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Contribution by Latvia

to the CSTD 2019-2020 priority theme on “Harnessing rapid technological change
for inclusive and sustainable development”

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**UNCTAD request for inputs to the CSTD 2019-20 priority theme on
“Harnessing rapid technological change for inclusive and sustainable
development”**

Frontier technologies present an immense potential for enhanced economic growth and prosperity. At the same time, they might pose challenges in terms of inequality, uneven distribution and unemployment. Government has a role to play in creating the ecosystem that fosters development of frontier technologies, whilst considering possible negative consequences. In view of rapid development of technologies, government has to play supporting role by setting direction, basic principles as well as ethical guidelines. Policy makers should involve private sector, academia and other stakeholders in policy making process, making full use of possibilities that data sharing, re-use and cross-border data flows can provide.

Government of Latvia has adopted several policy documents to define framework conditions for development of innovations, including on frontier technologies, namely the Guidelines for Information Society Policy for 2014 – 2020, Guidelines on National Industrial Policy on 2014-2020, the Science, Technology Development and Innovation Guidelines 2014-2020 and the Guidelines for Science, Technology Development, and Innovation 2014-2020. The overarching principles are defined in the Sustainable Development Strategy of Latvia until 2030 that aims at fostering innovative and efficient economy, sustainability of natural resources and investments into human resources. Latvia is in process of defining objectives of its future digital policy with a full respect to commitments regarding sustainable development and inclusion.

Most recently, Latvia has been working on its Artificial Intelligence Strategy. It fits into efforts to create the right ecosystem for promotion and development of AI. It is expected that the Strategy will be adopted by the government this autumn and will include several lines of action, such as education and science, integration of AI in public service, legal framework and necessary financing, etc.

At the same time, AI has been evolving in Latvia already for decades. Virtual AI assistants are used in public institutions, for example, the Enterprise Register is using the virtual assistant to serve customers and the Rural Support Service uses the virtual assistant to check whether the recipients of aid have not been convicted. The efforts are ongoing to establish a unified virtual assistant platform for public administration.

AI and user-specific machine learning are most advanced in such areas as:

- a) Machine translation - *Tilde* is a recognized European player and a *Microsoft Bing* translation partner;
- b) Biometrics - *Squalio Cloud Consulting* has developed an artificial intelligence-based traffic flow management system. Primary applications: traffic safety, national security and mobility solutions;
- c) Medicine - AI and user-specific machine learning for medical smart devices (Institute of Electronics and Computer Science), genetic engineering (University of Latvia);
- d) Machine vision in transport, manufacturing and other sectors – (*Squalio Cloud Consulting* for transport and manufacturing, *Kleintech Software* for transport);

- e) Chatbots - integrated language technologies, such as speech recognition for customer service, both in the private and public sectors (*Tilde* chatbot solutions);
- f) Fraud detection solutions - (*ABC Software*);
- g) Robotic solutions for national security - (Riga Technical University).

Implementation of AI based solutions in medicine has been started in Latvia. A good example of an initiative which is supported by the public funding and is targeted at the less advantageous groups of society is a pilot project on the use of AI technologies in diagnostics of cancer. In the framework of the pilot project a risk assessment, early diagnosis and forecasting techniques for lung cancer will be developed on the basis on large data analysis. A pilot project will be implemented with the support of the Latvian Investment and Development Agency. There are around 77 thousand cancer patients in Latvia and about 1,000 new cases are diagnosed each year. Doctors acknowledge that treatment is more effective if the cancer is detected as soon as possible. If successfully implemented, the pilot project could provide basis for creation a genomics centre in Latvia.

As regards initiatives directed to youth, in order to develop engineering minded studying, Riga Technical University in 2015 established the Engineering High School (EHS). Very quickly, it has become one of the leading high schools in Latvia. EHS is the first Latvian general secondary education institution that has been established by a university and in collaboration with private sector. It offers a general secondary education program in mathematics, science and technologies. It provides opportunity for students to work in laboratories. The industry's leading researchers are invited as guest lecturers to EHS.

Further information:

Riga Technical university innovation and technology center:
<https://www.rtu.lv/en/science/rtu-innovation-and-technology-transfer-Centre>;
inovacijas@rtu.lv

Quantum Computing Center at the University of Latvia: <http://home.lu.lv/~df/quantum/>

Squalio: <https://squalio.com/>; squalio@squalio.com

Tilde: <https://www.tilde.com/>; tilde@tilde.com

Riga Technical University Engineering High School <http://www.izv.lv/?lang=en#top>