Program of the workshop on artificial intelligence, digitalization and automation impacts in the (near) future

January 23-24, 2019

Hotel Loft, Bratislava

Experts presenting at the workshop:

- Marieke Vandeweyer, OECD Skills and Employability Division
- Stephan Vincent-Lancrin, OECD senior analyst at the Center for Educational Research and Innovation (CERI)
- Nirmal Mukhi, R&D on applying AI to Education, IBM
- Ondrej Socuvka, Google EU Policy Manager
- Maria Bielikova, the dean of the Faculty of informatics, Slovak Technical University
- Peter Bilik, Anasoft
- Peter Hubinsky, National Center of Robotics, Slovak Technical University
- Marek Mikolaj and Vladimir Kastier, EY
- Marek Havrda, GoodAI aiming at developping general artificial intelligence, former adviser to the Czech Minister of Education
- Lucia Sicko, Chief Learning Officer Pixel Federation
- Martin Martinkovic, Smarter Universities and Skills of the Future Consultant, IBM
- Ivan Juras, expert on neurophysiology and education
- Roman Baranovic, director of Narnia elementary school, former Academic program manager in Microsoft
- Jan Paulech, Tech Sales Manager, Microsoft

23 January 2019

- **9.00 – 11.45 Landscape of changes in education from an international perspective** - ***Stephan Vincent-Lancrin***
    - Comments on AI in education ***Marek Havrda***

11.45 – 12.30 lunch

- **12.30 – 14.45 Landscape of changes on the labour market from an international perspective** - impact of the discussed topics on the labour market, prospects of Slovakia – why is Slovakia the most threatened by automation among all the OECD countries? new requirements for skills, jobs that will be needed and those that will disappear, lifelong learning needs; how will employment be organized in terms of length of contracts with one employer? increase of multiple contracts, flexible working time and space, new forms of work... ***Marieke Vandeweyer***
    - Comments on AI ***Marek Havrda***

14.45 – 15.20 coffee break

- **15.20 – 17.00 Robots in production and in services - *Peter Hubinsky*** - robots in traditional (industrial factories) and less traditional (services) areas of work, workers replaced by robots or cooperating with robots; reasons to introduce robots (higher financial efficiency, PR, elimination of manual labour…)

17.00 – 17.20 coffee break

- **17.20 – 18.20 *Nirmal Mukhi***, on the research in the area of applying AI in education

19.30 dinner **(Venue: Restaurant Savage Garden, Námestie Slobody, Bratislava)**

24 January 2019

- **9.00 – 10.45 Applications of AI, digitalization and automation for labour market –** what type of jobs and tasks will be performed by computers?:
  - ***Ondrej Socuvka***
  - ***Marek Mikolaj and Vladimir Kastier*** use of AI in financial processes and the need for change in education. Impact of AI on skills of Shared Services Centres (SSC) employees. SSCs employ a substantantial part of the Slovakian workforce.
  - ***Martin Martinkovic*** skills of the future - what are they? Should we rely more on education outcomes or teaching & learning principles? Do we need a different approach for different age groups?

10.45 – 11.00 coffee break

- **11.00 – 13.15 Applications to education** – methods of teaching and learning – *what are the limitations of machines? What conditions need to be in place so that we can introduce machines (e.g. ability of teachers to co-work with the computers, sufficient teaching content in Slovak or good knowledge of English, cost of machines and equipment)?*
  - ***Lucia Sicko*** use of gaming as a method for teaching and learning (immediate feedback, setting tasks that are not so easy as to bore students, and not so hard as to discourage, but enable them to both win and experience happiness from them), a few words also about augmented and virtual reality;
  - ***Maria Bielikova*** (opportunities: individualization of education based on the needs of students, aided by machine learning; the new role of teachers when computers take on teaching tasks – teaching skills that computers will not be able to teach, and what will be necessary to complement machines on the labour market, such as critical thinking, communication, cooperation, creativity etc.; use of digitalization and AI for support processes such as providing feedback to students, schools management and administration);
  - ***Martin Martinkovic*** How a cognitive system helps to improve the learning experience. How IBM is driving education forward (Teacher Advisor, Virtual Tutor);

- ***Jan Paulech*** Democratizing AI - How Microsoft's AI platform and tools are shaping the future of students, young employees and professionals;
- ***Roman Baranovic*** The role of new technologies in schools administration and management;

13.15 – 14.00 lunch

- **14.00 – 15.30 *Ivan Juras*** Human learning is a lifetime process. It evolves through the development of an individual as a result of developmental processes in the functioning of the nervous system, including the brain. Neurophysiological and neuropsychological findings suggest that technological progress often brings about a negative, sometimes even a destructive impact on different functions of the organism and consequently on wider society. We will discuss different aspects of this issue, and will try to explain why technology sometimes acts harmfully against human biology.

Prior to the workshop:

22 January 2019

Venue: MESA10, Račianska 71, Bratislava

16.00 – 19.00

- **Introduction to AI, digitalization and automation for Learning Makes Sense team:** definition of basic concepts such as machine learning, deep learning, neuron networks; limitations of technology (for now) – e.g. need for certain structure and amount of data for machines to learn; what type of activities can machines already perform and will be able to perform soon? – ***Peter Bilik***

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