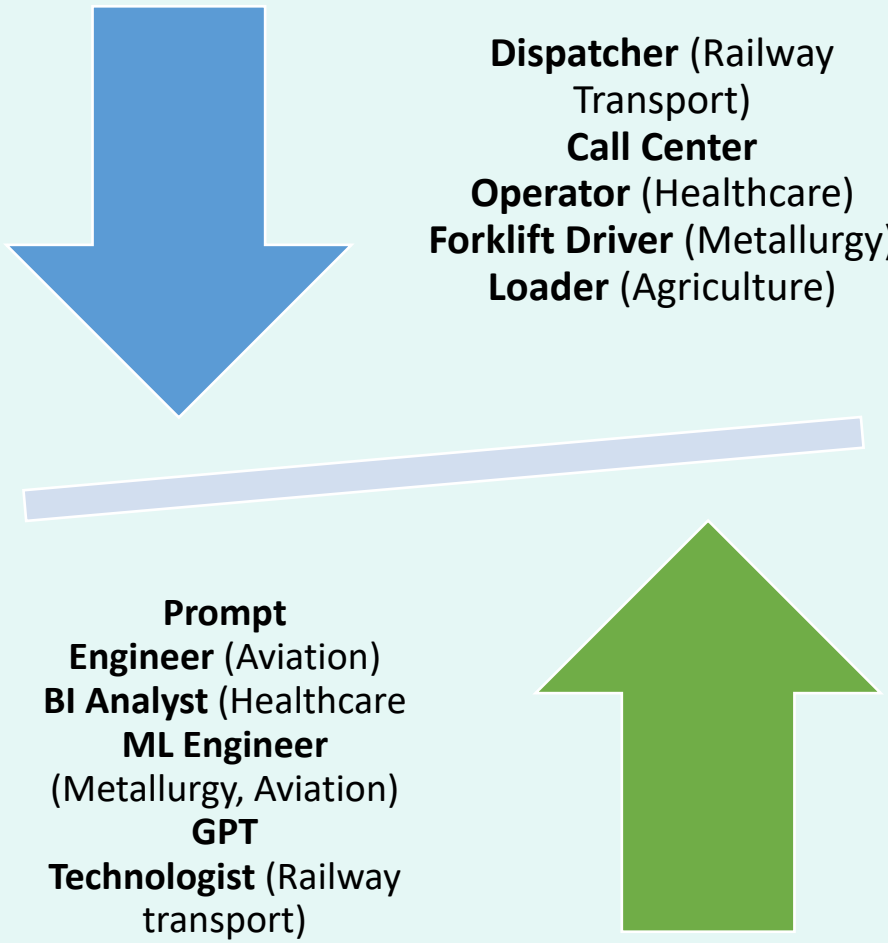
Industry / Technology	Process Automation	Intelligent Data Analysis	Computer Vision	Natural Language Processing	Speech Recognition & Synthesis	Recommender & Decision Support Systems	Data Analysis (Deep Learning)	Image & Video Generation
Aviation	20/44	20/36	16/48	8/32	8/24	20/28	12/40	8/20
Oil & Gas Extraction	38/50	35/54	31/50	19/46	15/38	19/46	38/54	4/19
Coal Mining	22/30	30/43	35/54	3/38	22/35	30/35	30/43	3/11
Railway Transport	**73/76**	**46/76**	**54/70**	**51/86**	**49/73**	41/59	**46/76**	14/49
Healthcare	24/52	**61/83**	**48/80**	**22/70**	28/69	**28/70**	**37/70**	15/44
Industry)	**69/85**	**69/96**	**62/92**	**73/85**	**54/73**	**38/81**	**62/85**	**31/62**
Metallurgy	46/62	42/49	42/55	46/54	28/36	34/44	36/59	26/26
Machinery & Equipment Manufacturing	19/54	27/42	35/54	19/35	-/-	19/46	19/42	15/19
Electric Power Generation, Transmission, Distribution	20/36	18/39	18/39	20/38	18/32	7/30	11/36	5/9
Industrial Electronics & Instrument Engineering	27/50	33/67	20/57	17/33	10/33	20/50	20/43	17/30
Shipbuilding	27/55	36/55	18/45	18/36	-/36	18/45	9/45	27/45
Agriculture	18/40	18/37	20/36	15/26	12/26	15/31	14/31	10/28

Format: Currently Used % / Will Be Used in 5 Years %

The use of the following AI technologies is expected to grow in the next 5 years:

- **Data analysis** technologies based on deep learning algorithms;
- **Recommender systems** and intelligent decision support systems;
- **Speech recognition** and synthesis technologies, including voice assistants and various systems for automated voice customer service.

Professional Future with the AI effect in Russia



Dispatcher (Railway Transport)
Call Center Operator (Healthcare)
Forklift Driver (Metallurgy)
Loader (Agriculture)

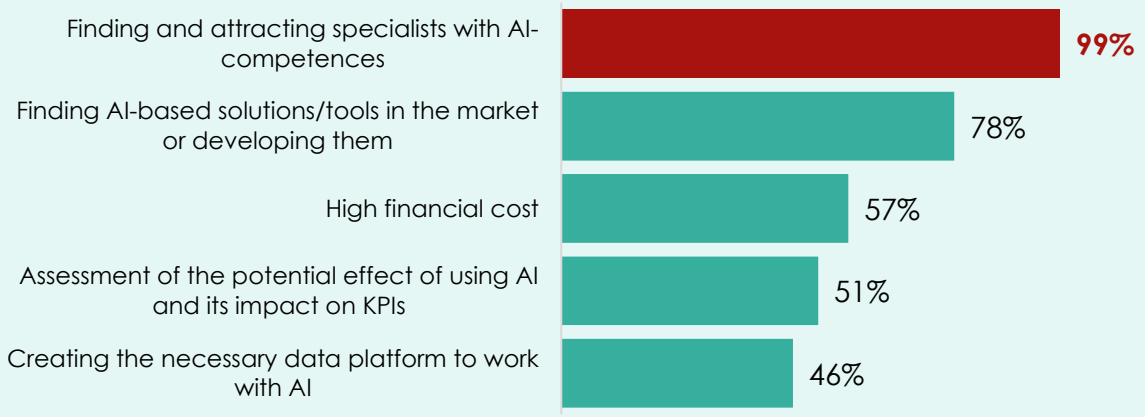
Prompt Engineer (Aviation)
BI Analyst (Healthcare
ML Engineer (Metallurgy, Aviation)
GPT Technologist (Railway transport)

Cross-functional professions:

- **AI Trainer** (new)
- **DevOps Engineer** (new)
- **ML Engineer** (various specializations) (new)
- **HR Specialist** (existing)
- **Prompt Engineer** (new)
- **Accountant** (existing)
- **Information Security Engineer / Information Protection Specialist** (existing)

Business opinion on AI implementation

What challenges does the company see in using AI? (2023)



Artificial Intelligence in Russia - 2023: Trends and Prospects // Yakov and Partners. - 2023. - URL: https://www.yakovpartners.ru/publications/ai-future%20/

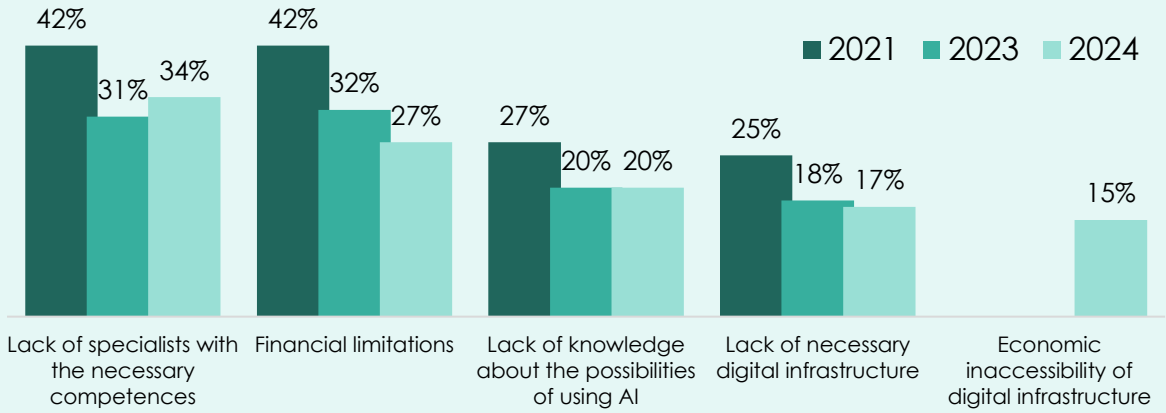
Shortage of AI-qualified specialists

«The need for AI-specialists in Russia is now estimated at 10 thousand people»

Sberbank assessed the shortage of specialists in the field of artificial intelligence // RIA. - 2024. - URL: https://ria.ru/20240605/sberbank-1950543669.html

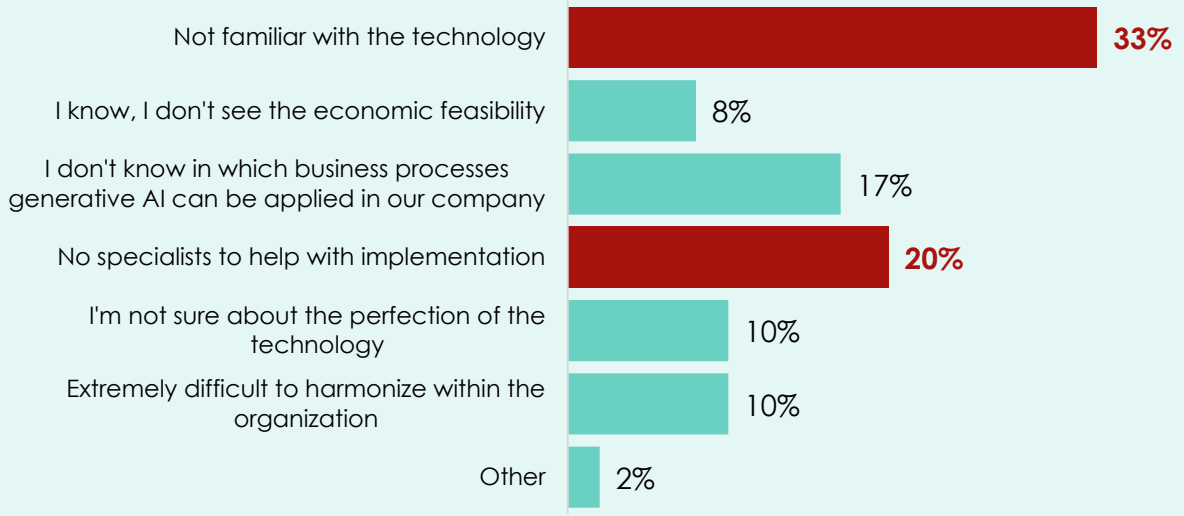
– the most prioritized **barrier** to AI implementation **in business**

Top-5 barriers to AI technologies use (2024)



Index of readiness of priority sectors of the Russian Federation economy to implement artificial intelligence. Analytical report. - Moscow: National Centre for Artificial Intelligence Development under the Government of the Russian Federation, 2024. - 85 c.

Why don't you use generative AI? (2024)



Survey of companies on the application of generative artificial intelligence // Work of Russia. - 2024. - URL: https://trudvsem.ru/questionnaire-employer

State policy in the field of AI

National Strategy for the Development of AI to 2030

Decree of the President of the Russian Federation
*No. 490 of **10 October 2019***
«On the development of artificial intelligence in the Russian Federation»

«The main principles of development and use of artificial intelligence technologies, which must be observed in the implementation of this Strategy, are:

protection…including **the right to work, and providing opportunities for citizens to acquire knowledge and skills to successfully adapt to the digital economy»**

Among the **National Development Goals** until 2030 and in the perspective until 2036:

- Technological leadership
- Realisation of each person's potential, development of his or her talents, upbringing of a patriotic and socially responsible personality
- Digital transformation of state and municipal governance, economy and social sphere

Among the **National Projects** aimed at achieving the National Goals:

- Workforce
- Data economy and digital transformation of the state
- Youth and children
- Production and automation tools

Among the **Targets and Objectives** that mark the achievement of the National Goals:

- ✓ **Ensuring technological independence and formation of new markets** in such areas as data economy and digital transformation, artificial intelligence
- ✓ **Achieving 'digital maturity' of state and municipal administration, key sectors of the economy and social sphere by 2030**, which implies automation of most transactions within the framework of unified sectoral digital platforms and a data-based management model, taking into account the accelerated implementation of big data processing technologies, machine learning and artificial intelligence.
- ✓ **Formation of the data market, their active inclusion** in economic turnover, storage, exchange and protection
- ✓ Increasing the share of mass socially important state and municipal services provided in electronic form to 99% by 2030, including the implementation of a decision support system for the provision of at least 100 mass socially important state services in electronic form in a proactive mode or at the direct request of the applicant, through the implementation of **the unified digital platform** in the activities of public authorities

Priorities of the population's vocational development policy

Challenges of the digitalization era

1 Changes in the volume and structure of **labour demand** as a result of rapid technological progress

2 Changes in **labour supply**: young people entering the labour market + increase in the number of older workers, retention of a significant share of socially vulnerable groups

3 **Unwillingness** of a significant part of the employed population to technological future, continuous vocational education, professional, cross-sectoral and territorial mobility

Courses of action

- Formation of **digital literacy** of the population as a basic competence for life and work
- Advanced training of **new highly qualified workforce** with higher and secondary vocational education taking into account the forecasted workforce needs of the economy and social sphere
- Expansion of **targeted training** for key economic and social sectors
- Large-scale **requalification of the adult population** aimed at meeting current and medium-term demand for skills by employers
- Organization of **independent quality assessment** of vocational education

- Formation of the value of work, self-realization in work, and the need for lifelong learning **during preschool and school education**
- Ensuring that citizens of all age and socially vulnerable groups develop **in-demand and promising skills** for employment, maintaining employment and building a career
- Implementation of **individual approach** to the development of labor potential taking into account the needs and capabilities of various social groups
- Developing **talents of all ages** and supporting creative business and non-profit organizations

- Development of accessible and adapted mechanisms to **inform the population** about labour market trends, the volume and nature of demand for occupations and skills; employment, education or requalification opportunities
- Formation of skills for **self-assessment and management of professional development**, readiness to work transitions
- Accessible **career guidance for the entire population**, promotion of professional self-determination of children and youth, adjustment of the professional trajectory of the adults
- Increasing the prestige of **working and engineering professions**
- Increasing **adult inclusion in continuing vocational education**, including through free online services
- Increasing the attractiveness of **self-employment and individual entrepreneurship**, development of entrepreneurial skills

Conclusion (1/2)

- Primary risks of AI implementation are most associated with a **shortage of specialists** possessing the necessary competencies for applying AI, and the need for large-scale upskilling of workers. At the same time, the use of AI technologies brings risks of **mass and partial workforce displacement (affecting 9-23% of workers).**
- Currently, about half of the organizations in the surveyed industries use at least one AI technology. However, the **overall proportion** of workers using AI is **small.**
- **Currently and in the nest 5 years**, the most commonly used AI technologies are intelligent **data analysis, computer vision, and process automation, including robotics**.
- **The effect** is mixed: some professions **disappear**, **new job functions** emerge within other professions, and some job functions become irrelevant and vanish. At the same time, a portion of professions remains unchanged. Given the uneven development across different economic sectors and individual enterprises, the **implementation of new technologies does not happen simultaneously** but is stretched over time. This impacts the formation of employer demand for workers with specific competencies.
- The **emergence of entirely new professions** as a result of implementing new technologies occurs **less frequently** than the appearance of new job functions within existing professions. **Cross-functional professions.**

Conclusion: priorities of government policy (2/2)

Kremlin priorities:

- **Headquarters** for leading the artificial intelligence industry.
- In developing AI in Russia, it is necessary to constantly **move forward to keep pace** with the speed and scale of the ongoing changes.
- The government and regions need to formulate a **national plan for the implementation** of generative artificial intelligence.
- The issue **of independence** in the field of artificial intelligence.
- Russia aims to build international cooperation in the field of AI with partners, including within the frameworks of BRICS.
- Russia proposes to partner countries to harmonize legislation regarding AI.

Thank you for your attention!

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