INTERSESSIONAL PANEL OF THE UNITED NATIONS COMMISSION ON SCIENCE AND TECHNOLOGY FOR DEVELOPMENT (CSTD)

Geneva, Switzerland
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Contribution by Latvia

to the CSTD 2024-2025 priority theme on "Diversifying economies in a world of accelerated digitalization"

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1. **What are the specific challenges your economy is facing to develop or adapt frontier technologies and AI?**

One of the main challenges in Latvia is the lack of sufficient funding for R&D, as well as the shortage of specialists in the technology sector which affects many countries with vibrant ICT sectors where demand for qualified people outstrips supply. Additionally, SMEs often face difficulties in accessing the latest technologies and necessary expertise. Specific challenge for the adoption of AI in smaller economies such as Latvia is the requirement to develop appropriate language technologies for AI use in local language.

Although since 2012 Latvia State Radio and Television Center has created a broadband optical network in remote and sparsely populated regions, insufficient investments in infrastructure in sparsely populated regions in Latvia that provide access to technologies remains a challenge.

2. **Can you provide successful examples of AI and other frontier technologies uptake in your country?**

R&D projects in AI are being actively implemented in academia, e.g., cancer risk assessment, early diagnosis, and prognosis methods by the University of Latvia, predicted deadlines for cases in judicial administration by the University of Latvia, interregional project in geographical information systems for digitalization and AI by Latvia University of Life Sciences and Technologies and others.

Latvia has one of the most secure real-time e-signature and identity verification tools in the world. According to Data of Central Statistical Bureau of Latvia (2024, June) 70% of the population have used electronic identification (e.g. eID, eSignature, authentication via internet banking, etc.) in the 2023, providing access to online services in the last 12 months, and this number continues to grow every quarter. Since 2020, the number of eSignatures per year has increased more than 6 times. e-Identity verification with qualified eSignature tools has increased almost 8 times.

In Latvia there are many active companies that are active in AI area. One successful example is company "Tilde", which has developed artificial intelligence solutions for natural language processing, including language technologies for Latvian language. These technologies are used in various sectors, including public administration and education. Company "Tilde" has recently won the European Commission's Large AI Grand Challenge, attracting a 250 000 EUR monetary prize and 2 million GPU hours on the supercomputer LUMI, to develop a large language model for European languages.[1] In 2023 company "Tilde" and Latvia State and Radio Telecommunications Centre have created the world's first telephony bot "Signe" (AI solution) that communicates in Latvian.

Also other Latvian companies offer AI-based solutions, such as an integrated AI language model with a learning assistant by "WeAreDots", AI-assisted water quality monitoring by "Waterson Technologies", AI-assisted traffic analysis by "Latvian Mobile Telephone" and "Fyma", AI-

[1] More info: https://eng.lsm.lv/article/society/education/28.06.2024-latvias-tilde-wins-major-european-ai-prize.a559655/).

assisted e-commerce content generation by "CopyMonkey.ai" (winner of Emerge conference's challenge), identification of suspicious activities of information system users by "eStepControl", automation of retail security (theft detection, valuable asset protection) by "SMARTRetail", train and freight inspection systems by "TrainINSPECT" & "VehicleINSPECT", AI solution in oncology treatment by "Smartomica".

Individual Latvian state-owned companies use "Microsoft CoPilot" in combination with GIT to do software code review and software code refactoring exercises. This has allowed them to save development time and optimize shared software code base.

State Owned Joint Stock Company "Latvijas Pasts" (Latvian Post Office) is exploring opportunity to use AI to map poorly written or partly recognized addresses by OCR to recognize most possible delivery addresses. This AI assisted process could help the company to reduce need for manual processing of all fallout. In near the company is planning to use AI for planning and forecasting, to process data faster and deliver more advanced decision support for example on where to install next parcel delivery machine to offload postal office delivery options.

3. **Has your country put in place inclusive policies for innovation and economic diversification specifically tailored to diffusion of digital technologies and AI?**

In Latvia, several policies have been developed, such as the Guidelines for digital transformation and the Electronic communications industry development plan, which include measures to promote digital technologies and artificial intelligence.

Guidelines for digital transformation (2021-2027)[2] provide different level opportunities for digital transformation – starting from knowledge, till advanced technological systems. The aim of this program is to create modern living space and stimulate welfare of society and economic growth, by using modern technologies. The program is tailored for all level enterprises.

Electronic communications industry development plan (2021-2027).[3] The aim of the plan is to promote the transition to very high-performance electronic communication networks capable of providing end-users with Internet access services with a data transmission speed of at least 100 Mbit/s in both urban and rural areas.

Moreover, one of sectors in the Latvia's smart specialization strategy (RIS3) is Information and Communication Technologies, where AI is a strategic development sector chosen in cooperation with the private and public sector and academia. Latvia's RIS3 is reflected in most R&D&I support programs.

The Ministry of Environmental Protection and Regional Development of the Republic of Latvia (VARAM) has established a center in every inhabited area in Latvia where residents through digital devices can access the most requested state and local government services, as well as receive remote consultations for special cases.

The Parliament of Latvia (Saeima) is currently discussing regulating the use of AI, particularly with respect to responsible use and disinformation risks, and has created an expert working group on AI regulation.

4. **Do you have examples of policy instruments in place to favour the diffusion of frontier technologies in the economy and targeting specific sectors?**

In 2010, a programme for national digital competence centres was launched, bringing together members of the academia and industry. At the moment there are eight competence centers in Latvia, one of whose tasks is to support innovation development and the diffusion of frontier technologies.

[2] https://www.varam.gov.lv/en/media/34965/download?attachment

[3] https://likumi.lv/ta/id/327586-par-elektronisko-sakaru-nozares-attistibas-planu-2021-2027-gadam (in Latvian)

These centers are widely used by industry in cooperation with academia. One of the competence centers is dedicated to the IT sector. Founders/members of the competence centers are leading academic ICT institutions – the University of Latvia, Riga Technical University and Ventspils University of Applied Sciences. Industrial membership includes leading companies in telecommunications and ICT, such as “Tet”, “RIX technologies”, “Tilde” and others.

Latvian Investment Development Agency (LIAA) has developed an innovation voucher program aimed at strengthening cooperation between business and science, which provides funding for SMEs to implement new technologies and innovations, particularly in the IT and manufacturing sectors.

Recognizing the rapidly growing importance of AI in both economic and security aspects, we have planned to establish a National Artificial Intelligence Center in Latvia. The primary focus of this center will be the development of competencies and knowledge to facilitate the broader application of AI solutions, with a particular emphasis on national security and the growth of the knowledge economy. This center is planned to be established based on the collaboration of three scientific universities: Riga Technical University, the University of Latvia, and Riga Stradins University, combining the resources and personnel of this consortium of universities.

Latvia State and Radio Telecommunications Centre provides free of charge the secure eSignature integration technological platform for merchants, creating competitive and equal conditions for small and medium-sized companies. The use of all tools is free for all citizens, which prevents discriminatory conditions.

Latvian state eSignature web page meets 95% of the accessibility requirements for people with different needs, like mobility issues, sight and hearing issues and perception difficulties. On 28.06.2025 the regulation on "Accessibility requirements for products and services" will come in force. It will improve access to services for different population groups.

5. **Has your country put in place mechanisms to strengthen industrial capabilities through partnerships among different stakeholders (e.g., university-industry, or private-public)?**

In Latvia, a robust system has been established to enhance industrial capabilities, with key mechanisms including innovation and technology development support programs, industry associations, competence centers, clusters, public-private partnerships, and EU-funded initiatives.

Several of Latvia’s R&D investment programs are designed to foster university-industry collaboration, including a programme on high-level digital skills in quantum technologies, language technologies and high-performance computing.

The 28 Latvian companies with state and local government capital have united in the State company Innovation initiative, with aim to strengthen the culture of innovation in state companies, thus promoting the transformation of Latvia's economy, productivity, sustainable investments and stimulate export. Every year, the initiative determines the priority issues that are implemented during the year. The central issues of the 2024 initiative are: to promote legislative changes to encourage innovation in companies; initiatives to share experience and best practices; promotion of cooperation between companies and the academic sector.

6. **How can international cooperation support the uptake of new technologies and the development of technological capabilities in your country and ensure that industrial policies will benefit all and do not worsen inequality?**

International cooperation enables Latvia’s industry and research institutions to access the latest technologies developed abroad, fostering the exchange of knowledge and skills. Moreover, collaboration in research and development projects with international partners allows Latvia to

pool resources and expertise. This not only accelerates the development of new technologies but also ensures that research addresses diverse needs and perspectives, thus creating more comprehensive and inclusive solutions. At the same time, it helps bridge the technological gap between different regions and sectors in Latvia.

State Owned Joint Stock Company “Latvijas Pasts” (Latvian Post Office) has indicated that participation in International Postal Corporation and International Postal Union raises awareness about existing regulations for postal services worldwide, allows to share business trends, needs and insights covering Maritim, Avio, roadway, train cargo services to adopt company’s internal processes and maintain technology fit which is required for information sharing and reporting.

7. **What can do the UN CSTD to support an economic transformation that enhances your country productive capabilities and foster an inclusive digital transformation?**

CSTD should continue to serve as a platform that facilitates information and best-practice exchange. In digital transformation context CSTD could focus on stimulating discussion on technologies, policies and legislation that promote innovation; ways to improve efficiency in the state sector via use of digital technologies; identifying potential threats posed by the AI tools and ways to mitigate them.