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STRATEGIC MANAGEMENT REALIGNMENT IN TANDEM WITH IR 4.0

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WHAT IS IR4.0

IR4.0 or Industrial Revolution 4,0 refers to the current automation trend and data sharing practices in businesses. IR 4.0 is characterized by Internet of Things, Big Data and Analytics, Augmented Reality, Autonomous Robots, Additive Manufacturing, Cognitive Computing, and Cloud Computing (Vaidya, Ambad, & Bhosle, 2018). Strategic management processes involve strategy formulation, implementation, monitoring, and evaluating strategies to achieve company goals (Osborn, 2019). As IR4.0 revolutionizes the business industry, company strategic processes should be realigned with the wave of revolution. This paper determines whether strategic management processes should realign with IR4.0.

The industrial revolution started in the 1780s with steam and water production followed by mass production of goods and automation through the digitalization and rise of information systems. Industry 4.0 is the fourth wave of the industrial revolution that has impacted modern industrial production processes, data flows, control structures, and functional operations (Tay, Chan, Aziati, & Aizat-Ahmad, 2018). The central concept behind IR4.0 is that data, embedded software, and the internet should be able to drive intelligent products and machines to create and achieve value. These systems can generate problems such as disruptions of company operations due to network misconfigurations, cyber-threat attacks, and malfunctioning devices or software (Anderson, 2019). However, IR4.0 is not about business technology but a way of rethinking business models.

A study conducted by PwC in 26 countries of different industrial sectors, including the construction companies, defense, aerospace, electronics, forest, and paper industry, the packaging industry reported that one-third of the companies had reached advanced levels of digitalization and IR4.0 integration within their companies. 72% of the other respondents hoped to reach an advanced level of digitalization by 2020 (Geissbauer *et al.,* 2016). Additionally, IR4.0 is expected to create additional revenues of 22.6% and a cut down costs in the manufacturing industry by 17.6%. In Logistic services, the additional revenues by IR4.0 are expected to hit 33.6%, while cost reductions should reach 34.2%. In retail, the additional revenues are expected to rise to 33.3%, while cost reduction should hit 7.8% (World Economic Forum, 2017).

STRATEGIC MANAGEMENT PROCESS

A strategic management process is a continuous management process that encompasses formulation, implementation, and evaluation of activities tailored towards attaining desired goals. These processes guide companies in developing goals and the course of action that should be taken to achieve these goals; they determine where a business is going, how it will get there, and the success indicators that will help a company know when they have achieved their goals. Strategic management processes help companies to maintain a competitive advantage in the market (Sammut-Bonnici, 2015).

REALIGNMENT OF STRATEGIC MANAGEMENT

Businesses in retail, manufacturing, construction, logistics, etc. are implementing integrating IR4.0 systems in their production processes, value-chain management, and supply management (World Economic Forum, 2017). How are IR4.0 systems being used in core business activities? A value-added chain is a set of vertically linked activities that a firm operates on to produce and distribute a product ("Farlex Financial Dictionary," 2020). IR4.0 has influenced the development of new business models that control a product's entire lifecycle in the value chain through connectivity and communication (Vaidya, Ambad, & Bhosle, 2018). They influence global chain configuration by allowing knowledge transfers from developed countries to emerging countries and developing countries (Hernández & Pedersen, 2017). Additionally, connectivity creates new collaborative relationships between companies at different stages in the value chain (World Economic Forum, 2017). IR4.0 transforms value chains of the product's lifecycle through influencing the production of services and goods in the manufacturing industry, which is done through connectivity and communication systems (Tay *et al.,* 2018). Effective integration of horizontal, vertical, and end-to-end engineering integration can lead to the autonomous optimization of a product's service (Tay *et al.,* 2018).

Another application of IR4.0 in business practices is through the Internet of Things**,** IoT. Businesses have to combine locations and governance to define their value chains (Hernández & Pedersen, 2017). Internet of Things allows communication and data sharing across businesses through enabling advanced connectivity of ICT infrastructure and physical objects by detecting and identifying their location through IPv6 addresses (Patel, Patel, Scholar, & Salazar, 2016).

Internet of Services (IoS) is a concept that utilizes the internet to provide services and control a product's behavior. Internet of data is an approach where data is generated, managed, and shared using the internet (Reis & Gonçalves, 2018). Businesses can provide services to consumers' on-demand through a range of digitization services. These services have been used to make data transfers easy and safe. IoT systems in smart enterprises are used to control and assess performance management through IoT software Applications. Devices that are connected through IoT facilitate the geographic distribution of business operations hence increasing the efficiency of these processes and reduce operational and management costs (World Economic Forum, 2017).

Augmented reality promotes reliable reduction in production errors and it increases quality assurance. According to Alaloul Liew, Zawawi, and Kennedy (2020) augmented reality can also help to reduce waste production, which consequently facilitates the significant reduction in environmental pollution and promotes safety production. Furthermore, they have high predicting power and are cost-effective. Augmented reality can also be used to predict a product's performance degradation; this, according to Alaloul *et al.* (2020), can aid in reducing potential errors, consequently minimizing the number of maintenance procedures that ought to be performed for a particular product or service.

Big Data and analytics have played an integral in helping financial firms gain a competitive advantage in the market. The Zurich Life insurance company currently uses Artificial Intelligence and Big Data to help their customers reduce the risk of exposure to business interruptions (Zurich Inc., 2018). This is highly valuable for businesses with complex supply chains. Big Data software helps such firms to create an end to end visibility of their supply chain through mapping, identifying and assessing internal and external data sources to evaluate the extent of dependencies of suppliers and buyers (Mizgier, Kocsis, & Wagner, 2018). The IR4.0 through automated purchases, sourcing, tracking, and inventory modeling has helped to increase visibility across the various supply chains (World Economic Forum, 2017).

A business using IR4.0 can track every product they produce while upgrading and modifying these products after being sold to consumers e.g., software updates. While construction companies have been slow to implement IR4.0, these systems can enhance their competitiveness

in the global industry (Sivah, 2019).They promote an innovative working environment and can improve partner collaboration and influence a sound workforce by influencing innovative work behavior (Sivah, 2019). The integration of IR4.0 into business practices allows employees to control, regulate, and configure resource networks with the manufacturing process. Employees can focus on other value-adding activities, while the IR4.0 systems take over routine activities.

CONCLUSION

To sum up, firstly, IR4.0 is making a major transformation in various businesses in the world. As more businesses integrate IR4.0 into their business practices, business leaders and managers should realign their strategic management processes with the industrial revolution. Secondly, these strategic management processes should be realigned with IR4.0 because they promote innovative work environments, efficient production processes, and timely distribution of production. They can help organizations develop clear measures and monitor business practices at the operational level.

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