


Chapter 15

Overview of Industry 5.0 on Emerging Technologies and Human and Robot Collaboration

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ABSTRACT

The mere idea of Industry 5.0 has lately arisen as the hope for a future industry founded on social and environmental sustainability. The proponents of Industry 5.0 argue that Industry 4.0 is not the best framework for ensuring long-term sustainability. Industry 4.0 focuses on technology-driven productivity in all spheres but neglects human intervention in the final production of the product or service; Industry 5.0 emerged by overcoming its fallacy on it. In 2015, the United Nations adopted a set of goals known as the Sustainable Development Goals (SDGs) with the aim of mobilizing all of its member states to take action to protect the environment, address social issues, and build global prosperity. It is a proactive, goal-oriented strategy that re-evaluates social, economic, and environmental expectations. There is synergy between Industry 5.0 and Society 5.0. Industry 5.0 seeks to understand the potential of big data, artificial intelligence, robots, and advanced digitalization in addressing emerging needs in the industrial, societal, and environmental.

DOI: 10.4018/979-8-3693-2193-5.ch015

1. INTRODUCTION

The mere idea of Industry 5.0 has lately arisen as the hope for a future industry founded on social and environmental sustainability. The proponents of Industry 5.0 argue that Industry 4.0 is not the best framework for ensuring long-term sustainability. Industry 4.0 focuses on technology-driven productivity in all spheres but neglects human intervention in the final production of the product or service; thereby, Industry 5.0 emerged by overcoming its fallacy on it (Ghobakhloo, Iranmanesh, Grybauskas, Vilkas, & Petraitė, 2021). Critics say that because it follows neoliberal capitalist norms, Industry 4.0 would exacerbate problems, including economic inequality, environmental devastation, and a fragile global economy, by prioritizing profit and shareholder power (Grabowska & Saniuk, 2022).

The United Nations adopted the Sustainable Development Goals (SDGs) in 2015 to guarantee that all people live in peace and prosperity, put an end to extreme poverty, and safeguard the world. The SDGs were released as a worldwide call to action to all of its member nations. To promote long-term economic growth, SDGs aim to provide more gainful job opportunities through technological advancement. (Prassida & Asfari, 2022).

According to the European Commission, “Industry 5.0” has proposed a blueprint for developing a sector of the economy that prioritizes people and sustainability across Europe. To find an equilibrium between economic progress as well as the elimination of social ills in Japanese society, the Japan Cabinet has proposed Society 5.0. (Amr, 2022). Two similar visions for the future of business and society are Industry 5.0 and Society 5.0. It is possible that when these concepts are discussed simultaneously, there will be some turmoil. (Huang, et al., 2022).

The European Commission (EC) publicly declared the “Fifth Industrial Revolution (Industry 5.0)” in 2021. On January 4th 2021, the document “Industry 5.0: Towards a Sustainable, Human-centric and Resilient European Industry” was released. Industry 5.0 is moving -looking for ideas that analyze how to change industries into ones that are robust, sustainable, and people-focused (Mao, Wang, Tang, & Qian, 2019)

The emphasis in Industry 5.0 has shifted from monetary value to societal value and from welfare to well-being. When compared to Industry 4.0, the scope of application for the concept of Industry 5.0 is far broader, as it is applicable to every sector and every organization. Therefore, we must take a wide and universal view applicable to all industries when considering the consequences of Industry 5.0 as the approach. The three pillars of Industry 5.0 are a focus on people, resilience, and sustainability. The ramifications of all three for company strategy are substantial.

Analysts predict that 50% of today’s jobs will be automated by 2055; however, this date might be as much as 20 years earlier or later, depending on a number of circumstances, including the state of the economy at large. Therefore, it isn’t easy to accurately represent the dynamic relationship between worker preferences and organizational reality in a technological context.

- To provide the per capita GDP growth that countries throughout the world require, people will need to continue working alongside robots.
- Businesses can reap significant performance benefits from automation, but only if policymakers see the need to help employees and institutions adjust to the changes brought about by automation (Manyika, et al., 2017)

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