

FOURTH INDUSTRIAL REVOLUTION CREATING THE FUTURE



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The accelerating pace of changes, driven first of all by the digital revolution and the Internet, is one of the most prominent and undeniable features of today's world and economy. As a result, there is an ongoing change in the global civilisational paradigm, a change in which the industrial civilisation is being squeezed out by a post-industrial one. The latter, still not properly defined, is called a knowledge-based economy, a term which is probably quite inopportune. In publications on this topic, the authors point out that our civilisation is now at a turning point, or turning points if one takes into account differences in the development stages of individual countries. In developed countries, this means transition from an industrial to post-industrial civilisation, which is still not sufficiently studied or defined and which is called in different ways (knowledge civilisation, digital civilisation and so on). The dynamism of the transformation is so great that the changes described by A. Toffler in his famous "The Third Wave," brought about by computerisation, are now history – a distant past. The present day is nano- and biotechnology and further "new waves" driven by progress in robotisation and artificial intelligence. An opinion expressed many years ago by outstanding Polish journalist



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Session II – Economic realities

Opportunities, threats and challenges related to objective technological, social, political, demographic and consumption trends.

Session III – Economic regulation

The role of institutions, the state, economic policy with particular emphasis on macroeconomic stability, supranational organisations, self-governing economic bodies and organisations, works councils and trade associations, microeconomic efficiency.

Session IV – Culture and economic education

Relations between economy and culture. The ethical dimension of business operations and corporate social responsibility.

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Ryszard Kapuściński is gaining in importance and topicality. He said that these days “the past does not become history, it immediately becomes archaeology ... with which we no longer have any emotional connection. It is a great weakness and misfortune of contemporary man. He is unable to anchor to history because past events disappear from his consciousness.” Futurologist Kevin Kelly has now come to a similar conclusion. In his book with the revealing title “The Inevitable. Understanding the 12 Technological Forces that Will Shape Our Future,” he forecasts that most of the technologies that will come to dominate the functioning of economy and society 30 years from now have not been invented yet. As a result of the unprecedented dynamism of change, “we live in the times of ‘becoming’ and we are all becoming newbies.” The “volatile world” described by Grzegorz W. Kołodko more than a decade ago is going to gather pace even further. The world is now on the verge of the Fourth Industrial Revolution (Industry 4.0), which involves the development of artificial intelligence combining physical, digital and biological potential. Industry 4.0 (Industrie 4.0) is a notion coined in 2011 by German high-technology specialists: H. Kagermann, W.-D. Lukas and W. Wahlster, and popularised by Klaus Schwab, the founder and executive chairman of the World Economic Forum in Davos. The steam engine, electricity (electric bulb) and computer are the symbols of the three previous industrial revolutions. Meanwhile, the symbol of the fourth revolution is artificial intelligence, which combines the physical, digital and biological world.

Sharing economy, social networks and the Internet of Things are developing thanks to the Internet. New forms of business activity, unknown just a few years ago, are appearing. They are based on network relations between producers and buyers, relations which do not require the producers to engage their own manufacturing resources. What until recently could be regarded as paradoxical is becoming the new normal because the digital revolution continues to create new phenomena, shaping a new economy and its actors. The incredibly fast pace of change is more and more often too rapid for us to get ready for it in advance. Relations based on the ownership of production resources are being replaced with relations oriented at access to them. This is coupled with a fall in marginal costs, almost to zero, due to the development of digital technologies. Therefore, “technology proposes, humanity uses.” But there are many signs indicating

that it is not always done in a socially beneficial way, despite the growing resources of knowledge and information. In many cases, we have to do with a dichotomy of knowledge and wisdom. In its forward race, the world is visibly unstable, which is reflected in various kinds of deep global imbalances. These include in particular income disparities resulting in the risk of social revolt and other inequalities leading to social exclusion, a world of arrogant consumerism, on the one hand, and pockets of poverty, on the other, a world of technological progress and a world of ecological degradation.

The growing pace of change and the volatility of the contemporary world is translated into the widening of areas of uncertainty in socio-economic life, including difficult challenges faced by business owners, managers, partners, employees and other stakeholders. The primary challenge is the need to deal with this syndrome of omnipresent newbies. A fundamental question arises: Is shaping the future in a rational way at all possible under such conditions, is it possible and necessary to work out long-term development strategies? At the same time, it is also the question of whether the diktat, if not terror, of change typical of contemporary economy forces businesses to succumb to the stormy waves of change. This, however, means a serious risk of drifting and being smashed against the hard rocks of the unknown, unpredictable and often brutal world of business. These are questions about the culture of strategic thinking. Research into the functioning and bankruptcies of businesses shows that they approach this issue in very different ways, which has an impact on their fate on the market.

However, scientific studies and practice both prove that the most developed countries have the highest level of strategic thinking culture. Studies on the future are being developed intensively in these countries, creating the patterns and basis for strategic thinking, which is useful at individual decision-making levels in the economy and in businesses.

In shaping development strategies, it is important to take into consideration three time dimensions: the past, present and future. Marginalising any of these dimensions has a negative influence on the functioning of businesses. Prof. Krzysztof Obłój, a well-known Polish scientist and management expert, compares the comprehensive approach to the three time dimensions in strategic thinking to a system of gears of different diameters. The system works as long

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as the gears mesh properly. But when one of the gears starts rotating faster or slower the whole system gets blocked. He illustrates in this way the significant interdependence between the past, present and future, pointing to the need to prevent “any of these time perspectives from becoming the only and dominant anchor of the strategy, the only gear in the whole mechanism. This one of a kind journey across time is methodologically indispensable for us to be able to deal in a sensible way with the wide range of economic problems and challenges associated with the Fourth Industrial Revolution. Strategic thinking may be an early-warning “mind-opener.” It is indispensable, the more so as, given the accelerating pace of change, both the future and the present day seem to be less and less clear and often more and more chaotic and difficult to understand, in particular in the situation of information sources multiplying as a result of the development of digital technologies. •