# SOCIETY 5.0 AND ITS CHALLENGES FOR THE JAPANESE BUSINESS

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***Abstract***

*The paper deals with humanity's transition from the machine-centered information-based Society 4.0 to the human-centered "super smart society" Society 5.0 and the impact the new society will have on the Japanese business. Society 5.0 integrates the physical and the virtual space using innovations such as artificial intelligence, the Internet of Things, virtual and augmented reality. Its aim is to alleviate problems related to scarcity of resources, inequality, problems of demographic origin, challenges faced by small businesses. Japan is the country considered to be spearheading humanity's technological progress, therefore it will also be expected to shoulder the brunt of the challenges of Society 5.0 such as politics, technological integration, and business acclamation.*

**Key words:** Society 5.0, Japan

**JEL:** D15, D83, M31, M37

## Introduction

As humanity nears the tail end of the Information Age, developed countries around the world are preparing to enter the next society – Society 5.0. While Society 4.0 is an information society based around machines, Society 5.0 can be described as a "super smart society" based around humans as its focal point which places sustainability and durability in the forefront of the production process. One of Society 5.0's primary goals is the complete integration of the physical space which we've known since the beginning and the virtual space, first discovered in Society 3.0 and greatly developed in Society 4.0. **This goal will be achieved with the help of innovations such as artificial intelligence, the Internet of Things, virtual and augmented reality and others. In so doing, problems related to scarcity of resources, inequality, problems of demographic origin and challenges faced by small businesses, among others, will be either lessened or potentially eradicated.** However, with progress come both expected and unexpected difficulties. As the country widely believed to be spearheading

humanity's technological progress, Japan is expected to shoulder the brunt of these challenges in aspects such as politics, integration and business acclamation.

The aim of this publication is to explain the impact Society 5.0 has on the Japanese business sphere. To meet this objective, my research strategy will focus on examining Society 5.0 as a concept, proving the adequacy of Society 5.0's concepts to the problems at hand, studying the impact of Society 5.0 on business and extracting guidelines for my future work. In order to achieve this goal it will be divided into two distinct yet interconnected parts.

**Society 5.0 and Industry 5.0**

Society 5.0 in its core seeks to balance the continuation of the economic development of humanity with the solution of the rapidly growing environmental and social problems. It does not limit its scope only to the manufacturing sector, but also aims to address larger challenges faced by humanity as a whole. Another primary goal of Society 5.0 is the initially partial and subsequently full integration of the physical and virtual spaces. This will be achieved by the use of advanced information technologies, artificial intelligence, advanced and independent robotics, the Internet of Things and augmented and virtual reality. All of the technological advancements mentioned will be a staple in daily life, industry, healthcare and many other sectors not only for economic benefit but also for the convenience of the average citizen (Schwab, 2018).

As far as timeline is concerned, Society 5.0 coincides in time with Industry 5.0 while also borrowing a great deal from Industry 4.0. The same is not however true for the previous four societies as Society 1.0 and Society 2.0 are associated with the hunter-gatherer period and early agricultural period of human history respectively. The first industrial society – Society 3.0, roughly corresponds to the first, second and third part of the Third Industrial Revolution. In Society 4.0 on the other hand the dominant force is "information" and it encompasses the period from the highly digitalized era of the end of the third industrial revolution to present day.

"Society 5.0" as a concept was first proposed in 2016 by the largest Japanese business federation Keidanren and was subsequently accepted and promoted by the Japanese government. In so doing, Japan became the first country to officially begin the pursuit of Society 5.0, shifting the dimensions of digitalization and transformation – two processes previously focused primarily at the level of individual organizations and sectors of society, into encompassing the nation as a whole, changing the country's transformation strategy, policy and way of thinking (Cabinet Office, 2021). In this way, the Japanese state is laying the foundations for a new better Japanese society and as of the time of writing the plan has already been set in motion.

**The production side of Society 5.0, Industry 5.0, places great importance on the following three tenets:**

- *A Human-Centered Approach*

The change in the production process brought about by innovative technology also requires a change in the way of thinking and the attitude towards the workforce. In Industry 5.0 employers need to recognize their workers not simply as another expense but as an investment that can unlock the company's true potential. In Industry 4.0 employees are already expected to handle basic elements of the information age - digital skills, working with MS Office and the Internet for office workers and knowledge of the production machines for factory and workshop workers. In Industry 5.0 many workers will have to undergo retraining in order to acquire new skills appropriate for the digital age – working with new technologies, cyber security, realizing the value of data and analyzing it, digital literacy, among others. It is, of course, naïve to believe that every employee will be able to successfully adapt to the new methods of production. Bearing in mind that not all workers will be able to find their place in the new and transformed industries, the welfare system may need to be reexamined to enable these people to remain functional members of society even in the era of mass digitalization (Nahavandi, 2019).

• *Sustainability*

Another distinguishing quality of Industry 5.0 and Society 5.0 as a whole is the sustainability of both production and lifestyle. Sustainable development is not a new idea, especially to European countries. It was first proposed as an idea in 1987 in the publication "Our Common Future", also known as the Brundtland Report, by the World Commission on Environment and Sustainability. European nations currently adhere to the seventeen Sustainable Development Goals (SDGs), adopted in 2015 by the UN General Assembly, as well as to the guidelines set forth in the 2019 Green Deal. With the increase in amount of production and the accelerated development of various companies, the necessary energy and carbon emissions also increase, and with them – global pollution. One way to prevent, or at least reduce, these negative effects on the planet is to focus on smart production planning, process rationalization and the use of alternative, energy-efficient solutions – values which are at the core of Industry 5.0. But only the optimization of already existing technologies and their adaptation to a more sustainable way of production will not be enough. Industry 5.0 will also focus on the discovery of new solutions and their practical implementation with the aim of partially or completely reworking the business models of certain companies, their practices and the materials they utilize. One of the many ideas proposed for achieving this goal is industrial symbiosis – the process of sharing and reusing byproducts and secondary resources. Wider spread of this practice will help not only the environment but also the industries in their strive for competitiveness in the global markets in the long term. **This characteristic of Industry 5.0 can be summed up using the 5 R's of sustainable development – Repair, Reduce, Reuse, Repurpose and Recycle** (Scanlon, 2018)**.**

• *Endurance*

The third primary characteristic of Industry 5.0 is the ability of the production process to remain durable in the face of outside adversity. The past three years have tested the resilience of both the industry and society as a whole – from the Covid-19 pandemic, the recession that followed, social unrest and sanctions imposed on imports of Russian products as a result of the military action taken in Ukraine are just some of the obstacles and unforeseen dangers that companies were exposed to. Industry 5.0 seeks to provide a more durable production process – one in which workers will not have to worry about being laid off due to recessions or even global health crises. This increased sense of security will lead to reduced stress in the population, which in turn will result in higher productivity, more satisfied workers and a healthier population aas a whole, given that stress has been proven to weaken the immune system, causing or worsening numerous diseases (Saniuk et al., 2022).

**Solving Problems in Society 5.0**

As was mentioned above, Society 5.0 aims to balance economic progress with solving social problems, like inequality, an aging population, poverty and famine, by utilizing innovative technology such as large-scale data analysis, artificial intelligence, the Internet of Things, and others. The first one, large-scale data analysis, represents the foundation of Society 5.0. In Society 5.0 a huge amount of information from physical space will be collected using automated sensors, as opposed to being manually input, and stored in cyberspace, where it will be analyzed by artificial intelligence. The results of said analysis will be made available to experts in physical space and actions will be taken towards solving the given problem. In so doing, the physical and cyberspace will become wholly interconnected, as opposed to Society 4.0 where information is collected through the Internet and is analyzed by humans, bringing new value to the industry and society at large in ways previously thought unattainable (United Nations [UN], 2015).

As the economy expands, life becomes increasingly more favorable and comfortable, the demand for energy and food products increases, life expectancy increases, and with it the percentage of citizens in retirement age. At the same time, with the globalization of the economy, international competition is intensifying at a previously unseen rate and problems such as the concentration of wealth in the upper class and regional inequality are beginning to emerge and worsen. Such social problems, which are usually solved at the expense of economic development, are becoming increasingly more widespread and complex. Some of the necessary measures which need to be taken in order to solve them include the reduction of greenhouse gas emissions, increased food production and reduced food waste, supporting the development of sustainable energy sources, helping the aging population, among others. That being said, in the current social system, the solution of the abovementioned problems and the simultaneous economic

expansion are difficult if not impossible to balance. In Society 5.0, changes in the world as well as new developments in the fields of the Internet of Things, robotics, artificial intelligence and others will contribute to a change in human society and the continuation of progress (Kasinathan et al., 2022). Japan aims to make Society 5.0 a reality, utilizing its qualities to expand its economy all the while solving problems and creating new value in the following aspects of human society:

- *Public transportation* – AI data analysis regarding weather, traffic and nearby gas stations, alongside advancements in autonomous technology will lead to reduced travel times and more optimized routes. These innovations will also lead to easier transit for the elderly and the disabled and a reduction in carbon dioxide emissions.
- *Healthcare* – Artificial intelligence can analyze symptoms at a much faster pace and, with the help of a human doctor, make the correct diagnosis for the patient. Furthermore, the elderly will be able to remotely alert local professionals when they need emergency treatment. These innovations will lessen the workload of healthcare workers – something which was the Covid-19 pandemic proved necessary.
- *Production* – As was already mentioned, Industry 5.0 will utilize AI to analyze data related to supply and demand, suppliers' stock availability, information about deliveries, and others. This, alongside the use of robots in the production process, would lead to a more efficient supply chain and more competitive companies.
- *Agriculture and Food* – AI analyzed data related to weather, the condition of the crops, market needs and trends in consumer demand would optimize not only production (automated machinery) but also food supply (timely and/or automated delivery, mobile orders). These innovations would reduce food waste and make progress towards solving the problem of world hunger. Additionally, on the consumer's side information related to individual allergies, preferences, expiration dates and stock availability would aid in constructing shopping lists and allow customers to make a more informed choice.
- *Natural disasters* – As with agriculture, AI analyzed data would help warn the population of impending natural disasters such as hurricanes, earthquakes and fires long before they happen, providing for the timely evacuation of the residents and potentially saving thousands of lives.
- *Energy* – Last but certainly not least, Society 5.0 can create new value in the sphere of energy and energy supply. By having AI analyze data related to the state of power plants, electric vehicles and energy consumption, humanity can optimally transition to greener energy, reduce costs by optimizing plans, lessen the carbon footprint and ensure safe and secure access to electricity even during storms and other natural disasters.

## Impact of Society 5.0 on the Japanese National and International Business

As was mentioned above, the transition to Society 5.0 and Industry 5.0 will have a profound effect on both the everyday and business aspects of life. And as the country widely believed to be the leader in innovation, Japan will need to be among the first to adapt to this new environment. The country is no stranger to rapid progress however – from the mid-20th century to the present day Japan has been known for its strong economy and strict and rigid business practices. Currently, the country ranks third in the world in GPD ($4.91 trillion, after the US and China) and eleventh in population (125.5 million) despite its relatively small size. While the country's economy was in relative stagnation during the 1990s and the 2000s, the market remained broad and the former government under prime minister Shinzo Abe carried out a number of major reforms, named the "Abenomics" program, helping the economy recover, stabilizing the exchange rate of the yen, supporting the stock market, increasing corporate investment and encouraging the population to further stimulate the economy by spending money.

Like all developed nations, Japan is currently undergoing drastic social changes, including a highly aging population – according to data from the World Bank, 28.7% of Japanese citizens are aged 65 or older, second in the world after Monaco. This is a double-edged sword however, as alongside the negative aspects associated with aging, it offers a unique opportunity for businesses that specialize in elder care and related fields to thrive, especially given the ways in which innovations can alleviate the pressure on the elderly. While birth rates are low, the potential of the future Japanese generation is high. In the field of education the country ranks among the top as increasingly more parents are realizing the enormous impact which a good education could have on their children's future (Statistics Bureau of Japan [SBJ], 2022). This serves to open up a possibility of developing profiled private schools with a focus on teaching foreign languages. That being said, despite the size of the economy Japan ranks last among developed countries in English proficiency with less than 30 percent of the population speaking English, with only 2-8 able to be classified as fluent speakers.

With all of these factors in mind, here are the specifics of different aspects of Japanese business, the ways Society 5.0 would impact them and the challenges that societal and technological progress could pose:

*a) Japanese Business Culture*

Japan is famous worldwide for its strict, rigid, and efficient, albeit sometimes slow, business culture. This has led the country's businesses to achieve success on the global markets: in 2022 Japan ranked third in Fortune Global 500 companies with 47 companies (Statista, 2022) and second in Asia in number of millionaires (Credit Suisse, 2022). Furthermore, the younger generations, late Millennials and early Generation Z, are retaining the positive aspects of Japanese business culture

while at the same time doing away with the more outdated ideals. Increasingly more young people are deciding to oppose the stereotype of a salaryman working in a ”black” company (Japanese companies which mistreat employees with busy working hours and slim chance of promotion) and are instead showing interest in Western companies. In terms of innovation, the country has the world's third highest expenditure on research and development – 19.24 trillion Yen, or 3.59% of the country's GDP (SBJ, 2022), most of which is in the fields of high-tech devices, biopharmaceuticals, and business services. All of these factors combined with the country's increased protection of intellectual property rights make Japan a prime target for foreign companies seeking to internationalize their operations.

The transition to Society 5.0 will undoubtedly have a profound impact on the country's business culture. For starters, the ideals of Industry 5.0 and Society 5.0 as a whole would not allow for "black" companies to exist. Companies which rely on worker exploitation may opt to automate their business processes and drastically reduce the number of employees as purchasing and maintaining machines and artificial intelligence will have a lower cost in the long run (Holroyd, 2022). Furthermore, as newer generations are rejecting these companies' ideals in favor of Western ones, they may be forced to change their ways or risk losing their more progressive business partners. A downside of the innovative technology intrinsic to Society 5.0 however will be the transition process itself. Due to the stark difference in practices, many companies will either fail to properly implement them or will require external help, thereby requiring more resources.

*b) Marketing*

Similar to their Western counterparts, Japanese companies use a multitude of marketing strategies in order to reach potential consumers and implant their product or service in their minds. While some companies develop their own marketing strategies, others rely on hired experts from different marketing agencies. Presently, the leading advertising agencies on the Japanese market are Dentsu, ADK, Tokyu Agency, Hakuhodo and NTT Advertising. The leading methods of advertising are billboards and ads in various forms of public transportation, television advertisements and Internet banners and video ads, representing 20.5%, 31.3% and 31.5% of the total resources spent on marketing in 2020 respectively, with the percentage expenditure on Internet advertising expected to rise even further in the following years (Kato, 2021). The last decade has seen the rise and rampant growth of the so-called "influencer marketing" – a practice where companies pay content creators to advertise the brand to their audiences, giving the products or services a sense of reputability by associating them with a familiar face. This strategy, utilized by companies such as Bokksu, Raycon and Better Help, while relatively inexpensive compared to other forms of advertisement, could also prove risky in several different ways. On the one side, the influencer's audience may not be even remotely interested in the product, while on the other, the influencer may become involved in controversy, leading the association to take on a negative connotation.

**The realm of marketing will perhaps be one of, if not the most impacted by Society 5.0 spheres of business.** As was mentioned above, presently the most innovative way a company can advertise is via the Internet. In Society 5.0 the scope of digital marketing will be expanded to also include marketing via virtual and augmented reality. The latter of these two is already being put into practice – many businesses include QR codes in their advertisements which the potential customers can scan with their mobile devices and be redirected to a web page containing additional information, therefore blending the physical and virtual space to an extent (World Trade Organization [WTO], 2021). Furthermore, once virtual reality advances, businesses will be able to rent advertising space and even offices in different digital worlds such as the Metaverse, saving money on resources while potentially reaching a similar number of consumers.

*c) International Business and Society 5.0*

Despite the large size of its economy, Japan is a country relatively poor on natural resources, primarily due to the small landmass. As a result, Japan relies heavily on imports from its international business partners. In 2020 the largest importers to Japan were China (26.1%/$151b), the United States (10.9%/$63.1b), Australia (5.47%/$31.8b), South Korea (4.32%/$25.1b) and the Republic of China, or Taiwan (4.18%/$24.3b) (The Observatory of Economic Complexity [OEC], 2022). Other important importers include Thailand, Germany, Vietnam, and Saudi Arabia. The most imported products to Japan are crude oil, propane-butane, integrated circuits, television equipment, computers and coal briquettes – all of which are either raw resources or labor-intensive products which are difficult to produce locally. While Bulgaria is not among Japan's top trading partners (ranking 46$^{th}$ in 2020 with exports of goods and services in the country worth $104m and $23.5m respectively), trade between the two nations has seen an upward trend over the last several years (OEC, 2022).

Industry 5.0 and Society 5.0 will have a significant impact on Japan's international business dealings, albeit not as pronounced as the one on business culture or marketing. Communication between partners will undoubtedly be alleviated as artificial intelligence and real-time machine translation will reduce the need for intermediaries (Eurotechnology Japan, 2021). Furthermore, improvements in the supply chain will reduce the cost of production and shipping – savings which can be passed onto the customers. Last but certainly not least, Society 5.0 and all of the new values it will bring will result in a more peaceful society, making arrangements such as the EU-Japan Economic Partnership Agreement more widespread and the markets – more open. As a result, even countries with smaller economies, such as Bulgaria, will be able to penetrate the Japanese market and attempt to appeal to the local consumers.

## Conclusion

So far humanity has viewed economic, social, and organizational systems as separate factors which influence each other – one of the core tenets of Society 4.0. Society 5.0 aims to achieve their optimization and full integration as well as the fusion between the physical and virtual spaces through the use of innovative technology such as artificial intelligence, "smart" devices, data clouds, robots and so forth.

Japan is the first country striving to achieve such a human-centered, sustainable, and durable society, with the European Union following suit. Alongside numerous other aspects of Japanese society, Japanese business will undergo a multitude of changes in structure, technology, and practices in order to best conform to Society 5.0's ideals. As companies and the world as a whole begin to conform to the new way of living, problems such as pollution, inequality, and resource shortages will slowly begin to phase out as they become alleviated by innovative technology, as is outlined in Professor Klaus Schwab's "Shaping the Future of the Fourth Industrial Revolution: A Guide to Building a Better World". In order to achieve this ideal future, however, companies in the present need to focus on the transition to Industry 5.0 by gradually implementing new practices and technology such as automatization and artificial intelligence, once it becomes more widely available, and transforming the concept of business as a whole.

## Bibliography


1. Cabinet Office, Government of Japan, (2021). *Society 5.0.*
2. Credit Suisse, (2022). *Population of millionaires by country.*
3. Eurotechnology Japan KK, (2021). *Japan Market Entry – or Third Restart: Why Can Business in Japan Be Difficult?*
4. Holroyd, C., (2022). *Technological Innovation and Building a "Super Smart" Society: Japan's Vision of Society 5.0.*
5. Kasinathan, P., Pugazhendhi, R., Madurai Elavarasan, R. et al., (2022). *Realization of Sustainable Development Goals with Disruptive Technologies by Integrating Industry 5.0, Society 5.0, Smart Cities and Villages.*
6. Nahavandi, S., (2019). *Industry 5.0 – A Human-Centric Solution.*
7. Rugman, A.M., Lecraw, D.J., Booth, L.D., (1985). *International Business: Firm and Environment.*
8. Saniuk, S., Grabowska, S., Straka, M., (2022). *Identification of Social and Economic Expectation: Contextual Reasons for the Transformation Process of Industry 4.0 into the Industry 5.0 Concept.*
9. Scanlon, S., (2018). *Now prepare for the 5th Industrial Revolution.*
10. Schwab, K., (2017). *The Fourth Industrial Revolution.*
11. Schwab, K., (2018). *Shaping the Future of the Fourth Industrial Revolution: A Guide to Building a Better World.*

12. Statista, (2022). *Number of Fortune 500 companies in selected countries worldwide from 2000 to 2022.*
13. Statistics Bureau of Japan, (2022). *Population census.*
14. The Observatory of Economic Complexity, (2022). *Japan country profile.*
15. United Nations, (2015). *Transforming our world: the 2030 Agenda for Sustainable Development.*
16. World Trade Organization (WTO), (2021). *Policy Approaches to Harness Trade Digitalization.*