

## **Fit as Matching in Distribution Flexibility Strategies: An Exploratory Multiple Case Study**

*Kangkang Yu, University of New South Wales, kangkang@unsw.edu.au*

*Jack Cadeaux, University of New South Wales, j.cadeaux@unsw.edu.au*

*Hua Song, Renmin University of China, songhua@ruc.edu.cn*

### **Abstract**

In response to highly volatile and uncertain environments, many firms have implemented flexible strategies and many researchers have discussed the topic of flexibility. This paper focuses on distribution flexibility, the aspect of flexibility related to downstream supply chains. This work conducts an exploratory multiple case study and analyses four Chinese manufacturers from different industries to explore the construct of distribution flexibility and how organisations make strategic choices among different dimensions of distribution flexibility. The results show that given different circumstances, firms might choose an appropriate distribution flexibility strategy which fits with their distribution environment in the sense of matching focused on physical distribution flexibility, demand management flexibility, coordination flexibility, or distribution flexibility coalignment.

Keywords: Distribution flexibility, strategy, fit as matching, case study

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## Introduction

Economic globalisation, the development of information technology, and the diversification of consumer requirements increasingly cause enterprises to face highly volatile and uncertain environments. In such instances, existing routines and procedures may be inappropriate to the extent that a mismatch has occurred between organisational responses and external demands (Fredericks, 2005). Flexibility, the ability to change or react to environmental uncertainty with little penalty in time, effort, cost or performance (Upton, 1994), has become more and more important. The highly volatile and dynamic nature of the contemporary business environment also forces many channel firms to make adaptations in channel relationships and to modify the rules of exchange as circumstances change (Sezem and Yilmaz, 2007). However, it is not clear how such choices are made, how to implement them and what benefits they generate. Furthermore, few studies of flexibility have developed taxonomies that distinguish among different categories or types of organisations and contexts that systematically consider strategies within each type. It is in this context that we pose our research questions: (a) what is distribution flexibility? And (b) how does an organisation develop a distribution flexibility strategy in order to fit a certain distribution environment context?

## Literature Review

As one dimension of supply chain flexibility, distribution flexibility is defined as the ability to change distribution processes in an efficient or effective manner to adjust to requirements of both direct and indirect customers. Since a supply chain performs two distinct types of functions: a physical function and a market mediation function (Fisher, 1997), distribution flexibility, as a kind of capability embedded in the supply chain, is not only about physical distribution activities (Duclos, Vokurka and Lummus, 2003; Williamson, Spitzer and Bloomberg, 1990) which are supply-oriented, but is also about demand-oriented activities. Zhang, Vonderembse and Lim (2002, 2005) first divided distribution flexibility into two dimensions: physical distribution flexibility and demand management flexibility. They defined physical distribution flexibility as the ability of a firm to adjust the inventory, packaging, warehousing, and transportation of physical products to meet customer needs, quickly and effectively, while demand management flexibility is the ability of a firm to respond to the variety of customer needs for service, delivery time, and price, quickly and effectively. In addition to these two dimensions which are ways of managing uncertainty through flexible internal or external resource utilisation, a third dimension, coordination flexibility refers to the development of relationship management processes between partners through integrative capabilities (Achrol, 1997; Heide and John, 1992; Sezen and Yilmaz, 2007). Thus, distribution flexibility is not single dimensional but arguably is composed of these three dimensions.

However, few studies of flexibility have developed taxonomies that distinguish among different contexts. The concept of fit has served as an important building block for theory construction in

several areas of research (Aldrich, 1979; Van de Ven and Drazin, 1985). The natural selection model, developing the strongest argument for an environmental perspective, posits that environmental factors select those organisational characteristics that best fit the environment (Aldrich, 1971). In using the expression “natural ecological selection”, Aldrich and Pfeffer (1976) emphasise that social organisations are moving toward a better fit with the environment in a process of organisational change controlled by the environment but which does not necessarily involve progress to more complex or higher forms of social organisation or to better organisations. Fit as matching, either between the environment and the flexibility strategy, or between the network structure and the flexibility strategy, reflects the population ecology or natural selection approach to adaptation, which is one of low strategic choice and high environmental determinism (Hrebiniak and Joyce, 1985). In this view of fit, organisations enjoy virtually no control over exogenous factors but have to match their decision making processes to the demands of their external environments.

### **Case Study Method**

The overall objective of this research is to build and validate theory about distribution flexibility strategies, to the extent that there are few studies in this area and there is not a consensual framework for analysing distribution flexibility. Due to the exploratory nature of this paper, we adopt the case study method recommended by Yin (1984) and Eisenhardt (1989). As we want to compare the differential challenges and responses in multiple firms, we develop a multi-site study (Creswell, 1998). The studies of each site instrumentally focus on the same issue and we thus use purposeful sampling (Stake, 1995), since we want to explore the differing environmental conditions. We select manufacturing firms based on different dimensions of flexibility drivers or reasons why flexibility exists in different situations (Jack and Raturi, 2002). A number of studies of flexibility have represented the drivers at the outset and suggested that flexibility is mainly needed in order to deal with two variables: intrinsic uncertainties and the variability of outputs (Corrêa, 1994; Vickery, Calantone, & Droge, 1999). In this study, we analyse four manufacturing firms that represent different flexibility drivers that reflect a cross-classification among levels of two dimensions similar to the one made by Nonaka and Nicosia (1979) (Table 1): (a) the level of *uncertainty* which concerns the quality of environmental information and (b) the level of *heterogeneity* which concerns the quantity of information.

To maintain data consistency and improve richness in detail, we use a semi-structured interview approach (Yin, 1994). The interviews were conducted between December 2009 and January 2010. In each firm, the key informant participated in a one and a half hour interview. Qualified key informants ranged from middle managers and senior managers to presidents/vice presidents all of whom have been involved in the distribution decision-making process or worked with the downstream direct customers. In order to increase the reliability of the case analysis, we use an interview protocol and develop a case study database as recommended by Yin (1994). The transcripts of the records were first sent back to interviewees for accuracy and then coded and checked by members of this project for credibility, which were also audited by other researchers invited to establish dependability and conformability (Lincoln and Guba, 1985). In addition, multiple sources of evidence such as industry databases, product catalogues, company magazines and websites, brochures and so on were used to help establish convergent validity (Yin, 1994).

**Table 1 - Company Profiles**

Uncertainty Heterogeneity	Lower	Higher
Lower	<i>Company P (Clothing industry)</i> -Suits are their main products; -Men's suit styles in China have not changed much; -The level of competition is lower as they focus on county-level cities.	<i>Company Z (Solid/liquid separation industry)</i> -Mainly produces a filter press; -The traditional market is shrinking; -Prices fluctuate rapidly; -Upgrading of the products accelerates.
Higher	<i>Company Q (Pharmaceutical industry)</i> -Three product lines; -200 categories of products; -Demand has not changed too much; -Only a few strong competitors; -Strict R&D, lasting 5 to 7 years.	<i>Company J (Household appliances industry)</i> -Many household appliances categories; -More intensely competitive market; -Many big competitors quickly entered; -Similar products at a lower price; -Five generations of soymilk maker.

### Case Analysis

According to the literature review, distribution flexibility consists of three dimensions: physical distribution flexibility, demand management flexibility, and coordination flexibility. The following passages discuss how each of these is manifested in each of the four case studies.

With changing demands for product sizes, *Company Z* stopped producing machines of small sizes and gave priority to large sizes. Furthermore, the quick-draw machine was developed for saving water and the washing method was changed from a vertical type to a frame type. All these represent the capability of *Company Z* to produce products characterised by numerous features to meet special customer specifications (Vickery, Drog and Markland, 1997). With changes in product size, the transportation tools of *Company Z* also changed from small vehicles to large ones, showing a capability to vary transportation carriers (Lumms, Duclos and Vokurka, 2003). These capabilities constitute a high level of physical distribution flexibility.

*Company J* also makes adjustments to operational activities. They increase investment in R&D continuously and led one major technology evolution every two years, which constitutes a high level of launch flexibility (Sánchez and Pérez, 2005). The *Company J* interviewee also added that:

*“The competition in retail is becoming higher in recent years, but we can adjust product lines and produce a ‘Fighter’ periodically which has a high price performance ratio to gain market share quickly.” (Miss Han, Public Relations Manager, Company J)*

This is a special case of modification flexibility, the ability to effectively implement minor changes in current products in reaction to complex situations of market competition (Pagell and Krause, 2004). On the arrival of the busy season, the warehouse management department of *Company J* will start planning methods to adjust storage capability such as renting an external warehouse, updating machines, and increasing the number of barcode scanners, etc.

Volume flexibility is also a kind of physical distribution flexibility, which is defined as the ability to effectively increase or decrease aggregate production (Cleveland, Schroeder and Anderson, 1989). In off seasons, there is a workshop of *Company P* specifically dealing with foreign orders as the time schedule for these orders is very strict.

Compared with the other three companies, the manufacturing process of *Company Q* is somewhat rigid. If material price is increasing, *Company Q* will try to ensure normal operation of the original product lines. Unless it is absolutely necessary, they will not choose to stop producing. Both facts suggest that they are satisfied with a lower level of physical distribution flexibility.

However, *Company Q* invests more in its capability to adjust marketing. Although the products of *Company Q* are rarely sold together, sometimes they use policies like free goods allowances for good dealer sales performance. *Company Q*'s sales policies also change with price fluctuations. The interviewee of *Company Q* illustrated that:

*“When Palonosetron Hydrochloride was on the market, we fixed a price of 800 RMB each unit. But later we met with two situations: first, other competitors were on the market and their prices were much lower at about 500 RMB each unit, so we will follow the lower price; second, when we joined in bidding where only two of four or five would win the bid, the price dropped to 300 RMB each unit.” (Mr. Tian, Marketing Manager, Company Q)*

After the so-called “Poison Milk” incident in 2008, the market for the soymilk maker became hot. *Company J* could not rely only on early promotion of soymilk as a traditional drink. So they tried to enhance the level of customer service such as offering “Three Free” service nationwide and establishing a spare parts management department to deal with the quick updating of products. In promotion, they increased investment in advertisements and promotion activities, established health clubs in several cities, and proposed an idea of “billions of cups of soybean milk free drinking”. All of these represent the capability of *Company J* to sense long-term trends in their market area and to frequently adjust their selling practices (Kumar, Stern and Achrol, 1992).

Compared with the former two companies which have unique offerings, the services of *Company P* and *Company Z* are common to other competitors such as custom-tailored service for special body sizes and group orders that *Company P* provides and the commitment to offer free after-sale services for the entire year made by *Company Z*. Also, both of their price strategies are less flexible. For example, the price given to either distributors or branches is fixed by *Company Z*'s headquarters. In addition, *Company P* will not follow up when suppliers increase prices.

Finally, coordination flexibility defines a bilateral expectation of willingness to make adaptations as circumstances change (Heide & John, 1992). For *Company P*'s distributors, there are no fixed targets of sales and the rewards are very flexible. The interviewee of *Company P* explained that:

*“Last year three stores won IVECO. This year one won BMW..... Every year we organise touristic activities for outstanding stores as a reward for the top 20 stores..... Sometimes, we evaluate not only sales performance, but also comprehensive quality such as whether the stores cooperate with the headquarters well.” (Mr. Liu, Regional Marketing Manager, Company P)*

In addition, *Company P* tried to add new franchisees in county-level cities and even allowed managers of high performance stores to open new stores in other places by themselves.

When agents meet with difficulties, *Company Q* will help agents to deal with them even though this is not included in the contract. *Company Z* also tried their best to support their distributors. The interviewees from both companies gave examples as follows:

“When agents join in the bidding, some products are easy to deal with, while some are very hard, so we will support them. If they need us to give a price concession, we will do this to help them win the bid.” (Mr. Tian, Marketing Manager, Company Q)

“For distributors, we offer supports like welcoming customers, showing them around the factory and giving gifts to them..... If they require more, we will try to offer more, either more spare parts or more gifts.” (Mr. Zhang, Marketing Manager, Company Z)

Company Z also wants to develop more distributors not only in the mature coal washing industry but also in other new areas connected with solid and liquid separation. So some customers may be transformed into distributors to the extent that they may have more experiences and relations than the focal firm does in a new untapped market.

Quite differently, Company J established very complex distribution channels. On one hand, they signed formal strategic alliance contracts with many big retailers; on the other hand, they have very strict standards for the “5 Star” stores and other agents and inspect their operations and training managers regularly. Through these regulations and formal contracts, Company J kept very strong mutually beneficial relations with all distribution channel members. In addition, Company J planned to increase by 6000 retailers and establish more than 800 “5 Star” stores in the coming 2-3 years in order to refine their existing distribution network.

## Conclusions

The first contribution of this study is to clarify the definition and dimensions of distribution flexibility which is not well developed in existing theories. The comparison across cases shows that each company implemented a distinctive distribution flexibility strategy to adapt to their specific distribution environment (Tabel 2), which constitutes a condition of fit as matching between strategy and environment (Venkatraman, 1989). Thus, the major theoretical contribution of this study is its use of contingency theory to explore alternative forms of fit in developing different kinds of distribution flexibility strategies. However, this paper has some limitations common to all case studies, such as the limited generalisability of results and the subjectivity of the analysis. Future research should evaluate a wider random sample of more firms in different industries as well as employ a longitudinal study to trace the dynamic processes using dyadic data collected from both manufacturers and distributors.

**Table 2 - Fit as Matching in Distribution Flexibility Strategies**

Uncertainty Heterogeneity	Lower	Higher
Lower	<p><i>Company P (Coordination flexibility focused)</i></p> <ul style="list-style-type: none"> <li>-High coordination flexibility</li> <li>-Average physical distribution flexibility</li> <li>-Low demand management flexibility</li> </ul>	<p><i>Company Z (Physical distribution flexibility focused)</i></p> <ul style="list-style-type: none"> <li>-High physical distribution flexibility</li> <li>-Average coordination flexibility</li> <li>-Low demand management flexibility</li> </ul>
Higher	<p><i>Company Q (Demand management flexibility focused)</i></p> <ul style="list-style-type: none"> <li>-High demand management flexibility</li> <li>-Average coordination flexibility</li> <li>-Low physical distribution flexibility</li> </ul>	<p><i>Company J (Distribution flexibility coalignment)</i></p> <ul style="list-style-type: none"> <li>-High physical distribution flexibility</li> <li>-High demand management flexibility</li> <li>-High coordination flexibility</li> </ul>

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