

— Monozukuri: Art and soul of manufacturing —

On the morning of 11 June, a group awaited the Kyoto-bound Shinkansen in Tokyo Station. Although they resembled a group of friends embarking on a holiday, passersby heard them using words common in business journals, such as “competitiveness,” “kaizen,” “TQM,” and “innovation.” “*Monozukuri*” was repeated often. Those travelers were participants in the training course on *Monozukuri: The Art of Manufacturing*, jointly organized by the APO and Association for Overseas Technical Scholarship (AOTS, a training institution under the Japanese Ministry of Economy, Trade and Industry), 4–15 June, in Japan.

In Japanese, *mono* means “product” or “thing,” and *zukuri* means the “process of making.” It is often cited as the foundation of the high productivity and competitiveness of the Japanese manufacturing sector. Explaining and illustrating that foundation was the purpose of the APO/AOTS training course attended by 21 SME entrepreneurs and senior managers, one consultant, and one academic from 16 APO member countries.

The three days of site visits outside Tokyo, following five days of presentations and discussions, was part of the journey to explore what *monozukuri* means to Japanese manufacturers and how they put the concept into practice. “The five-day lecture session was really informative; however, it is more important for us to see and hear from the production sites of companies,” noted Managing Director Jeremy Fong Sue Fun of Fong’s Engineering & Mfg. Pte. Ltd., Singapore. Four companies were visited: the Shiga Plant of Daikin Industries, Ltd., which manufactures air-conditioners, refrigeration equipment, and air purifiers; Honda Motor Company’s Suzuka Factory; Apollo Electronic Co., Ltd., an SME manufacturer of electronic parts; and Ebina Factory of Jidosha Buhin Kogyo Co., Ltd., a maker of automotive parts and machine tools.


Ponds are set within the green grounds of the Daikin Shiga plant, and a staff



Apollo Electronic President Ota explaining his business philosophy

member explained that the company’s annual summer celebration takes place there to which employees, their families, and many local residents are invited. Along with a pleasant, comfortable working environment, the Daikin Shiga plant has a strong company culture with zero tolerance for poor quality and a focus on continuous improvement. The Daikin Production System was introduced in 1978, which has evolved from mass production of a single model to variable-product, variable-quantity production. Participants observed kaizen activities and the IT-based production control system during an assembly line tour.

Apollo Electronic, an SME with 60 employees, manufactures electronic parts used in coils, transformers, battery chargers, and medical equipment and has received ISO9001:2000, ISO14001, and ISO13485 certifications. President and CEO Akira Ota is a strong advocate of *monozukuri*. His business philosophy focuses on customer satisfaction, employee satisfaction, and the plan, do, check, act cycle. “The quality defect rate of Apollo exceeds the minimum requirement of Six Sigma,” observed Bhartiya Valves CEO J.P. Malhotra, India.

At the end of the training course, Managing Director David Chiu, MBP Leather Industries Co., Ltd., Thailand, summarized the definition of *monozukuri*: “I think that *monozukuri* is the integrated concept of quality improvement processes in manufacturing. This concept is not new... but it is different here in Japan because of its unique culture.” Participants agreed that *monozukuri* practices vary between countries, industries, or companies based on culture. However, the spirit of *monozukuri* can be adopted by all. A list of *monozukuri* tools was suggested at the end of the project, comprising 7M; perfect quality; efficient management; dignified management; autonomy of quality circles, production, and maintenance; and “T. QM” rather than “TQ. M” to focus on totality rather than on management. 



Daikin assembly line for outdoor air-conditioning units (photo courtesy of Daikin Shiga Plant)