

Achieving Business Continuity in Industrial 4.0 and Society 5.0

Lena Ellitan¹, Lina Anatan²

¹Faculty of Business, Widya Mandala Catholic University, Surabaya, Indonesia

²Faculty of Economics, Maranatha Christian University, Bandung, Indonesia

ABSTRACT

Technology and innovation need to be utilized to help and advance society, not to replace the role of humans. Thus this change is expected to help humans in their daily lives. The characteristics of the two eras are almost the same, including digitalization, optimization and production with customization, automation, interaction between humans and machines, value added services and business, the use of information technology and the wealth of data held. Through the combination and continuity between the industrial revolution 4.0 and society 5.0, it can form a better pattern of social order, so that it can improve the quality of people's social lives. One of the demands of the industrial phenomenon 4.0 and Society 5.0 is the availability of quality data that is always updated. This paper will discuss in detail the direction of change in corporate life from industry 4.0 to society 5.0., The development of the digital economy and the company's strategy to survive to face the existing changes.

KEYWORDS: Industrial Revolution 4.0., Society 5.0., digital economy, competitive strategy

INTRODUCTION

The extraordinary development of technology and information has also had an extraordinary impact on the development of the industry and the life structure of the people. Not many people realize that the existence of industry 4.0 and Society 5.0 phenomena has brought a trend of change at the company level and even at the individual level. To be able to face this new era, special abilities and strategies are needed to prepare for competition. Every business organization strives to be unique so that companies can have a competitive advantage to survive in this era of uncertainty.

The world has experienced four industrial revolutions and four changes in the fabric of society. Starting with Society 1.0 where the pattern of community life depends on human and animal power, and the pattern of community life by hunting (hunting society). With the discovery of steam engines, trains and sailing ships to support the production process, the Industrial Revolution 1.0 and the agrarian society's lifestyle, known as Society 2.0, began. Then continued with the 2.0 industrial revolution marked by the discovery of electrical energy and the concept of division of labor. The social order has changed to Society 3.0, from what was once an agrarian to an industrial society (industrial society). Over time, the development of information technology and the automation of computer-based and internet-based production processes marked the start of the 3.0 industrial revolution. The existence of production technology and information technology that is increasingly advanced to make production costs become cheaper. This development

has again changed the fabric of society into Society 4.0, information society (Natalia and Ellitan, 2019).

Furthermore, the development of camera technology and mobile phone technology has made the industry grow more creative and reached its peak today with digital technology in all aspects of human life. The 4.0 industrial revolution is pushing the automation system throughout the entire process and has become an everyday part, especially in the business world and the social order also began to change towards Society 5.0. According to Raharja (2019), the industrial revolution 4.0 and Society 5.0 are real movements towards increasingly sophisticated information and technology developments. Industry 4.0 is an industry that combines automation technology with cyber technology, including cyber-physical systems, internet of things (IoT), cloud computing, and cognitive computing. Agustini (2018) suggested that the industrial revolution 4.0 was also referred to as an industrial revolution that would change the patterns and relations between humans and machines. Innovation begins with the amount of data on the internet and the use of cloud that changes the industry, ranging from products, production processes, product marketing, to people's lifestyles. This paper will discuss in detail the direction of change in corporate life from industry 4.0 to society 5.0., The development of the digital economy and the company's strategy to survive in the face of existing changes.

THE CHANGE OF LIFE IN ERA 4.0 TOWARDS SOCIETY 5.0

Industry 4.0 is characterized by automation, digitization processes, and various uses of sophisticated tools with

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robotic systems. This progress can not be denied and can not be avoided. Society 5.0 is more directed to the order of social life, where every existing problem can be solved through a combination of innovations from various elements that already existed in the industrial revolution 4.0 (Thames & Schaefer, 2017). Through Society 5.0, development is more focused on humans. Humans as the main subject (human centered society) in controlling the progress of science and technology, not as an object that would be threatened or even crushed by the Industrial Revolution 4.0. Artificial intelligence that pays attention to the human side will transform millions of data collected through the internet in all areas of life.

Society 5.0 refers to six main pillars which include infrastructure, technology innovation, finance, health care, logistics, and AI (Mayasari, 2019). Technology and innovation need to be utilized to help and advance society, not to replace the role of humans. Thus this change is expected to help humans in their daily lives. The characteristics of the two eras are almost the same, including digitalization, optimization and production with customization, automation, interaction between humans and machines, value added services and business, the use of information technology and the wealth of data held. Through the combination and continuity between the industrial revolution 4.0 and society 5.0, it can form a better pattern of social order, so that it can improve the quality of people's social lives. One of the demands of the industrial phenomenon 4.0 and Society 5.0 is the availability of quality data that is always updated. Data is said to be of quality if it meets the elements: Speed and easily accessible, can be accounted for, valid and accuracy and transparency.

The industrial revolution is a change in the way of human life and work processes fundamentally, where the advancement of information technology can integrate in the world of life with digital which can have an impact on scientific disciplines. According to Tjandrawinata (2016), the rapid development of information technology is currently happening automation that occurs in all fields, new technologies and approaches that combine real, digital and fundamental. The concept of this industry was created by Japan which was revealed by the Japanese prime minister on January 21, 2019 due to the rapid development of technology, including the presence of robots with intelligence that are considered to replace the role of humans. This is the background of the birth of Industry 5.0 which can be interpreted as a concept of a human-centered and technology-based society

The concepts of the industrial revolution 4.0 and society 5.0 do not have much difference. The industrial revolution 4.0 uses artificial intelligence while Society 5.0 focuses on the human component. If society 4.0 allows us to access and share information on the internet and aims to reduce total production costs because goods produced in mass quantities are also consumed because they are precisely consumed customer desires. Society 5.0 is an era where all technology is part of humanity itself. The internet is not only as information but to live life.

Output in Industry 4.0, the result of empowering technology and a unique human touch to realize the basic impetus of the market in the future to express themselves, even willing to

pay a premium price to get these personalized products or services. In the process of course there must be a joint awareness of both the government, the business community and the community, ranging from changing negative thoughts and fears to the development of the industry and the paradigm if technology is difficult in addition to improving the quality of human resources, the formation of innovation ecosystems, the application of technological investment incentives, harmonization of rules and Policy. Followed by, empowering MSMEs, building digital infrastructure and attracting foreign investment.

Industry 4.0 has spread throughout the world and the "fourth industrial revolution". Industrial Revolution 4.0. it is also a blend of physical, digital and biological world technologies, which creates new opportunities and influences political, social and economic systems. The fourth industrial revolution changed the modern production system, because with the will of new technologies, including digitalization and robotization, artificial intelligence and the Internet of things (IoT), new materials and biotechnology, this made industrial processes smart and allowed mass customization. According to (Kohlberg and Zühlke, 2015) industry 4.0 enables new areas of implementation through the potential of Industry 4.0 technology such as the application of a robust, flexible and affordable Cyber Physical System or the wide application of Lean Production with various types of production.

Bughin and Manyika (2015) assume that the important impact factor in competition is related to the Internet of Things (IoT) which means that senior managers and company members must act at the system level in order to solve the challenges that come from technological disruption. If the company does not follow the technology it could be that the company will be crushed by the industrial revolution. Application of Industry 4.0 technology has proven to increase efficiency and effectiveness in the manufacturing process, but also in services such as retail, health care, travel and financial services where in all these industries they can keep costs and production levels far higher (Piercy and Rich, 2009).

According to Vasin, et.al (2018), industry 4.0 only focuses on the technological dimension without understanding the meaning and value of the technology. This means that there is a risk of investing in digitalization, assuming that the possibility of increased efficiency and flexibility can automatically occur. Technology investment in the current era can indeed increase the level of company productivity and allow a reduction in the number of employees, because in developing countries most of the biggest costs are in human resources, so if done efficiently the company can allocate resources to company expansion, in addition to that industry 4.0 has a view namely the error rate in humans is still below the level of robotic errors during the production process. The basis for the fourth industrial revolution is the availability of all relevant information in real time by connecting all the examples involved in the value chain. The ability to get an optimal value-added flow according to different criteria such as cost, availability and consumption of resources at any time from the data is also very important.

In Industry 4.0 the role of humans is said to be displaced by technology so to prevent this from happening the fifth

industrial revolution arises. Industry 5.0 must be a link between those who believe in the power of people to create new innovations and those who connect them with new ideas that arise with more complex problems in the global economy. In the future, Industry 5.0 must be the most complete example of a positive attitude towards the future. Industry must be the new competitive advantage of this new society and ideas must be driven by the enabling of modernity, added value, and excellence. Industry must understand that in an open society, where human integration is a signal of a positive contribution to the future, ambition of excellence is very important. In addition, industry 5.0 is different from industry 4.0 where industry 5.0 is more focused on the development of human welfare (Muljani & Ellitan, 2019).

DIGITALIZED ECONOMY

The term "digital economy" was introduced by Tapscott (1996). In 2009, together with Williams he introduced the term "Wikinomics", implying large-scale collaboration underneath, which is based on competitive principles such as openness, sharing and action at the global level (Tapscott and Williams, 2009). Today's digital economy has great potential to promote economic development. The internet "exploded" an established market for goods, services and labor, as well as the principles of functioning of the public sector. Some countries need to take advantage of the current scientific and technological situation in the world economy to ensure a global competitive position in the market, if the State is focusing its development in technology. Thus, the problem regarding the management of the development of industrial companies in the context of reindustrialization and digitalization came forward and became archives.

The intensive development of digital economic society is inseparable from problems in the field of knowledge management (Ellitan & Muljani, 2019). Information and knowledge gained through experience become priority resources, because in experience there are practical and simple sciences that are appropriate for the time and competencies such as innovation, competence, creativity, and cognitive effort become competitive advantages in the market. Therefore, the move from physical to digital economics requires a special approach that is not only found in the industrial and manufacturing sectors, but also in the formation of human resources for the digital economy, by providing education such as seminars, personnel training, development and management of human resources innovative, and talent management.

To face the challenges and take advantage of the above opportunities requires the evolution of business models in general, the possibility of the evolution of Business Models in logic can be identified through a combination of various perspectives, including the value of the product or service offered) The digitalization of the business model consists of several levels namely (committee.id, 2016): The first level is the digitalization of the existing Business Model This is the level of "simple" digitalization of the company's current transactional, managerial and operational processes (within the supplier network, partners, and current customers). The second level is the Digitalization of Downstream Processes Digitalization of company processes in their downstream phase (ie in business relationships and transactions with customers) enables the activation of new businesses, which

consist of new services that can be linked to those that already exist. The third level is the Digitization of Up-Stream Processes This represents a higher level of relationship with the market / customer. While the downstream service concerns the possibility of the customer to directly manage what is before he is supplied, in the up-stream dimension, it means proposing and selling to the customer the possibility to configure himself what he wants to buy. The fourth level is the New Business Model (redesign enlargement) Digitalisation allows and easily supports the possibility of identifying new Business Models that are possible in the environment in which the company operates. The fifth level is the New Business Model (Re-Invention) The level of identification of the new business model previously is still related to the business activities currently carried out by the company in its environment.

COMPETITIVE STRATEGY IN INDUSTRIAL ERA 4.0

The industrial revolution 4.0 towards Society 5.0 poses new challenges, namely how to be competitive so that it can survive, compete, and not be eroded by the times. This condition inevitably "forces" every company, maybe even at the individual level to develop themselves and improve capabilities in all fields (Azhar, 2018). At the company level, starting with a clear vision and mission statement, then translated into strategies and operational plans that can ensure the company's survival (sustainability). The company must understand and update the situation inside and outside the company. This can be accommodated by conducting 3 analyzes, namely: First, analysis of the industry in which the company is located; second, macro analysis (external companies), such as political, economic, demographic, sociocultural conditions, legal aspects, technology, and the third is micro analysis (internal company), according to Michael Porter's theory of industrial strength (bargaining power of suppliers, bargaining power of buyers, threats of substitute products, threats of new entrants, and rivals among existing competitors). These three analyzes are still very relevant to the condition of industry 4.0 towards society 5.0.

According to Geissbauer et.al. (2015) With the development of the 4.0 to 5.0 industrial revolution, there are benefits for Indonesia including labor surplus, medium economic growth, and young labor, because companies also need to balance these conditions with demand-oriented, provide added value, absorb labor, Paying attention to the well-being of the community, workers and partners. In building reliable human resources, education is an important aspect in creating citizens who are reliable professionals and highly competitive. Education is also an effective way as a process of nation and character building, determining the journey and regeneration of a nation. According to Tjandrawinata (2016) in education, the importance of developing more creative and innovative learning models to answer in the era of the industrial revolution continues to grow. Therefore if you want all lines of society to follow the changes in the industrial revolution that occur then it must start from the lowest education to the top.

For the company section, the size of a company that stands is not a guarantee in its development, but the agility and speed of the company which is the key to success in achieving victory quickly and optimally. So if a company that wants to get maximum results, be it a large company or a small

company must do it quickly because in this era of competition is the main thing in achieving a success. not only competition but also how the company manages and uses the technology it uses.

Strategies undertaken by companies in dealing with industry 4.0 and 5.0 include (Desra, 2019): First is the Industry 4.0 supply chain strategy. Through this strategy the company is driven by data and information where insights gained from this data can be practiced to streamline processes at various touch points throughout the value chain. Cloud technology and its ability to hold large volumes of data with multiple access points to improve communication and collaboration throughout the supply chain. With a large amount of storage space and capacity to view and manage data in real time, the integration of cloud technology is not only a major advantage in embracing Industry 4.0, but also an important component of the future of supply chain management. The second is to embrace the Internet of Things, when companies rely on communication between machines and systems. The ability of systems and solutions to work together with each other not only encourages greater productivity and accuracy, but also provides greater visibility into the company's overall supply situation. Third, the company is demanded to be able to carry out sophisticated analytic integration. The ability to optimize programs and production processes is an important driver for companies in maintaining high levels of productivity and efficiency, and sophisticated analytics give planners and managers data driven insights to make decisions based on information about planned planning and production program strategies.

The next strategy is to increase customization where the company does not only have a single product that can be successful and survive in the current conditions. Planners and managers need individual solutions to face challenges. Industry 4.0 - in addition to production principles such as adaptive manufacturing to enable enhancing the company's customization capabilities to meet the specific needs desired by customers, because the company will waste large RnD costs if the product created is less needed by the customer. Companies are required to be able to improve communication because Industry 4.0 relies heavily on coordination and communication platforms or smart planning solutions, planners and managers are better able to collect, sort, share, and collaborate on data sets that can be followed up to improve efficiency and productivity. With the flow of information that goes well, the activities of a company can avoid miscommunication and wrong way in implementing corporate planning. Digitizing a portfolio of products and services is the key to the company's continued success. A product that is mechanically perfect will no longer be enough to successfully withstand international competition.

CONCLUSION

To make a company survive in the current era there are two different strategic approaches that can generally be chosen, namely: First is "Leading": Companies act quickly when taking risks to use digitalization opportunities early on: joint development of Industry 4.0 and 5.0 concepts but things this is combined with a higher risk than the follower because they must first develop and implement new solutions but have not been tested. Second "Flexible": The company is very concerned about the surrounding environment and

strategies that are made to follow the existing environment, but still focus on the main competencies that are owned by the company. Both of these strategic approaches are carried out by means of cloud technology, embracing the internet of things, sophisticated analytical integration, product customization, improved communication, digitizing products and services, and horizontal collaboration and following the development of augmented reality. So that companies can survive and achieve success in industry 4.0 and ahead of this industry 5.0.

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