

Automation and AI - Opportunity or Threat for Slovakia?

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Today, automation is no longer a futuristic blockbuster fantasy. The McKinsey Global Institute has estimated that by 2030 up to 375 million people (14% of the global workforce), could have their jobs automated away. This means that traditional assembly lines may no longer provide countries like Slovakia with the competitive edge they used to.

Automation as a risk

Automation and artificial intelligence are already changing the way people live and work. From intelligent voice assistants, autonomous vehicles, deliveries done by drones to automated factories in combination with sharing economies, many human-intensive tasks are becoming less time consuming or completely replaced by advanced technologies.

For countries with a strong manufacturing base, this may pose a significant challenge. OECD's Policy Brief on Future of Work published this year reveals that Slovakia, of all OECD countries, faces the highest risks in terms of jobs potentially lost or changed due to automation and artificial intelligence. This is not necessarily a doomsday scenario. Similar to ATMs doing the work bank cashiers used to do; complex robotic systems will replace a proportion of workers in manufacturing. Some jobs will be lost, new ones will be created. The key challenge coming along with automation is ensuring that the market adequately reallocates and re-skills their human resources and new stimuli for growth are created.

A more complex approach which brings academia, R&D institutions, technology start-ups and industry together is necessary to attract a new generation of knowledge-intensive opportunities for further economic growth.

More patents per capita

The sharing economy in combination with autonomous

driving technology will likely reduce the global demand for cars in the upcoming years. Today, Slovakia produces most automobiles per capita – a little over one million per year. Any significant decrease in demand for cars would not go unnoticed. Therefore, the country needs to find something else to excel in. Having more patents per capita sounds good and happens to be very close to the crux of the problem.

Similar to assembly lines, manufacturers establish their R&D centers where the best and affordable talent is. Therefore, to capitalize on automation in countries like Slovakia, more resources and effort need to be dedicated to maximizing research and innovation capacities. This is a stepping stone in transitioning from an economy that only assembles and ships to an economy that develops new innovative products and services with high-added value.

On top of that, the clustering of the worlds of academia, start-ups and industry can yield synergistic effects, helping aggregate greater and more advanced talent and research base. In turn, these elements will help attract investors who will prioritize Slovakia over other countries due to its research potential and human capital, not only for having an affordable and flexible workforce.

Formation of an environment where universities and research institutions are working closely with industry and new technology start-ups is incremental in

the process. Universities and researchers want to conduct world-class research and industry is looking for breakthrough commercial solutions. Where industry and start-ups may benefit from exposure to the best scientific talent, researchers may benefit from more private funding.

Underfunded opportunity

With below 1% of GDP being invested into R&D annually, the underfunding of Slovak universities and research institutions is the most obvious hindrance. The current state is not only a consequence of negligence from the government; the problem is on both sides of the fence. Both government and the private sector need to fund research more generously.

Public money, when available, is often allocated unwisely. For example, in the previous programming periods, a considerable amount of funding, mostly from structural funds, was invested into new research infrastructures. However, a very limited amount of resources was allocated to ensure long-term sustainability, scientific excellence and commercial potential of research. Without a more systematic and strategic approach in public funding of R&D, particularly in terms of longevity, flexibility, and reliability of funding, a financial injection from the government may yield only limited results.

When it comes to private funding, on one hand, industry and corporate players need to consider investment into

the local R&D and education sector as a business opportunity and an investment into long-term competitiveness, rather than a mere branding or CSR opportunity. On the other hand, universities and research institutions need to open themselves more to collaborations with the outside world.

Reconciling disconnection

The commitment to R&D collaboration with research institutions and universities among large corporate companies is just the tip of an iceberg. It must be preceded by internal change in corporate culture, understanding of new business methodologies and commitment to an innovation agenda. Otherwise, investment into research and innovation may be reduced to CSR activity with little impact. Similarly, universities need to find a way to view corporates and start-ups as long-term strategic partners and customers.

The disconnection between the worlds of research and industry can be reconciled by committing to more frequent collaboration and gradual clustering of activities. This does not happen overnight, and it is ok to start small, with pilots that will help set benchmarks for more systematic solutions. From small-scale pilots like hosting students working on their theses, working on proofs of concepts with industry and start-ups, more opportunities for networking and exchanging of ideas, supporting innovative start-ups, to sponsorship of doctoral programs or collaboration on international research projects, there are plenty of formats for collaboration.

The automobile sector in Slovakia may be the best platform to connect the dots. With strong research base in material science and ICT and some of the most advanced automobile production plants in Europe, refocusing on the number of patents, rather than the number of cars produced may not be such a difficult task after all.