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Information Asymmetry and Risks of Enterprise Clusters

Wei Jianfeng

Institute of Business Administration, Henan University, Henan University Kaifeng 475004, China

Abstract: The risk of enterprise cluster is one of the main issues in academic circles, but the existing researches mainly discuss the risk induced by life cycle of cluster and network lock-in. From the cluster organization characteristics and using the basic theories of information economics, this paper studies two typical cluster risks, namely "implicated" risk and "lemon market" risk, its purpose is to reveal the nature of the risk of cluster and the deprivative mechanism. The differences between this paper and the previous studies are: (1) It studies the risk mechanism of clusters formation based on the information asymmetry theory; (2)It researches the cluster risk not only from the relationship between producers and consumers, but also from the relationship between producers.

Key words: Eterprise cluster, information asymmetric, risk

INTRODUCTION

Enterprise clusters not only have unique competitive advantage, but also have their unique risk. Tichy thought, cluster products also exist life cycle, and it will finally form a "structural risk" (Tichy, 1998). Pouder and St. John analysis the possible risks in the development process of industrial clusters based on the evolution of dynamic cluster. In the founding stage, because of external economy, low cost of entry, information superiority to promote enterprise agglomeration and innovation, there has a higher growth rate in cluster benefit. As the time goes on, the initial agglomeration economy and other innovation environment forces which constitute the regional are created a similar atmosphere which inhibits innovation (Pouder and St. John, 1996). The above theories mainly explored from the angle of life cycle that the cluster organization could not maintain permanent competitive advantage. On the mechanism of cluster risks, some scholars explored from specialization and cluster network relations, Markusen pointed out that in the study of the relationship between the success and the risk of a cluster, the cluster may gradually become into a closed system because of its increased specialization. The more successful the regional cluster, the more likely it develops into a closed system, then it may gradually lose the strain capacity in the changing market, risks continue to accumulate and competitiveness steadily sank down, until the cluster disappeared (Markusen, 1996). Harrison studied the cluster risk from the cooperative network relationships within the cluster, when he was studying the danger of Italy industrial district cooperation forms he pointed out that "the network relationship is a double-edged sword". The network relationship is based on trust,

but trust may become the protective power of traditional methods and inhibit innovation (Harrison, 1994). Abrahamson and Fombrun held the same view. They thought that the local "embeddedness" network relationship is not only the decisive factor of cluster advantage, but also the root of why cluster development is "locked" (Abrahamson and Fombrun, 1994).

Academic circles mainly focus on the competitive advantage of the cluster, which has important significance for rational reflection on the cluster risk. These scholars have realized that the cluster has a life cycle at the same time when they recognized the advantages and disadvantages of cluster is accompanied, especially in terms of the "network" relationship, cluster is "locked" in the development process, so that it result in risk. But the academic research on the cluster risk is not comprehensive and their insights are single, such as network lock is only starting from the producers, while ignoring the buyers, especially the game relationship between two parties. This paper starts from the cluster organization characteristics, which is based on the basis of the principle of information economics, and explores the two closely endogenous risks which related to cluster organization characteristics. The final purpose is to expand the cluster risk theory.

COLLECTIVE GOODWILL AND "IMPLICATED" RISK

In the general market transactions, the seller often need to rely on advertising, promotion and other activities searching for the consumer, so it need to pay a higher search cost or a information transmission cost. The seller's search cost is the price for which the seller must

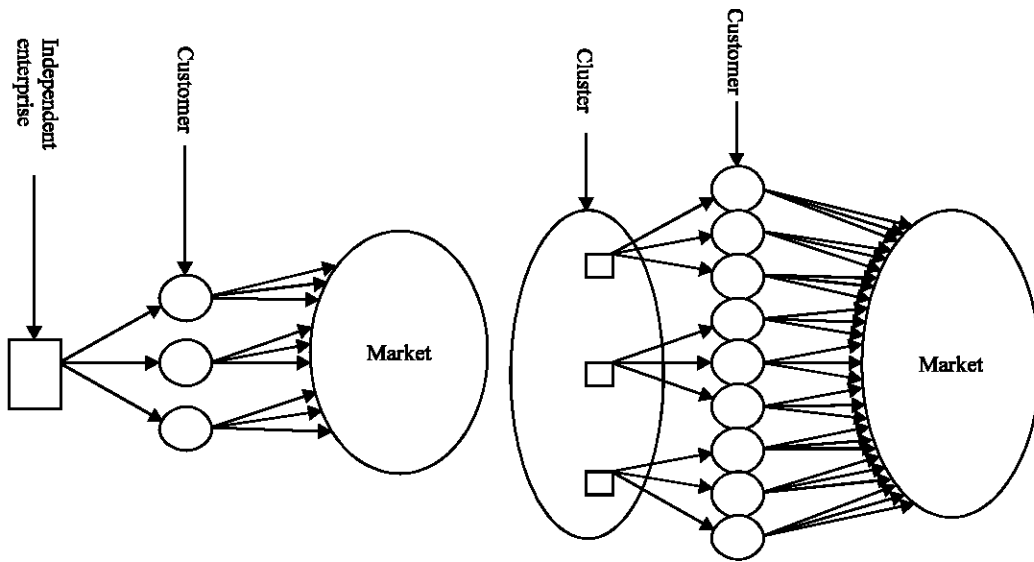


Fig. 1 Commodity information disseminating scope of independent enterprise and cluster

pay when he is expanding the market. Because the advertising and other information production activities can lower the customer's search cost, it can attract more customers to buy their products. Not only hereat, the independent enterprises in the space is exclusive in the searching action, enterprises through advertising and other information production activities separate their products from other products, and they gradually establish a firm's goodwill.

The cluster consists of a plurality of enterprises, thus forming a plurality of information sources. The information disseminating scope and the number of information sources are positively related, and in theory, the commodity information diffusion width of cluster is much larger than the lonely enterprises'. If a cluster's commodity information transmission do not have the difference from the independent enterprises', namely they all use advertising, according to the law of exponential growth of information dissemination, the initial value of commodity information transfer in clusters is n times of the individual enterprises' scale, so the final number of recipients who receive commodity information from clusters is independent enterprises' n square, which means that the range of cluster market is much larger than the independent enterprise'. Independent enterprise's commodity information disseminating scope and clusters' commodity information disseminating scope are shown in Fig. 1.

In reality, cluster enterprises rarely attract the sellers through advertising and other high strength mode because commodity information disseminating mechanism of cluster is radically different from independent

enterprise's. Cluster is a cluster of enterprises in a limited geographical space, and products which are produced by the enterprises are similar and related, assuming that a company in cluster communicates with the buyer through search efforts and that the buyers transact with seller at producing state, but when the buyer enter the cluster he will see more enterprises and more kinds of goods, because the existence of lower search cost, the buyer must "shopping around", the final transacting object may not be the original "source of information", but the other enterprises in the cluster. Enterprises' profit from "advertising" is not complete exclusive and it is difficult to lock the transaction object, so enterprises are insufficiency in using advertising. In the aspect of the communication with customers, cluster has its unique style and advantage. Once a cluster is created, the cluster itself can produce some kinds of "advertisement" effect, this kind of advertising effect comes from three aspects: the first is produced by the buyer or consumer's "word of mouth", if the buyer implement transaction with an enterprise in the cluster, in the spread of the products information, the content of information dissemination is often no longer limited to trading companies, but the entire cluster, while the enterprise is ignored. The second is the media attention effect. Because the cluster consists of many enterprises, the scale effect may easily catch the government and the news media's attention, the government and the news departments often become the commercial information publishers. The third is a multi species commodity can satisfy the diverse needs, and also satisfy the wholesaler's "delivery" requirements, wholesalers are more willing to buy products in the

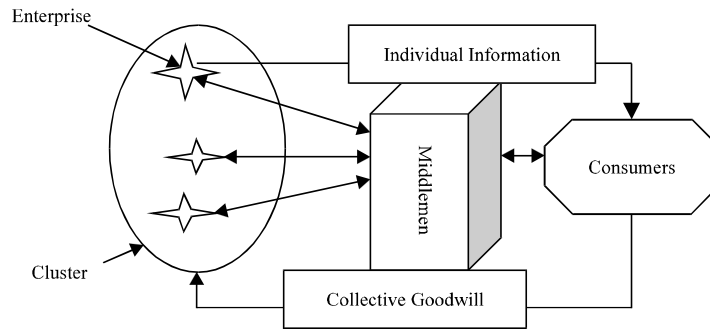


Fig. 2: Traders and consumers for cluster cognitive style

cluster. The above three reasons lead to commodity information of clusters disseminating in a wide range, and it will form the collective goodwill.

Cluster risk with the nature of cluster organization and information dissemination mechanism are inseparable. Enterprise cluster is a kind of symbiotic relationship, symbiotic relationship can produce symbiosis or systemic risk. Compared with isolated dispersed enterprise cluster goodwill is collective rather than individual. Cluster risk properties is different with the risks of independent enterprises. In the cluster, once an individual or a minority enterprise appeared the following questions, such as cut corners in the production, doping ShiJia result in serious decline in product quality, or in bad faith and other major events. Once these problems were widely spread, not only the problem of the enterprise credit is affected, but also can impaired the clusters goodwill as a whole. In some cases, a large number of buyers exit clusters market in a short-term, all or most of the cluster enterprise transactions fall or even interrupt trading. This phenomenon were called "collective punishment" risk in this paper.

Collective punishment risk comes from the collective goodwill. Cluster collective have unique marketing advantage, in which companies can produce to create the synergies "market" under certain conditions will become the "collections" disadvantage. If cluster at the beginning of the formation, enterprise production high quality product, the consumer use of cluster enterprise products and satisfaction is higher, it is likely to spread positive information, positive information overlay the collective goodwill gradually formed. If the individual enterprise to produce more high-quality products and consumer awareness, and other enterprise product quality is the same, the reputation of the cluster will be due to the ascent of individual enterprise product quality further ascension, because consumer evaluation of cluster more was conducted by individual companies. Similarly, cluster

development in a certain period, once appear, "inferior" individual enterprise and shoddy products, consumers hardly satisfied after use, can produce dissatisfaction to cluster products, although the cluster other enterprise product quality remains the same.

Individual behavior can lead to "smear" whole "derogatory effect", "a glorious all glory, broken" is the main characteristics of the cluster market. The buyer including intermediaries and final consumers, it is mainly middlemen that directly deal with cluster enterprise. If middlemen and cluster trading for several times, they have of cluster enterprise product quality and credibility of a more comprehensive cognition, the quality problem of the individual companies will not much affect their judgments of the cluster. But in the end, consumers and wholesalers have bigger difference, consumers can't distinguish between different enterprise product quality, they are often of the cluster by individual cognition, because ultimately decided to market is the final consumers, but a cluster rejected products by consumers, intermediaries are powerless. Cognitive style of consumers and wholesalers to clusters as shown in Fig. 2.

Under the condition of enterprise scattered, individual companies appear problem, such as production and sales of low quality products, fake and inferior products, or other serious breach, just damage individual goodwill. Cluster market concentration caused by buyer, rapid spread between negative information more easily between the buyer; Cluster size of the market is bigger, negative information more easily spread by media; Due to the "same" cluster products, production enterprises lack clear labeling. Therefore, besides those clusters often deal with wholesalers, many consumers to cluster the merits of the product quality is difficult to distinguish between different enterprises, products tend to cluster as a homogeneous or difference is smaller. Therefore, Therefore, problems arise in the cluster enterprises, the consumer in order to avoid the risk and avoid the whole

cluster. Therefore, the enterprise agglomeration conditions, even if the "broken" behaviors happen in individual companies, other companies can't escape from being joint of bad luck. Enterprise individual behavior is likely to lead to collective goodwill, even form a credibility crisis, led to numerous merchants out of cluster. Henan Dazhou non-ferrous metals industry cluster is emerged in the 1980 s. It is a recycling of waste products to smelting and pretreating of the cluster. It developed rapidly at the beginning of the formation, but in late 80 s, some enterprise in processed products such as aluminum ingots with the nonmetallic material, in order to extract the usury, problems are disclosed, the whole cluster trade shrinking rapidly in just a few months and even interrupt, almost all existing enterprises out of the market. The market recovered slowly through the cluster enterprises and local domain government years of efforts. In 2003, the news media reported Yongtai, Xuchun two ham companies in Jinhua, Zhejiang, in order to enlist in the sight of profits, using sick pigs, dead pigs and old mother pigs leg as raw material, soaking with highly toxic pesticide dichlorvos, producing "anti-season ham". "Jinhua ham" brand was destroyed in oneday.

“LEMON MARKET” RISK WITH ASYMMETRIC INFORMATION

Cluster enterprises have more symmetric information than others, because they are adjacent in the geographical space, their products are interrelated, and their networks of social relations lead to information flow. All of these three aspects lead to the Symmetric information in the cluster enterprises. Storper and Venables (2004) think that a "regional information muddy field" (buzz) that particular, various forms of information exchange environment between the main parts will be able to lead enterprises to relatively well understand each other in technical information, product quality, cost structure and revenue levels. Symmetric information has two sides, on the one hand, the rapid flow of information between enterprises is conducive to innovation and progress in the cluster, on the other hand, highly symmetric information between producers will become the basis of a risk. If corporations are well known, the cluster will adopt the imitation strategy, but goal may be the high-quality companies within the group, or poor-quality companies within the group. Orientation depends on symmetric and asymmetric information between the companies and ultimate consumers. Firms tend to imitate the high-quality companies with symmetric information; on the contrary, companies tend to imitate poor-quality enterprises.

"Lemon market risk" is : individual companies begin to produce poor quality products, and then, as the "buzz", this phenomenon gradually spread: The companies compete to imitate poor-quality corporate enterprises, and the market in the cluster will eventually be full of poor-quality, fake and shoddy products. This market is similar to The Lemons Market¹. Therefore, this risk is called "the lemon market risk".

Symmetric information between producers is the necessary condition for "lemon market risk", and asymmetric information between producers and consumers is the sufficient condition for "lemon market".

High-quality products cost more, and the price is higher than low-quality products. We assume the high quality is A, low quality products is B. If Price A/marginal cost A > Price B/marginal cost B, namely, premium of producing high-quality products is sufficient to compensate for the cost to the improvement, the enterprise has the motivation to produce high-quality products; If Price A/marginal cost A < Price B/marginal cost B, the enterprise will produce poor-quality products. In a cluster, if some companies use the poor-quality raw materials and intermediate goods substitute high-quality ones to reduce costs, or reduce process standards to fall the products quality, as a smaller proportion of the price decline, such enterprises in the short term will get more revenue. Considering producers in a cluster are clearly understanding of each other's product cost, quality and revenue, so companies that produce high-quality products will soon discover this behavior, and begin to imitate this behavior with the short-term interests, if companies are competing to imitate, the market will eventually be a low-quality products market.

Lemon market is caused by asymmetric information between buyers and sellers. If buyers and sellers can get symmetric information on the cluster market, the buyer will offer different prices to distinguish poor-quality products from high-quality products. High prices will be paid for high-quality products and low prices for poor-quality products. Due to information is asymmetric on the market, the buyer may put all the cluster as homogeneous products, in this case, the customer will be based on the amount between high and low quality products to provide a ratio of the average quotation, when the average prices cannot support the cost of the high-quality products, the companies have to use poor-quality materials to reduce the cost, resulting in a decline in product quality. When the customer realized that the ratio of poor-quality products on the market increase, it will further reduce the average price, as the cycle repeated, final average price would be too low to leave any high-quality products on

¹Akerlofg (1970) proposed the "lemon market model" proved that adverse selection reduces the efficiency of market transactions and leads to shrinking market.

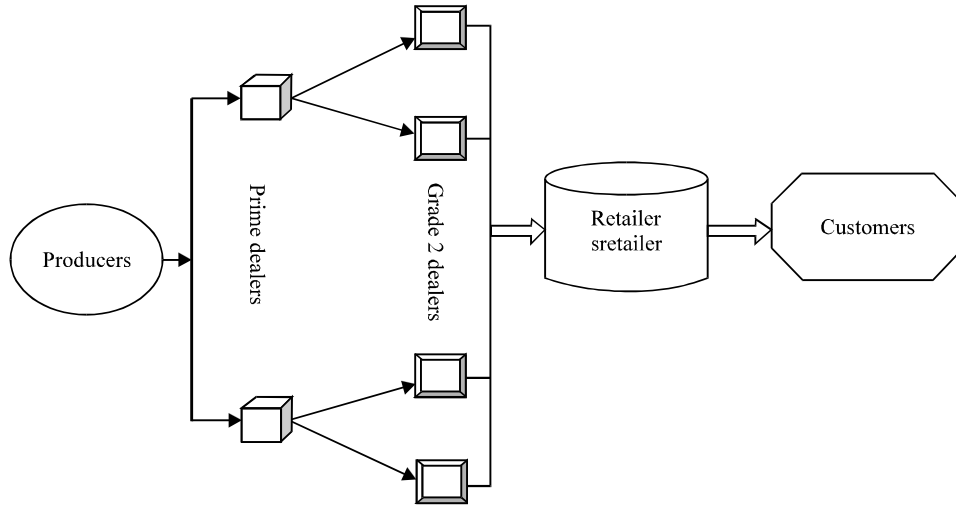


Fig. 3: Cluster commodity trading channels

the market, and poor-quality products will flood the entire cluster market.

The Cluster Lemon Market and the "used car" market analyzed by Akerlofg (1970) have not only similarities, but also differences. First of all, on the "used car" market, there is asymmetric information between the sellers, but on the cluster lemon market, information between producers is symmetric. Secondly, on the "used car" market, buyers and sellers are "one-off" deal, the buyer is difficult to distinguish the quality of goods; on the cluster lemon market, the buyer is separated into two types, one-off transaction and multiple transactions. Therefore, "lemon market" risk appears on the cluster market has more complex reasons.

As transactions between scattered consumers and cluster enterprises are disposable, there is a high degree of asymmetric information between buyers and sellers. But under normal circumstances, cluster enterprises and consumers are mostly not direct transactions, but to complete the transactions by Intermediary activities of brokers.

Ho Street dried bean cluster enterprises in Henan, for example, their products to consumers at least need to go through four links, shown in Fig. 3.

Prime dealers (small intermediaries) contact with about 20 producers, they sell products to grade two dealers (larger purchase and sale enterprises), and grade two dealers trade with large numbers of out-cluster retailers. For prime dealers, as they have repeatedly deal with producers, they are well-informed, and search costs are lower; for grade two dealers, as they trade with more than one prime dealer and part of producers, they are also well-informed. From the perspective of symmetric

information, between prime dealers, grade two dealers and producers have highest symmetric information and a relatively clear understanding of product quality; out-cluster retailers followed; the large number of final consumers is little known about the quality of products, they have a high degree of asymmetric information with producers. Although brokers know the quality difference, combined with their high price sensitivity, consumers cannot get the information, which cause the outer-cluster retailers tend to operate low-priced products. These tend eventually leads to production of low-priced products. In producers' view, cluster enterprises began producing high-quality products, but some companies to obtain higher returns and more sales, they may be first to produce poor-quality products, while other companies realized, they all turned to produce poor-quality products. When the most enterprises in the cluster are producing poor-quality products, product prices further down and the product quality is further reduced. The result is that when the product quality is reduced to the extent that consumers can not be tolerated, the buyer will withdraw from the market, thus cluster decay.

CONCLUSION

The "joint responsibility risk" is a "moral hazard" of individual enterprise to the overall risk and closely related to the cluster nature of the organization. The native reason that the risk arises is the asymmetric information between producers and consumers. "Joint responsibility risk", as the most typical cluster market risk, indicates the differences between group risk and individual risk. The symmetric information leads to the similarities between

"The Lemon Market risk" and "joint responsibility risk". But they also have differences, asymmetric information between producers and consumers is one of the reasons which will cause "lemon market" risk; instead, symmetric information between producers is another reason to cause the risk. "Joint responsibility risk" is associated with individual corporate behavior, and other companies are jointly and severally damaged. Though this risk occurs suddenly, "the lemon market" risk is gradually accumulated, like the problem initially produced in individual enterprises, but eventually evolves into collective behavior. Individual short-term rationality and collective long-term rationality conflict in cluster risk, and the fundamental way to solve such risks is to eliminate barriers to asymmetric information between producers and consumers.

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