Toyoda Gosei's Growth Strategy

Manufacturing Strategy

Message from the CMO

Our Vision for the Factory of the Future: One That Can Respond Swiftly to Change

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To survive as a company, it is essential that we respond to various environmental changes anticipated in the future—such as climate change caused by global warming, a declining birthrate and aging population, and increasingly diverse customer needs— even in the field of manufacturing, where certainty is often prioritized. The factory of the future that we create must be one that can swiftly adapt to these changes. At the same time, if we look at the present, we are already being required to undergo significant transformations ourselves in response to developments such as changes in national strategies for BEV adoption and certification challenges.

As part of our 2030 Business Plan, we have set the goal of creating smart factories that will enable us to double productivity. In the 2030s, mobility is expected to undergo significant changes driven by the advancement of CASE technologies and decarbonization. To adapt to these changes, it will be essential to deliver new value through manufacturing. By combining the Toyota Production System (TPS) philosophy of continuous improvement, which we have cultivated over the years, with the latest technologies for digital transformation (DX), standardization, and automation, we aim to accelerate the development of smart factories that enable groundbreaking new value creation and productivity improvements. Furthermore, by building a global network capable of real-time information sharing, we will enable faster management decision-making and proactive responses, achieving factories that can swiftly adapt to change.

Today, we have been transforming our factories into smart factories that balance carbon neutrality and productivity improvements, such as the Inabe Plant (2020), new plant of Toyoda Gosei East Japan Co.,Ltd. (2022), new South China plant (2023), and other new facilities. We will continue to plan and implement initiatives to achieve the 2030 Business Plan without halting this transformation.

TG Advanced Factory Concept

The factories we envision for the future must go beyond merely improving productivity in manufacturing. They must also be capable of providing new value that helps address all social challenges, serving the needs of our stakeholders. To that end, we have formulated the "TG Advanced Factory Concept," which aligns with our management philosophy. This concept builds upon the foundation of highly productive, "smart" factories based on TPS, while incorporating three additional values: "Lively," "Clean," and "Integrity," to define the TG Advanced Factory Concept.



Lively Factories Where Everyone Can Work

As times change, so do the ways people work. In line with these changes, we will transform the relationship between people and machines. By achieving a high level of collaboration between humans and machines, we aim to enable flexible working styles that can adapt to individual values, creating workplaces where everyone can work in a lively and fulfilling way.



Clean Factories

Plastic and rubber molding are our core technologies, and the use of thermal energy is unavoidable. However, through steadfast energy-saving efforts, process integration, downsizing, material recycling, and production technology innovations, we will reduce CO₂ emissions and waste. These initiatives aim to contribute to preserving a rich and sustainable Earth for future generations in the face of a variety of environmental changes.



Integrity in Factories

Most disasters and defects stem from human-dependent tasks requiring careful attention. By digitizing human tasks, visualizing areas that require careful attention, and working to eliminate them, we will create factories where people can work comfortably and with peace of mind. Furthermore, management indicators—including production loads and inventory levels—will also be digitized, enabling consistently optimal management decisions. Even in human-centered manufacturing, we will deliver reliable peace of mind to all our stakeholders.



Smart Factories

To respond swiftly to unprecedented changes, processes must be simplified and streamlined to enhance agility. The essence of our manufacturing lies in pursuing net productivity through the thorough elimination of waste, in line with the Toyota Production System (TPS). Also, by using technological innovations to combine process integration, standardization, and automation, we will create refined manufacturing environments that are flexible, intelligent, and quick to adapt to sudden and severe changes—ultimately achieving one-piece flow production at its finest.



	Ultimate Ideal	KPI
Build harmony between human expertise and machines		
	Individual work styles	Engagement

	Ultimate Ideal	KPI
Self-adjusting machines	Eliminating human error	Preventing disasters, resolving issues, ensuring compliance

Manufacturing Strategy

Global Collaboration for Realization

To achieve the 2030 Business Plan, we must implement manufacturing strategies globally and immediately to bring our vision to life. The traditional "single hub, oneway" approach-where Japan designs and plans while overseas sites execute-has made it difficult to swiftly respond to diverse environmental changes occurring across global regions. To address this, we have

adopted the CoE (Center of Excellence) philosophy, which leverages the strengths of each region and site on a global scale. By enhancing global collaboration and shifting to a "multi-hub, multi-directional" approach, each region and site can refine and share their unique strengths, enabling the swift global implementation of manufacturing strategies.



An Information Platform Connecting Engineers

We have launched GPES (Global Production Engineering Sharing) as a platform for sharing the latest information on manufacturing at Global TG in video format. The concept behind GPES is to enable direct access to information anytime and to build a network where engineers can connect directly, transcending language barriers through video sharing. This platform facilitates the rapid global

deployment of manufacturing technologies. Engineers at overseas sites can now communicate directly via email, significantly shortening the time from idea to production while enhancing the guality of the outcomes. Feedback indicates that GPES has been instrumental in raising the level of improvements and will continue to play a vital role in the future.



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GPES viewing interface (Global standard)

Global Expansion of CoE

Japan will continue to lead as a Center of Excellence (CoE) by driving innovations in production technologies that combine our long-cultivated core technologies-such as TPS and plastic/rubber manufacturing-with the latest advancements. By integrating and standardizing processes to streamline and simplify entire factories, we are transforming them into robust systems that are highly

Major examples

Clean × Smart: Hot Stamping Technology for Large Products

We have developed a new method to elevate the aesthetic quality of plastic injection-molded products to the level of painted finishes, while also achieving a metallic appearance equivalent to plating with a single transfer process. This innovation eliminates traditional painting and plating processes, which require large-scale facilities, by completing them during





Use in the front grille of the Toyota Crown sedan

Integrity × Smart: AI-Based Skeletal Detection Technology

This technology enables realtime digitization of even the finest hand movements during work by analyzing video footage. In addition to eliminating unnecessary movements, it can detect hazardous tasks and deviations from standards. By removing the burden of human oversight in training, this technology helps prevent accidents and defects caused by human error. To ensure the successful implementation and adoption of human task digitization across regions with diverse cultures and practices, TGHQ is organizing caravans to visit local sites and implement the global utilization of this data.



adaptable to change. Furthermore, predictive maintenance through digital integration enables proactive responses, further enhancing our ability to adapt swiftly to changes. Meanwhile, TG Thailand has enhanced its capabilities in robotic integration and in-house production using karakuri mechanisms (low-cost mechanical systems) and is already playing an active role as a CoE.

the molding process. It achieves a high level of CO₂ reduction while simultaneously shortening lead times and reducing space requirements. By reducing intermediate inventory, this process creates production systems that are highly adaptable to change. Following its mass production success in Japan, we are rolling it out globally, starting in North America.

Conventional Hot-stamped

Significant variation between tasks

Stabilized variation



Case study: Stabilizing and improving work areas through human task flow analysis using AI-based skeletal detection technology