

CHALLENGES OF DIGITALIZATION FOR UKRAINIAN INDUSTRIAL ENTERPRISES

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The development of the digital economy and society of Ukraine is a crucial factor for the success of not only all reforms, but also Ukrainian business on the world stage. Ukraine is an important player in the global digital market, but unfortunately, solely as an exporter of IT services and brains. High developed traditional sectors can be a good basis for providing elements of digitalization. For Ukraine, machine building is one of the most priority and export-oriented industries, where it already has world recognition.

Industry 4.0 or Manufacturing IoT systems connect the components of a production process in a factory. Their purpose is to enable “smart manufacturing”. In smart factories, cyber-physical systems monitor physical processes and make decentralized decisions. Via their IoT connection, these cyber-physical systems can communicate and cooperate with each other and with humans in real time. Connected devices include manufacturing equipment and robots.

The concept of i4.0 is based on linkage of virtual and physical parts of business processes along a supply chain. The virtualization is gained by Internet of Things (IoT), Internet of Services (IoS) and Internet of people (IoP). There are 3 main pillars (technology, management, social aspect) that that have to be well established similarly in both a company and a country. I4.0 is not solely based on automation. It can go hand in hand with lean and help to achieve additional benefits where traditionally low investments measures of lean cannot enable further process performance improvements [2].

Industry 4.0 readiness is considerably greater in western and northern Europe than in other parts of Europe. As the founder of the movement, Germany scores particularly high. Combining readiness with the importance of the manufacturing sector reveals four types of European markets (table 1) [2].

We have analyzed the objectives and main results of industrial policies at Belgium, Czech Republic and Poland.

The Belgian federal system is highly decentralised in policy making, in particular regarding competences for innovation and industrial policies. The successive state reforms aimed at a devolution of most of these competences to the regions as main policy level, avoiding hierarchy.

As result the federal and regional governments have complementary competences and act as direct interlocutor with the EU on those competences. ‘Digital Belgium’ is an initiative of the Belgian Federal Government, launched in April 2015, to boost the digital economy and expand prospects for growth and jobs. There is an important (generous) tax deduction mechanism for innovation (in 2016 the income deduction for patents was extended to software and other IP); also deduction for R&D wage-cost; investment allowances. The tax reform of 2017 will lower company revenue tax rates and increase deductions for investments [3].

Průmysl 4.0 (Industry 4.0) is a national initiative aiming to maintain and enhance the competitiveness of the Czech Republic in the wake of the Fourth Industrial Revolution. The goal is to prepare not only the industry but the whole society for the economic and societal changes related to the fourth industrial revolution. P40 has a wide focus on the creation of business and social environment, in which the Czech economy can reach its full potential. [1].

In Poland the Future Industry Platform was announced as part of the Responsible Development Plan (‘Morawiecki Plan’) by the Ministry of Finance and Development in 2016 [9]. Providing industrial financing over a 25-year period, the Morawiecki Plan pursues an agenda of reindustrialisation through new partnerships, export-oriented support measures and comprehensive regional development. With a total planned investment of €235 billion over the next 25 years, the Plan seeks to unleash the potential of the economy to achieve development that improves the quality of life in Poland [4].

As about reality of Ukrainian enterprises, our country has a strong positions at manufacturing industry, which could make them promising Industry 4.0 markets. However, these industries continue to focus on traditional manufacturing and are not ready for digitalization.

On January 17, 2018, the Cabinet of Ministers of Ukraine during its regular meeting the concept for the development of the digital economy and society of Ukraine for 2018-2020 was approved. According to the plan, within the next three years, the government will modernize digital infrastructure, promote the development of Internet technologies and provide incentives for high-tech projects. The roadmap aims to cover 80 percent of the Ukrainian territory with broadband Internet by 2021 and carry out the digitalization of such sectors as education, medicine, ecology, infrastructure and transport. Today, thanks to the digital economy, 22% of world GDP is created, and in China - 30% of its GDP (\$ 3.4 trillion) [6].

A case of successful digitalization of domestic machine-building enterprise is represented by state enterprise “FED” (Kharkiv) [7]. In 2011,

the company launched a large-scale project on the implementation of an automated system for planning, accounting and analysis of Enterprise Resource Planning (ERP) business processes. And in 2013, FED launched a new project for the implementation of information technologies. Digital transformation of the business using the elements of Industry 4.0 helped the enterprise to increase the capacity of the equipment and improve delivery time. The first results of implementation were obtained during the year. Stability and reliability in terms management already then allowed the enterprise to guarantee the fulfillment of new orders from the world's leading aircraft manufacturers in the amount of more than hundreds of millions of dollars. [7].

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