THE STRATEGIES OF A JAPANESE SUPPLIER RESILIENCE IN DEVELOPING SUPPLY CHAINS - CULTURAL DIMENSION OF CREATING ADVANTAGE

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Abstract

Resilience strategy can be implemented in a passive and active way. The passive one refers to concentrating on protecting the supply chain against the threats occurring in the environment. Active attitude means searching for new solutions whenever a supply chain has been disrupted or anticipating unfavorable phenomena and tendencies as a result of previous implementations of adequate solutions, e.g. in terms of excessive supplies. A resilient supply chain is the one in which e.g. entities are aware of creating value for a client along with the simultaneous meeting the jointly adopted rules. A resilient supply chain ensures functioning continuity in spite of external factors' influence, both the predictable and unpredictable (entirely or partly) ones. The conducted research indicates that the features of Japanese culture enhance involvement in many new supply chains and thus make them resilient to threats. The systems and strategies of Japanese companies based on national features are characterized by the strong internal integration, which is significantly weakened by its susceptibility to impacts of external factors. Working in such a company provides the sense of unity in thinking and operating, difficult to imagine for a representative of Western culture (which prefers individualism in attitudes and behaviors). In the article the author presents cultural characteristics of the Japanese and, to confirm their impact on resilience strategies, discusses one of the global network organizations the entities of which operate as suppliers of many components, not only limited to automotive sector.

Keywords: Supply chain, resilience, resilient supply chain, Japanese culture

1. INTRODUCTION

The problems of resilience remain a well-known research area. Recently, as a result of intensified threats and their increasingly frequent effects (terrorist attacks, natural disasters, rapidly spreading epidemics, etc.) and hence disrupted supply chains, many researchers study the problems of supply chain efficiency, in particular the one referring to automotive sector, in order to investigate methods helpful in developing such a supply chain which remains resilient to all threats and uncertainties resulting from the situation in the global environment [1-3]. Manufacturing companies are located all over the world and thus are subject to numerous dangers, both economic and natural. For years businesses have been searching for the criteria to be followed in the process of a supply chain development that will result in benefits for every participant, in terms of both supply and demand. In this respect supply chain is approached as a group of enterprises cooperating in various functional areas, e.g. mining, manufacturing, trading, logistics and other service providing companies in order to increase the added value for all its participants, all clients and the remaining stakeholders [4]. The existing studies, covering the problem of supply chain efficiency, are far too much focused on costs and performance [2], [5], which in the current unpredictable times offers far too narrow perspective on the functioning of the cooperating entities. Today it is not the cost which is of utmost importance, but rather the value delivered to a client. The value provided results from numerous factors occurring in the particular supply chain components involving people who create the community from which workers, clients, suppliers and other stakeholders are recruited. Their preferences, habits, recognized values can turn out helpful, on the one hand, in avoiding conflicts resulting from stereotypes and prejudices but, on the other, can facilitate establishing lasting interpersonal relations based on social capital. The development and functioning of global supply chains

remains a high risk task, depending on a particular country culture. Knowledge in this respect is an indispensable element of competencies presented by a modern supply chain manager. It is highly likely that Japanese culture enhances the development of resilient supply chains. The purpose of this article is to discuss the significance of cultural dimensions for the construction of a resilient supply chain which, in consequence, allows obtaining competitive advantage on the global market. Moreover, the author points to these cultural features which facilitate such resilience. Further in the article the author characterizes Japanese, global network organization which entities operate as the suppliers of many components, not only in automotive industry. Through cooperation with competitors all over the world and resources redundancy (in many sites the same goods are produced) this organization is capable of creating value expected by clients.

2. RESILIENCE OF SUPPLY CHAINS

Resilience represents the concept described in many areas of science. In psychology resilience is explained as the phenomenon responsible for positive adaptation of children and teenagers prone to high risk, misfortunes and/or traumatic events. The concept of resilience emphasizes the importance of protecting factors and mechanisms in the course of growth and development [6]. In materials sciences resilience refers to the ability for absorbing energy and maintaining stability [5]. Christopher M. and H. Peck [2] define resilience as the system capacity to return to its previous state and a possible change to a more desirable level than the one preceding disturbances. The concept of resilience is associated with organizational capacity for managing difficult and unpredictable situations. Resilience is established over time to support the survival of an organization or a network and its development in adverse conditions in order to continue strengthening its performance [7]. Having considered the above presented definitions it can be assumed that resilience is characterized by a double nature, i.e. by adaptability resulting from the observed and initially defined rules, as well as by investigating new opportunities based on which organizations or networks can maintain competitive advantage. More and more frequently resilience [8] appears along with costs, flexibility and innovation, as the strategic dimension of a client oriented supply chain [9]. The entities responsible for co-creating value for clients and other stakeholders have to search for an adequate strategy characterized by adaptability and creativity not to lose business. The results of studies performed by PWC confirm that 75 %* experience at least one major supply chain disruption per year and 42 %* experience a major disruption below tier 1 [10]. It proves that the resilience strategy should be constructed in every component of a supply chain. Any resilience strategy can be carried out in a passive or active way (see **Table 1**).

Table 1 Active and passive approach in the resilience strategy of a supply chain, modified [8]

Passive approach	Resilience strategy of a supply chain	Active approach
• Emphasis on visibility and transparency of IT systems (provided they are integrated) along the entire supply chain • Cooperation with certified suppliers only • Focus not only on possible treats with suppliers, but all logistic relations with other stakeholders	• Developing a system which can identify, monitor and reduce risks and disruptions in a supply chain, as well as react fast, economically efficiently, considering values for a client and other stakeholders	• Establishing partnership to reduce risks • Developing supply chains based on national culture dimensions • Acceptance for the excess of suppliers, resources • Supply chain mapping to identify weak points, identification of the so-called moments of truth • Analyzing alternative planning, what if? • Integration of the supply chain planning phase with management

The passive one refers to focusing on supply chain protection from environmental threats. Active attitude means investigating new solutions in case of a supply chain disruption. A resilient supply chain represents the

one within which entities are e.g. aware of creating value for clients along with the simultaneous meeting the commonly adopted rules.

Owing to its interactive nature *resilience* is usually not measured in a direct way. It can be inferred based on measuring two separate dimensions: risk and positive adaptation [11, 12]. In general, risk reflects the type and level of danger for an organization survival or rather its supply chain, whereas positive adaptation refers to all these behaviors and manifestations which confirm overcoming difficulties. Such behaviors include establishing partnerships which, in consequence, can facilitate the process of information sharing between business practice and public as well as local government sector. One more manifestation of adaptation takes the form of such location of plants which makes them the least exposed to unpredictable effects of economic, social and geographical threats. Yet another good direction for adaptation is taking advantage of the experience gained and entering the related sectors (product diversification). The participants of the World Forum 2013 presented recommendations for enterprises developing supply chains to get involved in joint actions within the framework of the discussed area in order to establish resilience of the entire supply chain [13]:

- Harmonized legislative and regulatory standards,
- Improved information sharing between governments and businesses,
- Building a culture of risk management across suppliers,
- Use of exercises to “stress test” assumptions and plans,
- Common risk assessment frameworks.

The guidelines provided are very general and do not include the sources of uncertainty, types of risk and, most of all, the given country culture in which a particular supply chain is functioning. The final result of compliance with the above listed guidelines is the development of a resilient supply chain the characteristics of which are presented in **Table 2**. A resilient supply chain is the one in which e.g. entities are aware of creating value for clients and, at the same time, follow the jointly adopted principles.

Table 2 The characteristics of resilient and non-resilient supply chains

The characteristics of a resilient supply chain	The characteristics of a non-resilient supply chain
The awareness of constructing joint value for clients	No trust between partners
Defined and shared rules of common conduct	No joint goals
Supply chain agility	No information policy
Good coordination of flows between supply chain components	No jointly established new, subsequent services
Joint marketing program	Insufficiently developed IT
Resources redundancy, no single supplier limitations	No form of partnership occurs, the functioning of entities is rather based on fighting

3. THE STRATEGIES FOR SUPPLY CHAIN RESILIENCE

The strategy for supply chain resilience aims at the establishment of such conditions which can protect the entities creating the discussed chain against numerous types of risks and the unmeasurable insecurity. Based on the subject literature studies, conducted by J. Witkowski and the author of the hereby article, Japanese culture facilitates the development of efficient and resilient supply chains. The characteristics of such supply chain are presented in **Table 3**.

Table 3 Efficient and flexible supply chains, modified [14], [15], [4]

Features	Efficient supply chains		Flexible supply chains	
	Efficient supply chain	Resilient supply chain (protecting against risk)	Reacting supply chain	Flexible supply chain
Demand uncertainty	Low	Low	High	High
Supply uncertainty	Low	High	Low	High
Definition	Efficient supply chain aims at achieving the best possible cost structure by eliminating waste and processes which do not create value	Sharing risk in chains with threatened supplies by sharing and exchange of resources	This strategy consists in fast reaction to the changing needs of clients and the volatile market	Flexible supply chain is characterized by marketing orientation towards client's needs when the risk of supplies threatened by the lack of stock or other resources occurs
Focus on	Costs and time reduction	Costs of protection against the risk of disrupted chains	Adaptability to the rapidly changing needs of clients	Market orientation and the capacity to meet diverse market niches simultaneously
Nature of the product	Functional	Functional	Innovative	Innovative
Source of competitive advantage	Costs, quality, availability	Costs, flexibility, quality	Speed, innovation, flexibility	Speed, innovation, flexibility
Product life cycle	Long	Long	Short	Short
Relations with suppliers	Transactional approach	Relational approach	Time management	Partnership approach
Information transparency	Desirable	Desirable	Necessary	Necessary

The awareness of national culture dimensions can constitute the criterion in the process of supply chains development and functioning. **Table 4** presents these types of culture which facilitate the establishment of resilient supply chains.

Table 4 The characteristics of Japanese culture, modified [16]

Supply chain nature	Key dimensions of cultures and the degree to which Japanese culture meets the condition of a resilient supply chain	Consequences for the development and functioning of supply chains

Resilient supply chain	Strong avoidance of uncertainty 83 %	• tendency towards long-term strategic partnerships, • relatively small number of suppliers, • at least double supply sources, • strict formal and legal regulations, • emphasis on procedures, standards and regulations, • extensive control, security, current supervision systems, • complicated procedures and certified access rights, • making decisions based on the verified, confirmed and comprehensive information, • slow decision making which minimizes risk, • multiplication of the decision-making bodies, lengthened decision making path (consultations, reports, analyses);
	Collectivism 46 %	• high information transparency, • collective decision making, • triggering activity and involvement of all employees, • frequent negotiations and adjustments, • slow decision making process, • difficulties in defining individual responsibility regarding effects and actions, • compulsion for considering interests, needs and expectations of diverse internal and external stakeholders;
Resilient supply chain	Permission 42 %	• openness to changes and innovations in technique and management, • high level of general activity and entrepreneurship, • flexibility in supply chains configuration, • preference for innovation oriented people, • support for pioneering, bold solutions, • optimism in behavior and activities, • underestimating potential dangers and risk management, • lack of consideration for stereotypes in the selection of business partners, • openness to new entities, including supply chain intermediaries, • higher importance of logistics companies and transactional brokers;
	Long-term nature 84%	• evolutionary computerization of a supply chain, • proportional division of risk and benefits between the supply chain components, • long planning procedure, • engaging many entities in collecting, processing and developing information necessary for the plan, • emphasis on autotelic culture oriented values, goals and patterns,

		• long timeframe of goals, priorities and tasks, • focus on developing rules of conduct, • respect for history, tradition, established social standards, • focus on long-term investments, • profit and loss analysis in a longer perspective, • preference for long-term experience;

4. CASE STUDY

The data published on Toyota Bushoku Group's website show that since 2011 each consecutive year sales increase has been recorded. In 2015 sales presents the level of 1380.4 billion yen against 983.7 billion in 2011. This growth refers to operating income, which in 2012 was 20.3 billion yen and in 2015 32.3 billion (see **Table 5**). The presented data confirm that the company is doing well in spite of numerous threats which occurred in 2011. Its investments in Europe have, so far, been resulting in the smallest share of income structure. In Poland the group has opened three production plants.

Table 5 Bushoku Groups [17]

	America	Asia and Oceania	Europa and Africa	China	Japan	Total
Regional management and collaboration HUB	1	1	1	1	Global Mainstay HUB	4 + 1
Production plants	17	24	14	19	10	84
Plants	x	x	x	x	18	18
Other than automotive	x	x	x	x	4	111
Net sales at the end of March 2015 (billion yen)	287.6	312.9 (including China)	101.1		678.8	1380.4

The author has conducted an interview with an employee of the production control department for the purposes of the hereby article. Enterprise X employs about 600 people of which nonproductive workers make 10 %. The division manufactures seats for three different clients, within the framework of separate projects in which clients have different requirements. It results in the fact that the company has many various suppliers, different for each project. The suppliers, especially outside Bushoku Group, are checked if they meet the requirements set by the company. The procurement and production department is located in Belgium (Regional Hub) where the selection of suppliers is performed and the cooperation rules for enterprises are defined. The local division does not have access to such information. It, however, decides about the supplier of nonproduction goods. The expenditure procedures are very strict. The purchase of e.g. office tapes requires the approval of five persons, whereas spending over PLN 5000 has to be approved by the President (the boss of the analyzed unit). In terms of transport it cannot be ordered by an individual employee without the superior's, client's or supplier's confirmation that it is required. The company cooperates with 5 forwarding companies and has its own small warehouses with goods in stock for 2 days. Unfortunately no rules, principles or the so-called moments of truth have been written down to offer guidance in an unpredictable situation if it suddenly occurs. In case of a missing car and the inability of re-dispatch the company negotiates the terms and conditions of delayed production or delivery with a particular client by e-mail or phone. The costs resulting from such

situation are shifted to the supplier (there is no risk sharing associated with terrorism, attack or theft). A similar situation takes place with reference to employees; each of them has a clearly defined scope of duties and is held responsible for the mistakes made. Employees support each other and the needs of internal stakeholders are taken into consideration, e.g. by organizing additional transport. The company itself takes care of local community by getting involved in the initiative aimed at the restoration of the green square in the city. The company does not have access to the current production status of suppliers. The supply conditions, information about the delivery, data about the level of stock and manufacturing capacity are discussed by phone or e-mail. The total of about 1000 invoices are issued monthly in relation to all three projects. Each company employee is responsible for several suppliers. About 34 suppliers can be identified with each project. In general, the group and the enterprise take care of information transparency; however, it is not true for the lower levels. Management board accepts employees' activity and involvement, but does not develop or impose any plans for employees' engagement at all cost. It is assumed that each project will be successful if the co-creating workers present adequate interest and involvement in it. It is worth noticing that some typical Japanese solutions cannot always be adopted. Recently the functioning of three quality circles has been initiated, after some time only one of them continues its functioning. To sum up, a significant discrepancy has been observed between the description provided about the entire group seated in Japan and that what is actually true for its Polish division. Employees do not feel here as if they were one family, instead they assume that they were employed by the management board to exploit them. It is reflected in their salaries which are not high. Income inequality represents one of the reasons responsible for disruptions in the supply chain functioning. The division President is very interested in creating working conditions in accordance with the Japanese culture, however, as of today he is focused on the costs incurred in running the division in order to carry out long-term goals set by the company.

5. CONCLUSION

In the analyzed case study, presenting the division of a Japanese company seated in Poland, certain components of the carried out resilience strategy can be noticed. The key decisions referring to the structure of suppliers and the rules of cooperation with them are made in Belgium headquarters. The local unit in Poland implements only the guidelines decided at a higher level. The local management is responsible for making decisions related to the deliveries of supporting nature, indispensable for providing office and administrative services. Operating workers control and check each other. They are also subject to numerous procedures.

The lack of confidence in local workers is quite visible, including those at management level. The resilience strategy is effectively carried out, however, without presenting its rules to local employees. The Japanese company assumes that, most of all, the local workers have to present high awareness of costs importance.

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