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# The Future with Industry 4.0 at the Core of Society 5.0: Open Issues, Future Opportunities and Challenges

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## Abstract

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#### Abstract:

Developing technologies, advancement in science, evolving globalized perspectives and the massive dependence on digital platform for a routine sustenance has led to the core building of Industry 4.0. In general, industry 4.0 focuses on the metamorphosis of all industrial components with the help of strong digital support. It's very often interlinked with the successful fourth industrial revolution. It is to be noted that the very fourth outburst of industrialization plunges forward in order to achieve an optimized and sustained form of production. With the uplift of the fourth generation of this stirring revolution, the efficient extraction of advanced informatics analytics along with internetworked machines have grown to a great extent, complementing the digital platform. On the other hand, society 5.0 involves a human centric community which is capable of striking a balance between the economical proliferations and resolving societal liabilities by the core combination of cyber and physical space. Just like how industry 4.0 carries out the digital transformation of every industrial perspective, society 5.0 encourages mundane life to leap towards a digital revamp expanding across different tiers of the community. Indeed, the rapid change of information and Communication Technology along with the portrayal of society 5.0 as a global trend and a key aspect of the Science and Technology Basic plan, the interplay of the two proves to be a constant support for each other. This paper discusses about the future look of industry 4.0 and society 5.0 and elaborates on the challenges and opportunities rooted from them.

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**I. Introduction-Society 5.0, its Logic and Construction**

In the year 2016, the Japanese cabinet had proposed the commencement of a novel initiative termed as Society 5.0 during its 5<sup>th</sup> Science and Technology Basic Plan under the strong lead of the Japanese Prime Minister Shinzo Abe. Their moto was to strive towards an exuberant, intelligent and ultimately smart society. This community has been labelled to be the fifth dynamic and happening tier in the human gathering [1]–[3] and [4]. Further, it also focuses on creating and molding the huge and massive amount of potential needs and services demanded by the human components of the society and assures a comfortable and meaningful life [5]. This initiative by Japan addresses numerous key pillars which include infrastructure, finance tech, logistics, health care, etc. The striking feature of this top-notch initiative is the integration of Artificial Intelligence and other scientific evolutions to address and govern the societal issues. Society has evolved from many previous envisages of such revolutionary attempts like Society 1.0 (hunger gatherer), Society 2.0 (agricultural), Society 3.0 (industrialized) and Society 4.0 (information). The leap towards Society 5.0 can be compared and contrasted with Industry 4.0 in a plethora of ways. In fact, Society 5.0 is very similar to the modern world visualization where Artificial Intelligence and Robots take over and services are tailored and customized pertaining to the interests of the clients. Moreover, there will be a huge dependence on renewable energy resources in order to popularize a sustainable form of living. The highly refined plan of the 'Super-Smart Society' had made extensive use of the analytical studies and researches put forth by the experts of committees including the Ministry of Education, Culture, Trade, Economy and Industry right from the 2014. The pillars of this far-reaching implementation are many, the strongest one being - Artificial Intelligence (AI) Technology Strategy. This massive framework has been giving prime importance to the major territories of health, mobility and productivity. Furthermore, they have pledged to take up and contribute to the globally accepted Sustainable Development Goals and have committed themselves to fulfill their activities in the same regard. Figure 1:

Evolution of society 5.0

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