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INDONESIAN COMPANIES LEARNING CULTURE ANALYSIS IN INDUSTRIAL ERA 4.0

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Abstract: Business competition in the current industrial era 4.0 requires each company to have a strategy in managing their company to be able to survive and compete with other companies, as well as in Indonesia. In connection with the industry 4.0 era, companies need to consider the importance of a culture of learning within the company, so that the work process runs more smoothly. They have to provide some facilities in order to support the learning process for their employees. In addition, employees must have the initiative to learn how the information and technology revolution can improve performance in order to be able to increase the country's net exports. The purpose of this study is to identify how the culture of learning in companies, especially in Indonesia. In addition, through this research also proposes a learning culture that is appropriate to the industrial era 4.0 in Indonesia.

Keywords: Industrial Era 4.0, Learning Culture, Competition

INTRODUCTION

Industry 4.0 combine existing ideas become new value chain, which is contributing in producing innovative products in manufacturing, that involves system connections and things that create self-organization and dynamic control within organization (Ahmad et al., 2018). It also become the era of the transition industry, since the era can empower the role of digitizing manufacturing in the supply network which involves the integration of information from various sources and locations to drive physical manufacturing and distribution (Suharman & Murti, 2019). It also bringing about new requirements for the manufacturing workforces. Therefore, through industry 4.0, it is assumed that the role of technology is very important in the organization and bringing new requirements for the manufacturing work force.

The launch of industrial 4.0 began in 2011, since Germany announced the emergence of a new era in the industrial revolution. Since then, many countries have made several changes

and implemented new policies related to it, so that their industries are able to compete with other countries. Indonesia also made several changes to face the industrial era 4.0, include preparing a 4IR (Four Industrial Revolution) roadmap through the Ministry of Industry. The roadmap involves different stakeholders, such as government institutions, industrial associations, business actors, technology providers, also research and education institutions.

As a first step, Indonesia is committed to strengthening technology in five industrial sectors, that is food and beverage industry, textile and apparel industry, automotive industry, electronic industry, and chemical industry. Those sectors were selected based on an evaluation of economic impacts and implementation of eligibility criteria that included measures of GDP, trade, potential impacts on other industries, investment size, and speed of market penetration. In addition, to anticipate the competition with other countries in industrial era 4.0, it is expected that through the 4IR roadmap can increase the Indonesian growth manufacturing industry to 21 – 26% of GDP in 2030. From the employees perspective, it also predicted that the program will open 7 to 19 millions job opportunities, both in the manufacturing and non-manufacturing in 2030 as a results of the increased export demand.

According Yanuarta et al. (2019), there are problems related to the program, such as high investment costs, complexity in its integration, and lack of support from management. Since the organization equipped their facilities with tools and sophisticated machine, then shall need costs. Related with management support, in terms of system manufacturing development, it needs management support who has a vision in implementing industry 4.0 into the company's working system. One of the management support for employee development is to provide work facilities that can encourage the learning process and information exchange with colleagues, such as technology and information availability. At the end, the manufacturing system becomes more effective and efficient.

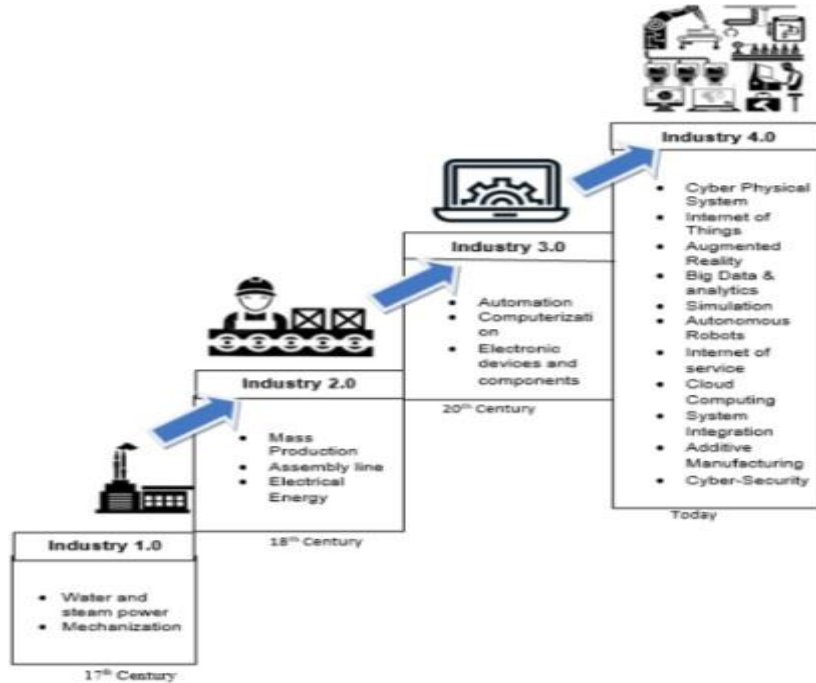
According to Wahda (2017), learning process should be embodied with the organizational culture, so that daily activities of all employees reflects the learning process sustainability. While learning process become habit, then it can be mentioned as a learning culture. Gil and Mataveli (2017) determined learning culture as an openness to new ideas, experimentation and openness to errors, empowerment and participation of employees in decision making and dialogue. Through learning culture, it will encourage innovation which improves the behavior and employee's efficiency and also lead the changes in employee's attitudes and affects the organizational financial and knowledge performance (Malik and Garg, 2017).

However, not every organization realized about the learning culture and its benefit. Therefore, the aim of this article is looking a glance about how important the learning culture in organization, as an effort to improve the quality and employee's ability in covering the competitive in industrial era 4.0, especially in Indonesia. At the next section will be outlined regarding the industrial era 4.0, learning culture and discussion about the correlation between it. As a conclusion, it will explain what needs to be improved to win the competition globally.

LITERATURE REVIEW

Industrial Era 4.0

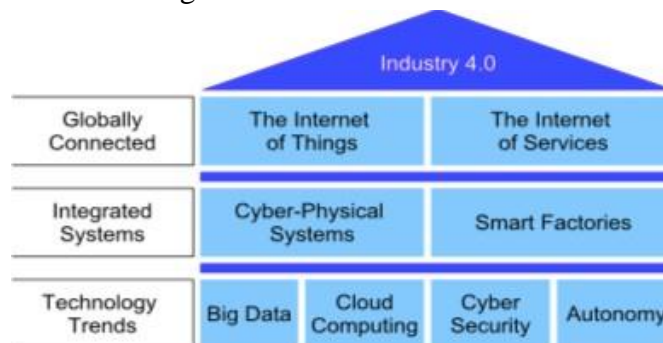
Ahmad et al. (2018) mentioned that industry 4.0 or smart manufacturing depends on the developing technologies, bringing about new requirements for industrial workforce. Means, that role of technology in working process will increase significantly. Industry 4.0 is characterized by flexibility, efficient use of resources and integration of customers and business partners in the business process (Vuksanovic et al., 2016).



Source: Tay et al. (2018)

Picture 1. The World Industrial Revolution

There are some new technologies in industrial era 4.0 such as cyber physical system, internet of things, augmented reality, big data and analytics, simulation, autonomous robots, internet of service, cloud computing, system integration, additive manufacturing, and cyber-security. Flynn et al. (2017) finds that those technologies make industry 4.0 different with previous industrial, such as industry 1.0, 2.0, and 3.0. Thus, industry 4.0 bringing about new requirements for the manufacturing workforce.



Source: Flynn et al. (2017)

Picture 2. A Vision of Industry 4.0

Related to new technologies utilization, Tay et al. (2018) argued that industry 4.0 is being presented as an overall change by digitalization and automation of every part of company, as well as the manufacturing process. The use of technology in industrial can help companies in manufacturing sector to optimize the working processes and significantly boost their internal efficiency. Based on Vuksanovic et al. (2016), in order to achieve this, it will need a digital innovation, and to make it into reality as quickly as possible, then production must become more flexible. At the end, all of this activities will increase productivity and global market competitiveness.

Even though industrial era 4.0 bring some newness and benefits into many parties, Ahmad et al. (2018) stated that it also predicted that the unskilled and semi-skilled worker will be less relevance since there will be no industrial left for many of them within just a few years. However, if employees upgrade their knowledge, skills and competencies in job-related area it will creates new job opportunities for employees. Therefore, people who are employed in companies must be the main driver of changes and innovations related to the introduction and implementation of industry 4.0, because human factor is crucial for the application and the work (Vuksanovic et al., 2016).

Learning Culture

Culture can be defined as the sum total of ways of living built up by a group of human beings and transmitted from one generation to another. To build a learning organization, companies must consciously transform the existing culture into a learning culture, which requires the right leaders, right people, right behaviors, and right resources (Sarder, 2016). In other ways, Schmitz et al. (2014) stated that learning culture also can be defined as a culture oriented towards the promotion and facilitation of learning by its employees. It encourages the sharing of what is learned, aiming at the development and success of the organization.

Malik and Garg (2017) mentioned that learning culture represents an organization's effort to create learning opportunities for all its members. It also leads to changes in employee's attitudes towards their peers, and affects the financial and knowledge performance of the organization. Moreover, according to Wahda (2017), a good learning culture will not only help employees to show high level of performance, but also keep those good employees in the organization.

However, to support learning in working place, organization needs to build a learning climate and culture. Climate and culture are built by leaders and others who learn from their experience, influence the learning of others, and create an environment of expectations that shapes and supports desired results that in turn get measured and rewarded (Marscik & Watkins, 2003). To know better how learning culture can be built in an organization, each leaders or organization itself have to know first about characteristics of learning culture. Rebelo and Gomes (2011) stated there are two characteristics of learning culture, that is:

1. External adaptability, include:
 - a. A safe environment to try out, make mistakes and fail
 - b. Risk-taking and the expectation that innovation is part of the job
 - c. Future orientation

- d. Openness, mainly in terms of communication and information sharing
 - e. Autonomy
 - f. External orientation and customer perspective
2. Internal consistency, include:
- a. Time to experiment, opportunities and time for learning
 - b. Reward learning
 - c. Investment on training
 - d. Leadership committed to learning
 - e. Shared common goals
 - f. Orientation to action and empowerment

Schmitz et al. (2014) mentioned that in order to be competitive, companies need to constantly align adaptation to external changes and integration of internal processes. The emphasis of the learning organization through learning culture is the ability to enable the organization to survive the pursuit of product and profit. Organization that can survive are those that are able to transform their organization into more intelligent and profitable ones, as well as improve their learning capability. An organization that will transform itself according to this new kind of structure will gain greater knowledge, flexibility, speed, power and learning ability (Eisenberg et al., 2018).

Furthermore, Gil and Mataveli (2017) mentioned that to activate the learning culture in an organization, it is necessary to increase the information distribution within organization because information is the key aspects to define and develop a learning culture and move towards learning organization aspects.

FINDINGS AND DISCUSSION

Related to industrial era 4.0 in Indonesia, Suharman and Murti (2019) mentioned that Indonesia is in the nascent countries class, while Malaysia and Singapore are in leading countries class in terms of readiness of technological use in organization. To prepare the industrial era 4.0, Indonesia must be able to prepare all lines of the organization to be able following the changes. According to the Indonesia Industrial Ministry Report (2018), there are some impact of industrial era 4.0 to the Indonesian manufacturing sector, such as:



Source: Making Indonesia 4.0
Picture 3. Impact of Industry 4.0

From the picture above, it is known that industrial era 4.0 brings many benefits not only to the industry, but also to the country also since it can robust the economy. Therefore, learning culture can be used as one of the efforts that can be done by the company. Because demand for high skills employee will increase, then, each company have to increase their employee's capability in daily activities. Beside the increasing utilization of technology in working process, employees in this era are demanded to learn more due to the increasing jobs responsibility.

Besides the impact, Indonesia also launched ten national priorities that have to be prepared for industrial era 4.0, such as:

1. Improvement of goods and raw material flow, through enhancing the domestic upstream material production.
2. Redesign industrial zone, such as build a single nationwide industry zoning roadmap.
3. Embrace sustainability, means Indonesia has to grab opportunities under global sustainability trend.
4. Empower SMEs, there are 3.7 million SMEs in Indonesia that can increase through technology.
5. Build national digital infrastructure, such as advance network and digital platform.
6. Attract foreign investment, engage top global manufacturers with technology transfer.
7. Upgrade Human Capital, through redesign of education curriculum and talent mobility program.
8. Establish innovation ecosystems.
9. Incentives for technological innovation, such as introducing tax exemption and support funding.
10. Re-optimize regulations and policies.

Those priorities will be achieved through every sector collaboration, such as government, business, and education institution. However, if each companies increased their external adaptability, accordance with Rebelo and Gomes (2011) theory about learning culture in the company, such as learning form working mistakes, using more innovation and dare to be fail. Beside that, company must to be more open for communication and sharing information between employees. Also, to increase their quality, each company also have to be more close with their customers.

In addition, every company also have to improve their internal condition. To be prepared with industrial era 4.0, through learning culture Rebelo and Gomes (2011) also mentioned that from the internal area companies must increase their ability through continues learning process. For example, they give their employees more time to learn through workshop and training to improve their working skills. Besides, companies have to be more open in sharing knowledge and experiences between employees within organization. It also need to be consider to give employees reward as they willing to share it to others, so that every member in organization get used to and build a strong learning culture.

CONCLUSIONS AND SUGGESTIONS

Industrial era 4.0 is an era where as the portion of technology in every part working process become large. Since it was launched in 2011, this industrial revolution cannot be avoided by all industry in every country in the world. So it is with Indonesia, as one of the large country in south east Asia also have to increase the capabilities of all resource in order to be ready to face the industrial era 4.0. Besides that, every companies in Indonesia also have to prepare their resource to be more qualified, especially their human capital through learning culture. This article shown that learning culture is very important to build in every organization or companies, because et the end, organization will reach the success in the future through the increasing organizational performance.

In order to acquire more complete result, it is recommended that next research added more theory about learning culture. It is also suggested to use other factors that also related such as human capital readiness and knowledge management implementation in Indonesia to meet industrial era 4.0.

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