

Cluster Marketing Models and Strategies: The Implications Thereof in the Chinese High-Tech Industry

Hongbo Tu
Wu Han Institute of Technology

The phenomenon and model of industrial cluster marketing is a cross-linking subject on the industry cluster theory and traditional (geographical) marketing perspectives. Nevertheless, it begs the question, does high-tech industry cluster marketing relate to the traditional industrial cluster phenomenon? This paper focuses on a discussion about whether there is a clear existence of a cluster marketing model to start with. Therefore, the concept of cluster marketing model was defined, thereafter its related areas were determined, and finally a theoretical model for a high-tech cluster marketing model was established. Working with this theoretical framework model, the author proposed the possibility that the cluster marketing model of traditional industries could apply to high-tech industry clusters. The central idea was that the marketing operating mechanisms were the core of the cluster marketing model and that three types of traditional cluster marketing mechanisms (function - interest, regulation, and contract mechanism) can successfully be applied to high-tech industry clusters. As a result, six cluster marketing models for high-tech industries were developed for proposal.

INTRODUCTION

Cluster marketing here is defined as the convergence of distinct activities within an industrial cluster, with the view to achieve, as a whole, organizational objectives by participating more effectively in the competitive market process and the larger macroenvironment, ensuring competitive advantage through better efficiencies and innovation.

Michael Porter claims that industry clusters are “in a particular area under a particular area, with a group of interconnected companies, suppliers, related industries, and specialized institutions and associations.” (Porter, 2007) In other words, within industry clusters, not only is the competition very important to a series of related businesses and other entities, but it also often extend downstream to the customer, continuing the river that have relevant skills, technology, public input, complementary products or companies. It extends even so far as when a foreign company continues its investment in the industrial cluster and thereby lends itself to become part of the cluster. Ultimately, these various interrelated aspects of cooperation and competition, ensures that the industrial clusters create a competitive advantage.

Furthermore, significant cluster marketing advantages can be gained through synergies in

market research, developments new markets, access to current and new markets, market share, product development, distribution channel development, dissemination of information, sales promotion, etc. through cooperative strategies (Zhu, 2003).

China has a total of 53 state-level high-tech development zones, most of these have formed one or more mature high-tech industry clusters with great anticipation for future developments on exclusive high-tech zones. High-tech industrial clusters do not necessarily differ significantly in their cooperative composition or organizational structure compared to traditional clusters such as within the Fujian tea industry, Wenzhou shoes industry, or Shengzhou neckties industry for which cluster marketing was implemented and considered suitable. This is based on the continued successes achieved in recent years through increased competitive advantage in these industries as argued by various scholars (Zhu 2003, 2005; Mu 2007; Feng, 2007)). Furthermore, Guangguan Zheng and Xuemei Chen endeavored to highlight some of the structural elements within the cluster marketing organization. Traditional industrial cluster marketing is divided into three specific models, namely, the “collective marketing” model, “see the customer” model and “share marketing channel” model. They concluded that “cluster marketing adds a significant competitive advantage to small and medium enterprises to develop new markets and an effective means to self-development.” (Zheng and Chen, 2006). Therefore, strong clusters contribute to a start-up firm’s survival whilst it continues to strive for long-term establishment.

Nevertheless, based on certain variables for example the competitive nature, product obsolescence, and speed of technological change and others, there remain some unanswered questions in terms of high-tech industrial clusters, such as whether the introduction of the traditional marketing model for an industrial cluster is suitable for a highly evolving, complex, and knowledge based high-tech industry? Therefore, one must ask which cluster marketing models are likely to be the best suited for adoption into high-tech clusters and is there a theoretical model to draw from to build these marketing models. In considering these questions and analyzing the industrial cluster theory whilst developing marketing ideas and methods, one could possibly present viable options to improve competitiveness within China's high-tech industry clusters.

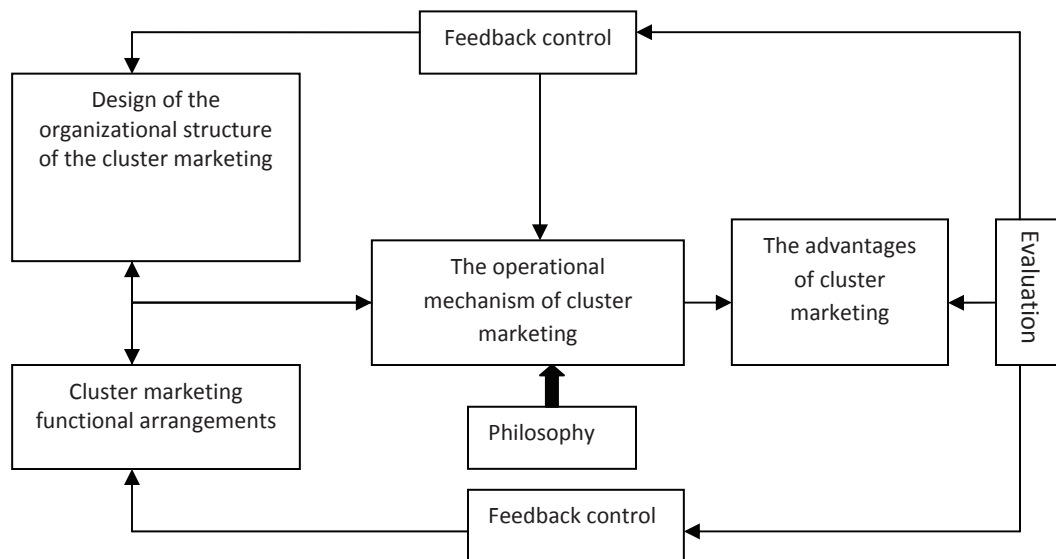
This paper consists of five parts below: research of the marketing model, designing the organizational structure for cluster marketing, analyzing the operational mechanism of cluster marketing and advantage of cluster marketing and the cluster marketing model for high-tech industry cluster.

RESEARCH: THE MARKETING MODEL

To date, to define the concept of marketing models, marketing theorists do not have a more generally accepted view, may be involved in this concept is too broad, or because many of the concepts we use this point of our view, there is no uniform open-minded. The author looked at domestic and foreign relevant research literature found that even “marketing mode” as its theme or as the article keyword mostly “ignore” on the definition of the concept itself, but more set out directly the form of marketing model. This paper intended to deal with the rigor and the convenience of discussion, the definition of the marketing model is in order to achieve an organization’s marketing goals, make a marketing operation mechanism under the guidance of the current marketing idea. The operation mechanism is stable and can be copied. The concept of marketing mode is a high degree of abstraction and generality. It is descriptions and definitions of the composition of the marketing system, the various components of the function, operation

and controlling rules. It is knowledge about the marketing system features and operational discipline.

FIGURE 1
A THEORETICAL MODEL OF THE HIGH-TECH INDUSTRY
CLUSTER MARKETING MODEL



Designing the Organizational Structure for Cluster Marketing

Cluster marketing is the spontaneous cooperation of enterprises within the cluster market behavior, to transform co-marketing awareness into concrete action of the cluster; the primary problem is to think about the micro-organizational structure in terms the cluster marketing. This problem is not solved; it is void and the lack of foundation of cluster marketing. The main participators of the industry cluster marketing include trade associations, chambers of commerce, academic groups, marketing intermediaries and various firms in clusters.

The organizational structure of the cluster marketing has four forms as illustrated below (see figure 2).

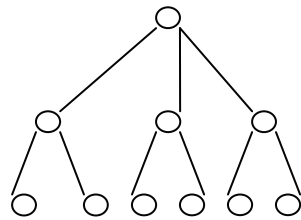
a) Hierarchical Structure.

Hierarchy is based on the capabilities of the level of cluster marketing to build a marketing organization, as described in the text the cluster brand clusters model and leading enterprise traction model. In terms of the brand cluster model, the top layer relates to a regional brand, the middle layer the corporate brand, and the lower layer the product brand. With regards to the leading enterprise traction model, at the top of the cluster formation is the leading enterprise and its marketing networks which carry out market research and technology development in order to meet the core needs of industry clusters. The middle layer is to provide operational activities such as packaging, logistics, and other services, whilst at the bottom end of the cluster formation are suppliers in support these enterprises.

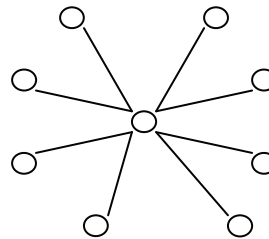
b) Star-shaped Structure.

The star-shaped structure is characterized by only one center, and is a single layer. Its structure is followed by many common organizations such as an association or technical institute at the center of the cluster marketing. It is more loosely organized, and relies on the industry or technical associations' activities with regular dissemination of ideas, diffusion technology, establishment of rules, and the exchange of information.

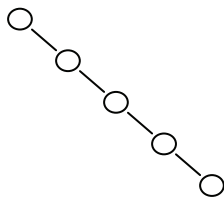
FIGURE 2
THE ORGANIZATIONAL STRUCTURE OF CLUSTER MARKETING



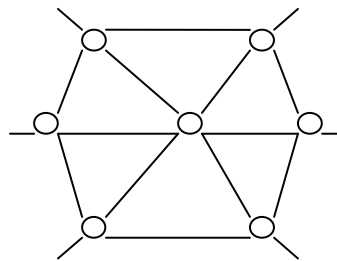
a) Hierarchical structure



b) Star-shaped structure



c) Linear chain structure



d) Network

c) The Linear Chain Structure.

The linear chain structure is unique, each node represents a marketing function of the virtual organization, each virtual organization can have multiple entities to complete a single or a number of marketing functions, but the virtual organizational structure is linear, that is, except the starting point and end point. Furthermore, each virtual unit occurs only with the other two links.

d) Network Structure.

The network structure is characterized by each node and can be associated with multiple nodes. There is no center, and the network structure is open. Marketing activities within a traditional industry cluster typically use the “see the customer” model and “share marketing channel” model based on this structure, whilst the high-tech industry clusters’ “channel network sharing” model can also be considered (discussed below).

Various studies on marketing activities within traditional industry clusters have found that the above-mentioned hierarchical structure, star-shaped structure and network structure are commonly used, but did not use a linear chain structure. The hierarchical structure, star-shaped structure, and network structure can be directly introduced to the marketing of high-tech

industrial clusters. Furthermore, because high-tech industrial clusters use information technology at an advanced and sophisticated level, it can accept and adapt to new concepts faster than traditional industries, therefore, a linear chain structure is also suitable.

Cluster Marketing Functional Arrangements

The design of a cluster marketing organization must take into account, not only, how to arrange the marketing function in the cluster organization, but also the cluster marketing operation mechanism, and the relationship between them, as shown in Figure 1. Cluster marketing functions include, but not limited to, researching markets, developing new markets, access to markets, increasing market share, product development, brand building, channel development, dissemination of information, and sales promotion. Organizations within the cluster should, therefore, endeavor to effectively allocate marketing resources adequately, dominate by a common marketing philosophy, strengthen the cluster marketing operating mechanism through repeated interaction, reach speedy consensus on issues, and ensure the implementation of systems and contracts on sharing cluster marketing functions under this arrangement (marketing operating mechanism).

The Operational Mechanism of Cluster Marketing

The operational mechanism of cluster marketing is under the guidance of the cluster marketing ideas, and upon which the co-participants in the cluster marketing make the rules of cluster marketing operations, specific measures on distribution benefits, incentives and constraints, and the way in which to exert control over the activities of cluster marketing. Function - interest, regulation, and contract are three basic operational mechanisms of cluster marketing.

Function - Interest Mechanism

The function - interest mechanism in the cluster refers to the commitment and benefit from the marketing function which should reflect the rights (interests) and responsibilities for management principles. There is no such thing as a “free dinner” in a manner of speaking, in the clusters marketing co-operation as all actors in the system need exhibit full commitment. The function - interest mechanism is the foundation for a clusters marketing organization to exist and to develop. In this instance it does not matter whether the traditional industry cluster “collective mark” model, “see the customer” model or “share marketing channel” model have followed this principle or not, the commitment remains the same. In the “collective mark” model the embodiment of this principle is in the Chamber of Commerce dues-sharing system. Secondly, in the “share marketing channels” model the embodiment of this principle is in the effectiveness of marketing channels, the power-sharing in the distribution channels, and the resulting benefits. Lastly, in the “see the customer” model the embodiment of this principle is that firm’s sales incentive output is according to “see customer worker” performance. The function - interest mechanism also can also effectively be implemented to high-tech industry cluster marketing.

Regulation Mechanism

The regulation mechanism refers to the relationship between industrial cluster marketing organizations and the operating regulation within a certain cluster culture, industry association (technology), the company management system, and the organization’s relationship rules. In the “collective mark” model, this mechanism is embodied in the membership system of trade

associations, Chamber of Commerce, professional associations (standards), and common rules of behavior. In the “see the customer” model the embodiment of this mechanism is in that of the manufacturers, traders, trading companies, of which “see the customer worker” establish the relationship rules between them. In the “share marketing channels” model the embodiment of this mechanism is the tacit understanding of one another, mutual trust, and full cooperation of the channel members. Compared with the traditional industrial clusters, the existence of a variety of Technology Associations provides more choices of rules for various industrial clusters.

Contract Mechanism

The contract mechanism reflects the market exchange relationships. The marketing cluster organization should not only need to be cooperative, but also ensure effective exchange processes. In essence, the relationship within the cluster marketing organization is a kind of economic system based long-term relationships that will be reflected through a contract. The contract is to coordinate the interests of all stakeholders. The contractual relationship is also the most common relationship of a cluster marketing organization and thus, the contract mechanism is a powerful tool for efficient allocation of marketing resources equitably. In the “collective mark” model, the embodiment of this mechanism is based on the sales of goods that are registered to share maintenance costs of trademarks. In the “see the customer” model, the embodiment of this mechanism is the formation of orders after bargaining between manufacturers, traders, trading companies and “see customer workers”. In the “share marketing channels” model, the embodiment of this mechanism is the transactions contract between the members of a channel. Compared to the traditional industrial cluster, a high-tech industry cluster will require more involvement due to complex intellectual property transactions, but cannot change the contract mechanism in its cluster marketing role. Table 1 outlines the elements for the traditional industry cluster marketing model and operating mechanisms.

TABLE 1
TRADITIONAL INDUSTRIES CLUSTER MARKETING
MODEL TYPES AND OPERATING MECHANISMS

		Traditional Industry Cluster Marketing Model Type		
		“Collective mark” model	“See the customer” model	“Share marketing channel” model
Operating Mechanism	Function - interest	Chamber of Commerce dues-sharing – sharing collective mark	Incentive sales according “see the customer worker” performance	The distribution of channel power and the resulting benefits
	Regulation	Industry, Chamber of commerce, professional associations, and common rules of behavior	Manufacturers, traders, trading companies, and “see the customer worker” established the relationship rules	The tacit understanding, mutual trust, and cooperation of the channel members.
	Contract	Based on sales of goods that are registered to share maintenance costs of trademarks	The formation of orders after bargaining and the commission of “see the customer worker”	Transactions contract between the members of a channel

The analysis above clearly shows that any of the three traditional industry cluster marketing operating mechanisms can be applied to a high-tech industry cluster.

The Advantages and Evaluation of Cluster Marketing

The advantages of cluster marketing are mainly the following:

(1) To enable small and medium enterprises (SMEs) to a certain extent, overcome some of its weaknesses, and to integrated cluster strength to market development.

Industrial clusters of SMEs with human, material and financial resources constraints that embark on independent marketing activities usually result in it carried out ineffectively. A large number of enterprises in industrial cluster and inter-related firms that join forces to carry out marketing activities to help SMEs make up for their deficiencies, using the collective power to achieve their marketing objectives.

(2) Contribute to the establishment of regional brands, which will help the development of enterprises within the cluster.

A regional brand is the inevitable result of the development of industrial clusters. It is a manifestation of the core competitiveness of industrial clusters. It represents the main product and image of the cluster. Regional brands have more than a single corporate brand image, and by using the co-operation of many enterprises to collectively work the enrichment and refinement brands, with more extensive coverage can ensure an ongoing effective branding. Compared to regional brands, in many cases, the individual enterprise's life cycle is relatively short and it takes a vast amount of resources over a long period of time to sustain the individual brand effectively. On the other hand, as long as it is not due to inhibiting internal and external factors such as a change in severe technical or natural conditions, cluster contraction or drastic restructuring, the regional brand can be sustained. A regional brand can achieve better competitiveness on a regional industry and enterprise level, enhance regional industry product brands, strengthen corporate brands, bolster cluster brand awareness, and thereby ensure increased brand value on all levels.

(3) The cluster marketing can promote cooperation between enterprises.

Cluster marketing establishes a platform for business cooperation within the group, forming a cooperative mechanism. On the one hand, due to the cluster marketing mechanism by which the market price information is transparent, the corporate generally considers a product differentiation strategy in order to avoid direct price competition. On the other hand, the corporate can more easily access, analyze, and evaluate other firms' product information, to facilitate the coordination of product division among enterprises through the cluster marketing mechanisms, thus contributing to the cluster product diversity, and enhanced cluster attractiveness. Furthermore, firms through the established mechanisms can also promote inter-firm cooperation in other areas, such as product research and development, personnel training, procurement of raw materials, and various other fields of operation.

(4) Help to reduce the cost of operations.

First of all, stronger linkages between industrial enterprises leads to better understand of each other through cluster marketing mechanisms and reduction in transaction costs. Secondly, through cluster marketing, enterprises will be enable to increase their share of trading volume to a certain extent by utilizing the same marketing channels, ensuring decreased unit marketing costs, and creating external economies of scale. Enterprises in the industrial cluster can achieve specialization in the production and trading processes with close cooperation which can lead to better external economies of scale.

In order to assess the advantages of cluster marketing it is necessary to establish a scientific evaluation system based on the four aspects as mentioned above. Once the high-tech industry cluster marketing operation is evaluated after implementation, preemptive action can be taken for

future events, problems can be promptly corrected, and adjustments can be made.

THE CLUSTER MARKETING MODEL FOR HIGH-TECH INDUSTRIAL CLUSTERS

According to above theoretical model analysis, we can divide the high-tech industrial cluster marketing model into the following types based on the difference of the marketing mechanism.

The Cluster-Brand Clusters Model

Clusters which incorporate a strategy using cluster brand clusters are structured on a three-tiered layer consisting of cluster brands, corporate brands and product brands. At the top of the cluster-brand clusters is the cluster brand, whereat a collective brand represents one industry cluster. When there is a combination of industry clusters, it becomes a regional brand, of which various trademark registrations is required, which in turn becomes as a collective mark. A registered collective mark is conducive to businesses within the industrial cluster that are more closely related and synergistic to one another.

The value of the cluster brand is enhanced with the strong support of corporate brands within the cluster. On the other hand, strong product brands play an important role in achieving corporate goals. The implementation of the cluster-brand clusters model endeavors to build brand recognition at all levels, focuses on cluster brand development, and the continual pursuit in maintaining a high value market offering. The concept of cluster brand-building is suitable for certain synergistic grouping of firms including local governments, quasi-governmental agencies, industry associations or the economic cooperation organizations, business organizations or industry leaders.

Channel Network Sharing Model

A channel network within an enterprise is mainly responsible for its own products, but in its channel system where spare capacity is available, other enterprises in the cluster with their highly complementary products can utilize the firm's distribution services. Thus, cooperation of this kind result in further benefits between cluster participants as a whole, and can be further enhanced within the channel by assisting one another in disseminating market opportunities, gathering and sharing feedback on market information, sharing potential channel risks, and ensuring greater added value and competitive advantage through increased efficiencies within the channel.

Furthermore, channels within the cluster try to cooperate and build long-term relationships with its suppliers, who in turn provide them with more flexibility and assortment in the merchandise mix and reduction in purchasing costs, thereby enhancing the channel attractiveness to retailers. Lastly, because of the high-tech industry cluster's good grounding in communications infrastructure, the formation of enterprise clusters can be carried out jointly by B2B and B2C.

Leading Enterprise Traction Model

Due to the technology-intensive characteristics of high-tech products, its products have a natural monopolistic tendency in many instances, which gives leading enterprises in an industrial cluster strong bargaining power. SMEs within a cluster can join the brand club or pay for the usage of a certain established or leading firm's brand or trademark. SMEs can also provide the necessary synergistic products and services for the leading enterprise(s), which will enable the

SMEs to have enough room for growth with reduced risks associated of entering markets. SMEs working with market leaders can also lead to increased production and further enhance brand influence. For example, Wuhan - China Optical Valley optoelectronics industry cluster applies the leading enterprise traction model which consists of two particularly powerful companies: Fiber Home Technologies Group (FTG) and the Yangtze Optical Fiber and Cable Company Ltd(YOFC). They have a higher brand awareness, strong R&D capabilities and financial strength, provide full access to their core technological research and innovations and preform a guiding role, whilst the large number of small and medium enterprises has formed a successful production network with which to achieve sharing of production capacities, strengthening organizational networking and establishing an integrated market-oriented focus.

Exhibition Promotion Model

The exhibition promotion marketing model is the most familiar and most easy to operate and provide the most effortless results of the marketing model. As stated before, China has 53 state-level high-tech development zones, which are created and government-led, whilst playing a key role, with the view to increase China's development in high-tech industries and to promote a culture of competitiveness among them.

The government has endeavored to promote a good image of industrial clusters as a whole, whether attracting foreign investment or upgrading the influence of region industrial clusters. For example, the government as a stakeholder has successfully promoted the Wuhan East Lake high-tech zone through its yearly “Light Fair” since 2007, attracting investments totaling 11 billion Yuan. Three hundred and twenty internationally funded projects have taken root in Wuhan. The development of this project is not only an extension of the optoelectronics industry chain locally, but it is done with the view to promote China's optoelectronics industry to extend into the international industrial chain. “CRE Council” of China Optical Valley has also successfully held five sessions since its inception 2001 and has attracted foreign investment and even other Chinese nationals from other countries. It is clear, not only is the promotion of the “China Optics Valley” brand in the region successful, but promotional efforts in establishing a solid international brand for the “China Optics Valley” has elevated its external image which brought huge economic benefits for the region locally and the country as whole. Testament of this can be seen by means of the “CRE Council’s” efforts in 2006 alone, in initiating 125 contracted projects with the availably 3.07 billion Yuan in capital and the promotion of it in the international sphere.

Cooperative R&D Model

Products of a high-tech industry cluster are regarded as being high value-added, nevertheless, whether it satisfies market demand, needs market testing. A high-tech product life cycle is short, with promotion risks, lead time to product R&D is fraught with further risks, and cooperative research and development of industrial clusters has always been an inherent need. So-called cooperative R&D refers to the corporate seeking “exogenous” resources, competitive advantages, and cooperative innovation. It therefore relies on regional innovation networks, which consist of business and government - financial institutions, research institutions and intermediary organizations, and their technical innovation and product development to effectively enhance SMEs technological innovation and reduce product development risks.

The Marketing Alliance Model

The marketing alliance model refers to a single firm’s marketing activities integrated into

cluster marketing campaign. By means of brand sharing, product matching, market concentration, channel interdependence, combined regional promotion, and information sharing SMEs can obtain a larger scale of cooperation, reduce marketing costs, market expansion, and share the collective advantages that an industrial cluster offers to better withstand the forces of market competition. Enterprises within industrial clusters usually much more forge stable alliances when sharing resources to conduct joint marketing activities. This approach can often be detected within traditional industries clusters, such as Fujian tea industry clusters and the Zhejiang Wenzhou shoes industry clusters. It can aptly apply to high-tech industrial clusters as well.

CONCLUSION

A theoretical model based on the cluster marketing model was established to compare traditional industry clusters to the high-tech industry clusters. Employing this theoretical model, the author analyzed the possibility that the cluster marketing model of traditional industries can apply to high-tech industry clusters, the following are basic viewpoints:

- (1) The concept of any marketing model lends itself to a high degree of abstraction and generality. Nevertheless, it also lends itself to the descriptions, definitions, and composition of the marketing system, of which include various components of the functional, operational and controlling rules. In this paper, it is an understanding about the cluster marketing system features, characteristics, and operational discipline. At its core, is the cluster marketing operation mechanism, and should be stable and can be duplicated.
- (2) The operational mechanism of cluster marketing includes three basic components: function - interest, regulation, and contract mechanisms. Function – interest reflects the management principle of the right - responsible; regulation reflects the cultural of the cluster, industry codes of conduct, and cluster stakeholders' requirements in handling mutual relations. The contract component reflects the marketing relationships between the market exchanges within the primary clusters. The contractual relationship is also the most common relationship of cluster marketing organizations and is a powerful tool for efficient allocation of marketing resources. Analysis of the three components (operational mechanism of cluster marketing) has revealed that all of them have been applied to different types of clusters within traditional industries.
- (3) By comparative analysis of the operational mechanisms of cluster marketing between traditional and high-tech industrial clusters, it found that all three types of traditional cluster marketing mechanisms can successfully be implemented by high-tech industry clusters. As a result, six cluster marketing models for high-tech industries were proposed.

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