

# Prospects for the Use of AI Tools in the Republican Centre for Technology Transfer Network

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## ABSTRACT

The paper informs about services and information resources provided by the Republican Centre for Technology Transfer (RCTT) to innovation activity agents and prospects for the use of AI tools in the RCTT Network in order to improve the quality and speed of preparing profiles (technology offers/requests, business offers/requests and R&D requests), creating promotion and marketing content to find potential partners, drafting contracts, etc.

## KEYWORDS

Technology transfer (TT), AI, generative AI, technology transfer offices (TTOs)

## 1 INTRODUCTION

"Will AI be replacing people in the near future?" "It looks to me like, and for a while, AI is much better at doing tasks than doing jobs. It can do these little pieces super well, but sometimes it goes off the rails. It can't keep very long coherence. So, people are instead just able to do their existing jobs way more productively, but you really still need the human there today." Sam Altman, CEO of Open AI.

As noted in the UNECE White Paper on the use of Artificial Intelligence in Trade Facilitation [1], artificial intelligence (AI) is an enabling technology impacting the global economy and international trade. Combined with business-process-oriented automation and more efficient data flow exchanges, AI further promises to lift barriers to international trade, stimulate growth in global electronic commerce and allow for better predictions and associations to inform policy decisions.

The benefits of AI-based systems include:

- reducing the time spent on working with one document by more than 80%;
- reducing the number of errors in procedures;
- creating centralized repositories of information and

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documentation associated with files that will remain accessible even several years after the file is closed (the data is the property of the client);

- automation of interaction between all participants in international cooperation;
- direct access to file information from anywhere where there is an Internet connection, even from mobile devices and smartphones.

United Nations System White Paper on AI Governance [2] suggests an increasing recognition of AI's role in amplifying the work of governments and international bodies. Additionally, Gartner predicts a staggering 80% of project management tasks will use AI by 2030 [3], a testament to the growing reliability and trust in AI technologies within structured operational frameworks.

Since 2023 the use of AI in the work of technology transfer offices (TTOs) has been regularly discussed at webinars of the Association of University Technology Managers (AUTM).

On May 5, 2023, a webinar "Generative AI has Arrived: Essential Knowledge for TTOs" was held, which explained: What is generative AI? Why should you care? The current state of AI and applications, such as ChatGPT, that are already at your disposal. How you can implement these tools in your office, some of the most pressing risks and concerns your office might face, and a look into what's coming next.

On March 3, 2024, a webinar "The AI Enabled TTO" was held, where the use of AI by TTOs to improve the efficiency of their work was discussed, in particular to: automate routine tasks, analyze market trends, assess competitors, assess intangible assets, speed up decision-making and optimize resources.

On May 2, 2024, a webinar "Tailoring Your AI Tools for Tech Transfer Transformation" was held. This webinar explores customizing AI tools to better support unique tech transfer processes and goals.

Video recordings and presentations of these webinars can be found on the Internet portal of AUTM [4].

Participation in the above webinars, as well as the analysis of publications [1–6] shows that, AI can be used in the work of the TTOs to:

- improve the quality of profiles (technology offers/requests, business offers/requests and R&D requests) published in the TT networks;

- analyze big data to identify potential technologies for TT, as well as to predict market trends and demand;
- monitor patents and publications – AI can monitor publications and patents related to a particular technology to assess interest from the scientific community and industry;
- search for technologies – use machine learning algorithms to search for and compare technologies, patents and research results that can be commercialized or licensed;
- automate processes – AI can help automate routine tasks such as technology and intangible asset assessment, document management and licensing processes;
- predict risks – analyze risks and possible obstacles in technology transfer using machine learning methods to predict the likelihood of project success;
- improving communication – using chatbots or neural networks to interact with potential partners and clients.

## 2 SERVICES AND INFORMATION RESOURCES PROVIDED BY THE REPUBLICAN CENTER FOR TECHNOLOGY TRANSFER TO INNOVATION ACTIVITY AGENTS

Tasks set for RCTT:

- create and maintain information databases meant for serving clients in the technology transfer sector;
- provide RCTT clients with access to foreign technology transfer networks;
- assist innovation activity agents in development and promotion of their innovation and investment projects;
- train specialists in research- and innovation-related entrepreneurship;
- establish RCTT offices across the country, to create a unified national network of technology transfer centers;
- promote international technical and scientific cooperation and exchange of experts.

RCTT is a consortium with the headquarters in Minsk that comprises [7, 8]:

- 5 regional offices and 30 branch offices at research organizations, institutes, universities, enterprises in Brest, Vitsebsk, Homel, Hrodna, Lida, Minsk, Mahileu, Novapolatsk and other cities and towns across Belarus;
- 98 foreign partners in 23 countries: Armenia (3), Azerbaijan (2), China (25), the Czech Republic (2), Denmark (1), Germany (4), Georgia (1), India (1), Iran (1), Italy (1), Kazakhstan (6), Lithuania (1), Moldova (1), Poland (3), Russia (25), South Africa (1), South Korea (4), Sweden (1), UK (2), the USA (3), Ukraine (7), Uzbekistan (1), Vietnam (2);
- 2 overseas field offices in China.

RCTT has implemented over 400 projects, including over 100 international projects funded by UNDP, UNIDO, CEI, EU, the Swedish Institute, etc.

RCTT experts are certified members of 14 foreign technology transfer networks.

RCTT offers its services to innovation activity agents in Belarus as well as foreign companies and investors.

RCTT has a web-portal [9], with several subject sections and databases such as: "Virtual exhibition of the NAS of Belarus"; "Catalogue of innovation offers by organizations of

the NAS of Belarus"; "New partnership opportunities", to present in real-time offers and requests from RCTT, NATT, AUTM and EEN networks; "Catalogs"; "Manuals"; "Media"; "Commercialization", with subsections "IP auctions", "Investment and venture funds", "Crowdfunding" and "Technoparks of Belarus"; "IP insurance"; "Legislation", covering the laws and regulations applicable to innovation activity in Belarus and foreign countries, and others.

RCTT provide services to more than 250 Belarusian state organizations, private enterprises and individuals. The National Academy of Sciences, Belarusian State University, Belarusian National Technical University are among its clients. In 2003–2024 with the support from RCTT more than 8500+ persons improved their skills in the field of technology transfer at 650+ national and international events (workshops, conferences, exhibitions).

RCTT is the coordinator of the Republican Center for Technology Transfer Network which contains more than 3000 technology offers, technology requests, business offers, business requests, and offers for cross-border R&D collaboration of Belarusian enterprises and organizations.

As of August 2024 the Internet portal of RCTT contains:

- 1120+ cooperation offers from NASB organizations in Russian language and 1010+ in English language,
- 45+ catalogs, presenting services and products of organizations of the National Academy of Sciences of Belarus in Russian, English and Chinese,
- information about 250+ exhibitions, 50+ brokerage events, 210+ webinars and events in the field of intellectual property management, transfer and commercialization of technologies where organizations of the NAS of Belarus took part (will take part) in 2019–2024,
- 50+ educational materials in the field of IP management, technology transfer and commercialization.

## 3 PROSPECTS FOR THE USE OF AI TOOLS IN THE RCTT NETWORK

RCTT plans to use AI tools to solve the following problems:

- automation and improvement of the quality of profile preparation (technology offers/requests, business offers/requests and R&D requests);
- creation of promotion and marketing content to find partners;
- automatic scanning and analysis of Internet resources, scientific publications, patents, catalogs and other data sources to identify competitors and potentially valuable technologies;
- identification of technologies that can be successfully commercialized by matching the proposed technologies and services with market needs;
- determination of optimal product promotion channels and optimization of marketing strategies;
- support of the negotiation process by providing information on market prices, transaction terms, etc.;
- monitoring and management of the commercialization process. After a contract is concluded, AI can be used to track progress in commercializing the technology and identify possible problems or opportunities;
- improvement of communication – use of chatbots or neural networks to interact with potential partners and clients. A

chatbot is created to build a dialogue with the user. It simulates a conversation between real people and can respond briefly to a simple request or construct a complex conversation with a high level of personalization. Neural networks are a type of machine learning in which a computer program works on the principle of the human brain, using various neural connections. A neural network can be either a learning or self-learning system.

As part of the modernization and development of the automated system of information support for innovation activities and technology transfer in the NAS of Belarus (ASIS IATT), commissioned in December 2021 [10], on the basis of which the RCTT network operates, the following work is planned:

1. Analysis, selection and adaptation of AI models for carrying out work aimed at integrating the selected AI models into the ASIS IATT subsystems;

2. Integration of AI tools into the subsystems of the ASIS IATT.

Here are some examples of generative AI tools that can be used when preparing profiles, creating promotion and marketing content, scanning and analyzing Internet resources, and solving other problems:

- a) AI tools for profile descriptions and other texts could be:

- [OpenAI GPT-3](#) or Generative Pre-trained Transformer 3 is a powerful neural network model capable of generating text based on provided contextual data. It can be used to automatically generate technology descriptions, technical concepts, and other text materials;

- [IBM Watson Natural Language Generator](#) is a tool that allows you to automatically generate text based on specified templates and parameters. It can be used to create descriptions of technology features, product specifications, and other technical materials;

- [Copy.ai](#) is a platform that provides a wide range of tools for generating text content, including descriptions, headlines, articles, and more. It can be used to create excellent descriptions of technologies and products;

- [Jasper](#) (Adobe's AI Copywriting Assistant) is a tool that uses AI to generate text that can be used to create technology descriptions, blogs, and advertising materials;

- [ChatGPT](#) by OpenAI is a generative neural network model that can hold a conversation and generate text content based on user input. It can be used to chat with the user, provide information about technology, and answer questions;

- [Writesonic](#) is another AI-powered writing assistant that enables users to generate a variety of content types quickly and efficiently;

- [ShortlyAI](#) is an AI writing assistant focused on helping users generate long-form content efficiently.

- b) There are a number of AI and machine learning tools available to automatically scan, analyze, and identify competitors and potentially valuable technologies. Here are some of them:

- [Scite.ai](#) is a platform for analyzing research articles and academic publications using AI. It allows you to identify connections between studies, evaluate their reliability, and find new technological directions;

- [PatSnap](#) is an AI-powered patent and intellectual property scanning tool that helps you research competitors, identify new technologies, and assess their business potential;

- [Dataminr](#) is a platform for monitoring news and social media using machine learning. It allows you to discover events, trends and competitors that may be important for a specific business or research;

- [Crayon](#) is an online competitor and technology monitoring platform. It uses machine learning to automatically scan websites, social media, and other data sources to provide insights into the competitive landscape and emerging technologies;

- [Cortico](#) is a data analysis tool that uses artificial intelligence to process and classify information from various sources, such as the Internet, news articles, and social media. It can help identify trends, competitors, and new technologies.

Integration of AI tools into the ASIS IATT subsystems will reduce time, labor, and technological costs and improve the quality and speed of preparing profiles, creating promotion and marketing content to find potential partners, and preparing contracts in the RCTT Network.

## 4 CONCLUSIONS

The paper informs about prospects for the use of AI tools in the RCTT Network for reduce time, labor, and technological costs, improve the quality and speed of services provided.

Examples of generative AI tools, that planned to be used in the RCTT Network for preparing profiles, creating promotion and marketing content, scanning and analyzing Internet resources, preparing contracts, and solving other problems are given.

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