

Laboratory / Center profile

Global Product Value Creation Research Laboratory

Representative: Professor Masaru Nakano

Members: Guest Professor Toshiyuki Yasui, Project Associate Professor Nobuaki Minato, Project Lecturer Tomomi Nonaka, SDM Research Institute researchers, masters and doctoral students, faculty members of other universities, and company professionals



The state of affairs of Japanese manufacturing companies is severe and often referred to as a sextuple difficulty. The problems are multiplying and include a worsening trade balance caused by the high yen and production shifts to overseas locations. The Global Product Value Creation Research Laboratory studies enterprise system design based on system thinking and looks into co-creation of value together with clients taking a *kotozukuri* (value creation)

approach with an aim to regain the competitiveness of Japanese companies that have been competing on technological capabilities. We collaborate with other graduate schools, universities, and companies, in order to draw out issues facing the Japanese manufacturing industry and to discuss ways of moving forward, including technological and managerial strategies with a view to presenting innovative recommendations to companies as well as to the government.

Issues Surrounding Global *Monozukuri* (manufacturing)

We analyze Japanese manufacturing companies by dividing them into the following three categories:

(1) Global products (e.g., automobiles, home electronics, semiconductors, and machinery and equipment)

Businesses under this category account for a large share of overseas sales and the Japanese economy. Companies typically deal with volume-zone products.

(2) Large-scale projects (e.g., plant and general construction)

Global businesses under this category require professionals with ample experience. Despite its advanced elements of technology, Japan is not competitive in terms of system technology.

(3) Cutting-edge element technology (e.g., precision machinery, advanced materials, such as medical equipment, and aerospace parts)

Many small to medium high-tech enterprises exist in this category. It is relatively rare that the high yen affects companies under this category.



Members of the Laboratory visiting Toyota Motor Corporation

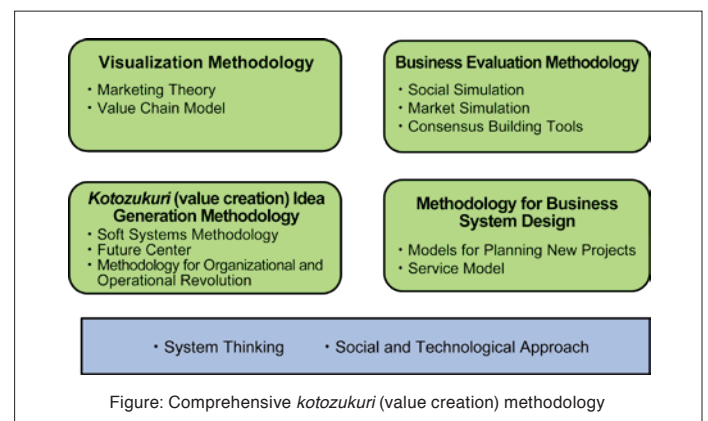
Our research to date has found Japan's strength in the principle of self-sufficiency (vertical integration), improvement cogitation, and reactive risk management. We believe that the Japanese-style management can be improved in the future by focusing on global procurement, system thinking, and proactive risk management.

Development of *Kotozukuri* (value creation) Methodology

The Laboratory conducts research into various methodologies concerning *kotozukuri* (value creation) based on system thinking and a socio-technical approach for issues below (see the figure). We are developing a comprehensive methodology which integrates the humanities and science, such as visualization, *kotozukuri* (value creation) emergence, quantitative business evaluation, and system design for projects. The Laboratory's current research includes the following:

- environmental city design
- social system design for ultra compact cars
- car sharing
- personal aircraft
- global product planning methodology
- sustainable urban redevelopment design methodology

The Laboratory holds regular meetings and welcomes your participation.



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