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Servitization and Corporate Culture

Keiko Toya[1,2,3]

[1]Graduate School of Global Business, Meiji University, Tokyo, Japan
[2]European Institute of Japanese Studies, Sweden
[3]Stockholm School of Economics, Sweden

ABSTRACT

The shift of manufacturing industries to services is progressing, particularly in developed countries. However, the manufacturing industry has a unique corporate culture, which is considered to be an obstacle to servitization. This study aims to clarify how national culture affects corporate culture and how corporate culture affects manufacturing servitization in the Swedish manufacturing industry.

Keywords: Servitization, Corporate culture, Obstacles, Uncertain avoidance, Long term objectives

INTRODUCTION

The shift to services in manufacturing is gaining momentum, especially in developed countries (Davies et al., 2006; Tukker and Halen, 2003; Baines et al., 2007; Cook et al., 2006). This is due to the following reasons: lower margins for physical goods due to price competition, technological advances that make it more difficult to differentiate quality, and a shift in customer needs from simply physical goods to solutions with physical goods as one of the resources (Wu et al., 2006; Kawakita, 2010; Toya et al., 2016). This is considered to be the case.

It has been noted that when firms are converting manufacturing to services, employees actually believe that the unique corporate culture of the manufacturing industry is influential (Thiptarajan et al., 2019; Hellur and Fujimono, 2017; Nasomboon and Yamamoto, 2017; Nasomboon and Yamamoto, 2017; 2024). The unique culture of manufacturing is referred to as "monozukuri" in Japan. This is a concept that carries a specific meaning and is considered more than just "manufacturing" or "production." It includes craftsmanship, commitment to quality, ingenuity, continuous improvement (kaizen), teamwork and onsite knowledge, and the entire spirit of creating products with pride.

However, the question arises as to whether the entrepreneurial culture of manufacturing companies, such as technology orientation, commitment to quality, and respect for craftsmanship, is unique to Japan, as it exists worldwide. A survey conducted by the Toya (2023) SSC found that Sweden and Japan have a higher level of commitment to manufacturing than Japan. In addition, differences in corporate culture are thought to be strongly related

to national characteristics and other factors. And it is necessary to verify whether these are obstacles to servicization.

This study will determine, based on quantitative surveys of Japanese and Swedish companies, what kind of corporate culture is fostered in the manufacturing industry and how it influences servitization.

Table 1. National culture and organizational culture measurement items

Table 1-1: National culture

UAI 1:	"If you make a compromise you are weak and others will take advantage of you. <-> To compromise is a sign of strength."
UAI 2 :	"Showing emotions at work or in public is childish and a sign that you cannot control yourself. <-> Expressing positive emotions at work shows your commitment and involvement."
UAI 3 :	"I prefer to be independent of authorities, even if they are honest and competent. <-> I prefer to depend on authorities if they are honest and competent."
UAI 4 :	"A good manager does not need to have precise answers to all the questions of his/her employees. <-> A good manager is an expert who knows more than his/her employees."
UAI 5 :	"_At work, structures, procedures and rules should be clear; ambiguity should be avoided at all costs. <-> At work ambiguous structures, procedures and rules bring out the creative side of people."

Table 1-2: Manufacturing corporate (Monozukuri) culture

Monozukuri Quality 1:	We prioritize standard manufacturing methods over methods tailored to meet individual customer requests.
Monozukuri Quality 2:	The manual verification by our employees is essential for ensuring the quality of our products.
Monozukuri Quality 3:	We consider that products delivered to the customers must be of the perfect quality.
Monozukuri Strehgth 1:	Our company has a unique culture deeply rooted in craftsmanship.
Monozukuri Strehgth 2:	Our strength is advanced manufacturing technologies.
Monozukuri Strehgth 3:	Our strength is advanced product development capability.

LITERATURE REVIEW

The following is a review of previous studies on national culture, organizational culture, manufacturing, and the stages of manufacturing servitization.

National Culture

Hofstede (1980) extracted four dimensions of national culture from a survey of 110,000 IBM employees in 40 countries: power distance, uncertainty avoidance, individualism, and masculinity. Among them, the most distinctive

ones in the comparison between Japan and Sweden are uncertainty avoidance and masculinity. The study was then extended to a six-dimensional cultural axis (Hofstede & Bond, 1988) with the addition of Confucian values, and further extended its study from national culture to corporate culture (Hofstede, Neuijen, Ohayv, & Sanders, 1990). The study examines 20 organizations in the Netherlands and Denmark and identifies six cultural dimensions of the practices that define organizational culture. The study concludes that national culture measures differences in values, but that there are few differences in values between organizations and that organizational culture differs as actual practices. The practices here are extracted as the following six dimensions: process-oriented/results-oriented, employee-oriented/work-oriented, belongingness/professionalism, openness/closeness, control/laissez-faire, and normative/realistic.

Classification of Organizational Culture

Schein (1990) defines organizational culture as "the shared rules by which organizations achieve external adaptation and internal integration." Organizational culture influences the behavior of organizational members. The shift of manufacturing industries to services means that they must be designed, managed, and sold differently than before, and this entails a change in the behavior patterns of the constituents. Therefore, there is a relationship between organizational culture and the servitization of manufacturing.

Cameron and Quinn (1999) proposed a competing values model that categorizes organizational culture into four types based on two axes: internal integration and external adaptation, and stability and flexibility. The former axis emphasizes internal cohesion within the company and tends to foster a sense of belonging based on trust, while the latter tends to adapt to the external environment and the needs of customers, suppliers, and others. The latter axis, stability, is divided into a tendency to maintain stability through strict control of internal rules and regulations and a tendency to emphasize creativity and change.

Toya et al. (2016) identified the following six barriers to servitization through qualitative research, including interviews with manufacturing industry management and group interviews with employees: organizational culture, lack of medium- and long-term evaluation of business, lack of medium- and long- term evaluation of human resources, low mobility of human resources, and, industry structure The second most frequently mentioned issue, following the lack of human resources, is the organizational culture of the manufacturing industry. In addition to the manufacturing culture described below, this includes a seed-oriented attitude, which considers service as an after-sales service, and a desire for short-term profit.

Manufacturing Concept

As mentioned earlier, monozukuri culture refers to craftsmanship, commitment to quality, ingenuity, continuous improvement (kaizen), teamwork and onsite knowledge, as well as the spirit of creating products with pride. In Japan, this term has taken root not only among those involved in the manufacturing industry but also among the general public. There were two phases in its origins. The first was during the period of

Japan's social and economic recovery after World War II. The recognition that the manufacturing industry contributed greatly to Japan's postwar recovery brought about a sense of pride in the manufacturing industry among the Japanese people, as well as a global recognition of the industry. The second phase was then the period in the 2000s when the share of the manufacturing sector in GDP and the working population declined and the focus of the economy shifted to the service sector. The Ministry of Economy, Trade and Industry (METI), particularly concerned about the decline of the manufacturing industry after the collapse of Lehman Brothers, planned to restore the status of "monozukuri" (manufacturing) and implemented various measures to revalue technology and craftsmanship. According to METI, monozukuri is defined as "the activity of continuously creating superior products and services based on advanced technological capabilities and skills" (Basic of Promotion of Monozukuri Core Technology, 1999). Because of these histories, monozukuri is deeply rooted in Japan's industry and economy, and is positioned as a "culture" and "value system" that is more than just manufacturing technology. However, it has been pointed out that the emphasis on technological capabilities and the pursuit of perfection in product quality in monozukuri culture are specific to the organizational culture of the manufacturing industry and not limited to the Japanese manufacturing industry.

Manufacturing Servicing Phase

Kim and Toya (2018) classified five stages of servitization in manufacturing firms. Level of servitization was grounded in the notion of staged servitization and was scaled on the basis of the attributes of the services provided by the firms (Oliva and Kallenberg, 2003; Vandermerwe and Rada, 1988). It was coded as 1 if a firm provides product-oriented and transaction-based services to 5 for if a firm offers relationship- and process-based services. The higher the score in this category, the more sophisticated and process-based services that a firm provides to its customers.

SURVEY AND MEASUREMENT SCALE

The survey was conducted by selecting approximately 20,000 firms by size (large, small, medium, and micro firms) from eight manufacturing industries according to the Japanese industry classification. 2,000 firms were also selected in Sweden using the same sampling criteria. The survey was conducted in January 2024, and the number and response rate were 2,618 (13.5%) for Japan and 97 (4.85%) for Sweden.

Table 2: Sample size and number of samples and recovery rate.

	Japan	Sweden
Number of requests for response	20,061s	2,000s
Number of responses	2,618s	97s
Response rate	13.05%	4.85%

RESULTS OF THE SURVEY

Regarding national culture, Japan and Sweden had significant differences in means for six of the seven items. The most significant differences were in the perception of managers (A good manager is an expert who knows more than his/her employees), management's attitude when there are differences of opinion (If we disagree, management will try to reach consensus), and whether compromise is a sign of strength or weakness (Compromise is a sign of strength), and whether compromise is a sign of strength or weakness (Compromise is a sign of strength). Japanese tend to demand a high level of knowledge from their supervisors, view compromise as a weakness, and believe that management should take a firm stance when there is a difference of opinion. In other words, it can be thought of as demanding a clear hierarchy. On the other hand, there were no significant differences in the six items of manufacturing culture, including craftsmanship and technology orientation, indicating that what is unique to Japanese organizational culture in the manufacturing industry is also shared in Sweden.

Furthermore, the relationship between manufacturing organizational culture and the servicing stage of manufacturing was found to be monozukuri r, with four of the six items having a positive correlation (one of the items had a negative correlation due to the opposite direction of the question). 'We prioritize standard manufacturing methods over methods tailored to meet individual customer requests.' has a correlation coefficient of −0.35. The more a company emphasizes customization to individual customers, the higher the level of servicization is reached. The correlation coefficient for 'Our company has a unique culture deeply rooted in craftsmanship.' was also 0.35, indicating that companies with a high level of craftsmanship reached a higher level of servitization. The correlation coefficient was 0.35. We consider that products delivered to the customers must be of the perfect quality. Our strength is advanced product development capability.' was 0.26, indicating that perfection of product quality and advanced product development capability also have some relationship. These results are for Japanese manufacturing executives who believe that their commitment to monozukuri culture is hindering the servicization of manufacturing in Japan.

Table 3: Means of Japanese and Swedish national culture (t-test).

Items (Semantic Differential Method)	Means		T-test
	JP	SE	** : p<0.01
UAI 1	2.93	4.15	**
UAI 2	3.31	4.10	**
UAI 3	3.22	2.98	†
UAI 4	3.40	1.83	**
UAI 5	2.00	2.91	**
LTO 1	3.14	3.17	n.s.
MAS 1	2.72	3.99	**

Table 4: Means of Japanese and Swedish Monozukuri (organizational) culture (t-test).

Items	Means JP	Means SE	T-test **: p<0.01 *: p<0.05 † : p<0.10
Monozukuri Quality 1	2.48	2.67	
Monozukuri Quality 2	3.57	3.94	*
Monozukuri Quality 3	4.04	4.26	
Monozukuri Strehgth 1	3.40	3.49	
Monozukuri Strehgth 2	3.55	3.31	
Monozukuri Strehgth 3	3.03	3.49	**

Table 5: Correlation between organizational culture and the five stages of servicization.

Items	Correlation Coefficient With Servitization Stage5
Monozukuri Quality 1	−0.337
Monozukuri Quality 2	0.019
Monozukuri Quality 3	0.062
Monozukuri Strehgth 1	0.364
Monozukuri Strehgth 2	0.107
Monozukuri Strehgth 3	0.244

CONCLUSION

This study examines how national culture and organizational culture affect servitization in manufacturing by comparing Japan and Sweden. Academically, the findings reveal that national culture influences servitization through organizational culture. In addition, from a practical perspective, two findings are particularly valid. In Japan, many managers perceive Japan's unique manufacturing culture as an obstacle to servitization, but it was found that this is a common organizational culture in the manufacturing industry, and that Sweden has a similar one at a similar level. Furthermore, some of the elements of the common manufacturing culture were found to be facilitators, not obstacles, to the servitization of the manufacturing industry. Japanese manufacturers do not need to abandon the strength of their manufacturing culture to promote the shift to services.

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