

Bylined Article

Looking East for Inspiration: How Japan is Innovating for a Better Tomorrow

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Japan has long been known for its technological and industrial innovation and excellence. Its robots, advanced electronics, video games, bullet trains and automotive engineering are all fields in which the country has significantly impacted the world. However, being first or best in technology and industrial solutions is no longer Japan's most important hallmark of innovation for people, businesses and society.

As the world prepares to navigate the megatrends that will influence global economies over the next two decades, such as aging populations, environmental concerns, and the increasing ubiquity of advanced AI technologies, Japan is showcasing how businesses should strategically plan for these changes. Along with adopting an innovation mindset, the clear message from Japan is that business leaders must embrace fresh ideas and unique approaches to create a better future. Say 'hello' to the Future Enterprise, where the emphasis on innovation revolves around developing new methods that are more efficient, sustainable, and inclusive.

Innovation for good: drivers behind becoming a better business

There is a growing belief among Japanese firms – and echoing around the world – that business practices from the 20th century are ill-suited to address the economic realities of the 21st century. Instead, companies must be organized and managed according to new rules and values. There has been a significant shift in focus from competing for market share and bottom-line profit to place more emphasis on innovation and added value in areas including the environment, society and the economy – plus our legacy for future generations. In other words, in an increasingly complex and fragile world, enterprises must transform into a sustainable and enduring value-creation engine to remain relevant.

The World Economic Forum highlights the critical challenges faced by 21st-century enterprises, noting that business leaders who want to maintain a competitive advantage must adapt to a business landscape reshaped by environmental degradation, geopolitical instability, plus increasing economic and social inequalities.

To address these issues, the Japanese government has launched its Strategic Innovation Program (SIP). This supports innovation "missions" across ministries and industries – from "moonshots" in quantum and biotech design to the social essentials of integrated healthcare and mobility design. Encouraged by such programs, Japanese companies are developing value-driven ecosystems that integrate beyond established supply chains. They share a common purpose and technology development, from AI integration to the most advanced battery and chip designs. To realize their vision of establishing Japan as a model of innovation that inspires the world, such collaboration now involves the public, the scientific community, educational institutions, corporate businesses, and financial firms.

Let's examine three areas where Japan's innovation DNA is already making significant strides in addressing global challenges.

1. The environment

Japan has emerged as an innovative world leader in cleantech, tackling environmental issues such as carbon emissions, air pollution, and the waste streams created by rapid urbanization. The country is leveraging key innovations such as artificial intelligence (AI) and automation to reduce energy consumption and manufacturing waste, cut pollution, and optimize supply chain transportation routes. On top of that, Japan is a global leader in developing battery technologies, hydrogen supply chains and reinventing chemical production with the use of bioplastics.

Committed to achieving carbon neutrality by 2050 while being challenged by environmental disasters, ranging from devastating earthquakes and tsunamis to growing typhoons threats, the Japanese government is focused on aligning decarbonization with security and social wealth creation. To aid this progress, the government supports carbon-reduction initiatives while investing in technologies like energy storage, thin-film solar, and smart infrastructures that create immediate and long-term value to households. With this approach, the Japanese Government emphasizes the importance of turning theoretical ideas into practical realities.

It is therefore not too surprising that Japan has been first in electrifying vehicles by developing practical hybrid technologies that gradually transform into full electrification of personal transport. To remain open to different technologies globally, the government and major corporations are working with companies in Australia and the Middle East on hydrogen production and distribution. Other initiatives focus on developing bio-jet fuels, which are hoped to become an affordable carbon-neutral alternative to standard jet fuel by as soon as 2030, and high-tech concrete that absorbs carbon dioxide as it hardens.

2. Sustainable 'smart' cities

Japan is leveraging technology to create future-proof cities that deliver a safe and secure environment for people to live and work. This includes advances in sensing and monitoring technologies that allow children and the elderly to live comfortably while protecting their privacy. More initiatives focus on intelligent and integrated transportation systems that reduce accidents, cut carbon emissions and congestion. Efficient building technologies are helping to demolish ageing skyscrapers with less environmental impact, build disaster-resistant structures, and use self-repairing materials that extend the life of buildings.

In Japan's major cities, including the Tokyo metropolitan area of 34 million citizens, the 15-minute concept of smart cities that provide local access to all essentials has been a reality for decades. Highly efficient convenience stores and small supermarkets can be found at almost every corner, while advanced logistics deliver almost any product to the front door on the same day – increasingly by bicycle to cover the last mile.

Yamato, Japan's leading logistics and transport company, and its technology partner Fujitsu have just launched a venture called the Sustainable Shared Transport, which provides an open technology platform and brings consolidated transportation services enabling radically lower emissions and reduced truck hours for deliveries to all regions across industries and supply chains. Other major companies, such as Panasonic and Toyota, are working with partners on integrated smart city concepts. The Fujisawa Smart Sustainable Town and the Woven City, for example, are at the center of practical urban technologies for autonomy, robotics, mobility, smart homes, and on-site AI.

3. Addressing the demographic 'tipping' point

Japan's aging population has resulted in a contracting working-age population since the 1990s. By 2030, nearly 40 percent of Japanese workers will be 55 or older. Over one in 10 people in the country are already 80 or older. This demographic shift is now affecting an increasing number of economies in the developed world.

The impact of this changing demographic is profound. Japan has been running public deficits to accommodate age-related spending and ensure its social security systems remain solvent during the transition. By 2040, Japan will face a labor shortage of around 11 million workers. This requires a new approach to innovation and leadership in using technology and services to meet the needs of the silver economy – individuals aged 50 and older.

For instance, advancements in home automation, AI, the Internet of Things, and e-health can enhance quality of life and enable older adults to remain active and productive while also creating new business opportunities for companies. Investment is also increasing in Mobility as a Service (MaaS) transport initiatives in cities and rural areas as more elderly individuals struggle with their driving skills while depending on more centralized services, helping to bridge the digital divide between rural and urban regions. Another key focus is the development of AI-agents and robotic companions that support community-based integrated care systems.

When it comes to addressing national workforce challenges, the government is encouraging older workers to remain in the workforce longer, ensuring that their knowledge and experience is preserved, and enabling employees to maintain their income and lifestyle for longer. With 40 percent of Japanese businesses now employing workers aged 70 and older, technical innovations such as adaptive AI-driven training and upskilling for older employees, as well as investments in AI-powered service agents and collaborative robots that work alongside seasoned professionals to assist with challenging tasks, have become critical.

In this part of the economy, innovating with the latest technologies to leverage the experience of seniors promises the greatest impact. New revenue streams are being created by leveraging augmented reality (AR) and virtual reality (VR), developed on basis of Japan's cutting-edge gaming industry and being implemented across all sectors to enable new ways of working and doing business.

Embracing the regenerative enterprise

Today's Japanese companies are redefining the approach to applying innovation to societal and global challenges. In doing so, they are reconsidering the very essence of enterprises and how government and industry can collaborate to reach ambitious objectives.

By redefining enterprise purpose and fostering innovation, Japan is leading the way in applying cutting-edge technologies to create a more equitable, sustainable, and prosperous world for everyone.

Japanese innovators are learning to move beyond traditional business models and combine innovative disciplines in creative ways to solve problems. This includes preserving precious resources, fostering safer and more inclusive living and workspaces for everyone, and creating sustainable cities designed around human well-being. In a world of increasing complexity and technological opportunity, Japan's approach to collaborative development, which aims to leave nobody behind, should be embraced far beyond its borders.

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