Innovation within a Service Cluster

A Case from Taipei 101 Retail District

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Abstract-The innovation mechanism within service-oriented clusters is different from the traditional industrial cluster in which the focus is primarily on knowledge spillover. Based on the case study of Taipei 101 Retail District, we found that enterprises innovate via co-branding from dynamic alliance in a common service milieu to satisfy the changing (and/or to create new) customer demands. Servicescape, co-branding, and service milieu provide a demand-derived perspective of innovation within clusters. Since service-oriented clusters of enterprises have increasingly become prevalence in recent decades, our findings offer a compatible framework to interpret the industrial reality, as well as providing new insights for firms located in service clusters to gain and sustain competitive advantages.

Keywords- Service cluster; agglomeration economies; network; service innovation; co-branding; servicescape

I. INTRODUCTION

Industrial cluster has received considerable attention in strategic management literature. Research streams can be divided into agglomeration economies and economies of network [5]. The former refers to cluster effect, that is resource endowment, collective competition, and common infrastructure which might be generated from economies of scope and scale. On the other hand, economies of network evolve through the interaction of the member firms, like knowledge spillover, network, and co-operation relationship which is regarded as network effect.

Researchers have likewise found agglomeration of firms to be important of competitive success in many industries, including information technology [28], ceramics [10], biotechnology [34], semi-conductor technology [15], and wine making [24]. Most of the cases studied are primary (manufacturing) industries. However, the dominance of service has become a global economic phenomenon. Some prominent clusters are developed based on service, such as tourism in Florida and south California, casino in Las Vegas and Macao, and consumption services in Tokyo Omotesandō. This kind of service cluster has caught less attention in strategic management literature. This research is to understand how firms within a service cluster reinforce their collective efficiency of innovation through both cluster effect and network effect, and the difference between service and traditional (primary, manufacturing) clusters on strategies, operations, and modes of innovation.

With the review on research stream of cluster innovation, we define the gap of the theory and develop the research questions. The case study of Taipei 101 Retail District is then proposed to explore the solutions. This paper tries to revert to the theories of the traditional industrial clusters from the service view point, as well as providing new insights for firms located in service clusters to gain and sustain competitive advantages.

II. THEORETICAL BACKGROUND

For about 20 years now there has been a resurgence of interest in the industrial clustering when geographical clusters of firms were seen as drivers of national competitiveness and growth [16][23]. Academic research of industrial cluster is widely developed in the stream of strategic management, such as the resource-base view [17], knowledge management [32], and strategic alliance [6] those are mainly based on the thinking of supply-derived perspective. It evades the potential differentiation between the traditional and the service-oriented industrial cluster. In this section, literature of traditional cluster and its innovation are reviewed. Then, a service-oriented cluster is defined based on a comparison with traditional industrial clusters. Finally, we develop the research questions from the theoretical gap.

A. Research Stream of Industrial Clusters

The earlier research of industrial cluster has focused on transportation cost advantage [36][37]. Since the dominant industry of manufacturing allows the division of transformation process among firms in proximity, suppliers/buyers may, under transportation cost considerations, benefit from short distances to their buyers/suppliers. The divisibility of process, fundamental characteristic of manufacturing industry, may still play a significant role in the research stream after 1990. For example, when analyzing the formation of an industrial cluster, reference [29] proposed divisibility of process and transportability of product as the necessary conditions. All these research results are deduced because manufacturing is assumed to be the basic industry of the development of the theory.

Skilled labor pooling, geographical proximity to raw materials, and knowledge spillovers are suggested as the driven forces of innovation in a cluster [19]. Firms in clusters may have better access to specialized skills and at
lower recruiting and training costs. Then, a larger base of local supplier may positively influence the firms’ productivity, as the local division of labor gets more efficient. The concept of co-production is similar to Porter’s postulation of complementarities within a cluster [23], such as privileged opportunities for cooperation (sales, marketing, etc.) between nearby suppliers of complementary products [18] and innovations [4].

Another reason for agglomeration is knowledge spillovers [19]. It is proposed as the primary driving force of innovation within a cluster [31]. Geographical proximity provides privileged access to tacit knowledge in geographic proximity by means of both formal fashion transmirtal-processes as well as through such informal channels as knowledge leakages made possible by casual inter-firm interactions or workers changing jobs [18]. Proximity enhances the possibility of tapping into a local loop of knowledge, because such knowledge is often tacit or sticky, in the sense that it is embedded in the region [21]. However, it remains unclear to what extent tacit knowledge spillovers enhance competitiveness, as has been argued by reference [24]. Critical success factors of many firms may be low costs of production and low wages, rather than knowledge externalities [20]. Besides, the competitive strategies of firms in clusters, which are initially highly innovative compared to firms outside clusters, are argued to converge [25] (for example through mimetic and normative isomorphism) and to be less innovative over time because cluster firms define their field of competition as the cluster to which they belong, rather than as the wider external industry.

B. Service Cluster

Service is defined as the application of specialized competences through deeds, processes, and performances for the benefit of another entity or the entity itself [35]. In general, service activities are differentiated from non-service activities by the attributes of intangibility, heterogeneity, inseparability, and perishability, i.e., the “HIP” characteristics, with only a few exceptions questioning this view [8][35]. Thus, unlike manufactured products, services can be developed dynamically in response to changing customer needs without large irreversible commitments in physical assets. Reference [9] contend that service components are often not physical entities, but rather are a combination of processes, people skills, and materials that must be appropriately integrated to result in “planned” or “designed” service.

A service cluster of this research is formed with firms based on service industry. This new form of clusters is different from the traditional industrial clusters in which the focus is primarily on costs, production, and channel distributions. For service clusters, the main value comes from consumption, so physical assets, production equipments or facilities are not the resources of benefits. The vertical connection of firms in the supply chain is therefore not the determination. Horizontal vendors agglomerate to form a variable consumption environment where services can be jointly designed and developed by an ecosystem of alliance and delivered to the customers as an integrated solution or experience without investing in large physical assets. The orientation of service cluster is thus based on the process to form a destination-based cluster with horizontal related firms, such as entertainment and casinos in Las Vegas [24], and tourism clusters in Australia [12].

C. Innovation within a Cluster

Basically, a firm’s location decision depends on the net value creation that is not only brought about by the economies of agglomeration (or cluster effects), such as the ability to exploit economies of scale and scope and to exploit collective knowledge, but also that it results from the economies of network (or network effects), i.e., developing and managing strategic networking relationships. Economies of agglomeration and network effects are key explanatory variables for the existence and the success of a cluster [5]. In an empirical study of a financial service cluster in Canada, reference [3] is able to disentangle the effects of networks from cluster mechanisms on the performance of firms located inside and outside the industry cluster. The results show both effects enhance firms’ innovativeness.

Regarding cluster innovation, a number of theoretical arguments as well as some empirical findings suggest that knowledge spillovers are concentrated in spatial proximity to stimulate innovation [31]. The theoretical explanation is based on the notion that knowledge is public goods [37] in a spatial proximity to form an industrial atmosphere [19] to motivate innovations [13]. On the other hand, geographical proximity is not substantial to explain the innovative activities [15], network effects based on face-to-face contacts are necessary for illustrating the innovation generated from transferring tacit knowledge [30]. Relations root in trust, a shared understanding of problems and objectives, and the acceptance of common rules and behavioral norms are demonstrated to social capital [27]. It is the foundation of collective learning which refers to a collective enhancement of the local knowledge base through continuous innovation interactions.

From the above-mentioned literature on cluster, innovation, and service cluster, the research questions proposed in this paper are: how do firms within a service cluster innovate from the perspective of both cluster effect and network effect? If co-production based on the industrial atmosphere of knowledge is the primary cluster effect of industrial, what is the cluster effect of a service cluster? In addition, do innovation rigidities due to over-specialization occur in a service cluster? On the other hand, firms exchange knowledge to form innovation in industrial cluster. How does a service cluster develop the network effect? What do firms in a service cluster exchange? What is the process and mode of innovation activities in a service cluster?

D. Research Framework

From the literature review, innovation is found to be rooted in both cluster effect and network effect. To answer the research questions mentioned above, we adopt a case study to explore the differences of innovation between
industrial and service cluster. The case study is led on the following constructs:
1) Cluster effect:
Cluster effect of industrial cluster is derived from the atmosphere which is based on the knowledge spillover. While innovative rigidities may occur. That is, a close system of innovation leads to over-specialization. Knowledge spillover within a geographical proximity becomes both pros and cons. Does this happen in a service cluster? In addition, some scholars do not agree with knowledge externalities to be the foundation of cluster effect (Martin and Sunley, 2003). Is knowledge the main source of innovation in a service cluster?
2) Network effect:
Since the characteristics of services are not fit for the necessary conditions of industrial cluster like “divisibility process” and “transportability of product”, the interaction networking may not the same. Innovation within an industrial cluster are derived from strategic alliance and co-production, how can firms in a service cluster operate co-production? Or, do they innovate via co-production? If not, what is the difference of the alliance? Besides, do firms exchange knowledge in alliances? If not, what do they exchange?

III. SERVICE CLUSTER CASE OF TAIPEI 101 RETAIL DISTRICT
Taipei 101 is the highest building in the world, located in Hsin-Yi Planning District in Taipei City. To construct Taipei city as a node of world city network, Hsin-Yi Planning District is firstly planned to be an international finance center. Post-modern office buildings and mansions are thus built to bring in headquarters of international enterprises. Department stores, shopping malls, cinema and theaters, fitness centers, sophisticated book stores, and entertainment is the specialty that becomes the foundation of the Eslite Hsin-Yi in Taipei 101 Retail District. The branch A11 was firstly run in 1997. When the Warner’s Cinema setup in 1998, a small cluster appeared. Continuously from New York New York Shopping Center in March 2000, Neo 19 in October 2001, Shin Kong Mitsukoshi A8 in January 2002, A9 in December 2003, Taipei 101 in 2004, Shin Kong Mitsukoshi A4 in September 2005, and up until Eslite book store in January 2006, the living and consumption service cluster of Taipei 101 Retail District was developed to advance.

A. Data Collection
Primary and secondary data are collected in this case study. Primary data is from interviews, direct observations, and participant observation while secondary data is derived from documentation and archival records. More than 10 interviews are taken to explore the innovation activities from both the perspective of cluster effect, i.e., the resource of milieu and the innovation system, and network effect, i.e., inter-firm relationship, interaction mode, and resource exchanged.

B. Case Description
Taipei 101 Retail District is located in Hsin-Yi Planning District. In the Taipei city development plan, Hsin-Yi Planning District is targeted to be developed as the “Taipei Manhattan”. Producer service is agglomerated in the spatial proximity from international finance centers, world trade exhibition centers (Taipei World Trade Center, TWTC), and post-modern office buildings. Taipei 101 Retail District is thus surrounded with producer service industry, and developed under the construct of entertainment economy [38]. From the opening of Shin Kong Mitsukoshi A11 in 1997 and join of the Vieshow’s in 1998, a small cluster appeared. Continuously from New York New York Shopping Center in March 2000, Neo 19 in October 2001, Shin Kong Mitsukoshi A8 in January 2002, A9 in December 2003, Taipei 101 in 2004, Shin Kong Mitsukoshi A4 in September 2005, and up until Eslite book store in January 2006, the living and consumption service cluster of Taipei 101 Retail District was developed to advance.

Source: Direct observations on November, 2008.
Action Life is the biggest fitness center in Taiwan. It is with the business image of a youth, health, and energy. Vieshow is the only cinema in this area to complete the rich entertainment consumption of the Retailing Park.

As above mentioned, the main players within Taipei 101 Retail District are horizontal related to form a destination-based cluster to provide a common consumption space where original services and products are furnished.

IV. THE PARADIGM SHIFT OF SERVICE INNOVATION

According to the above-mentioned research stream, innovation within a cluster is considered from agglomeration economies (cluster effect) and economies of network (network effect). Current theory of cluster is mainly derived from the case of non-service cluster. However the service innovation is dominated by tailored experiences, the type of innovation is different to traditional research. In the case study, we find innovation within a service cluster is grounded on a common macro-servicescape, rather than knowledge or skilled labor pooling like traditional cluster is.

Since the entry of Shin Kong Mitsukoshi in 1997, Taipei 101 Retail District gradually developed into an advanced agglomeration of entertainment, leisure, and consuming. Every entering firm presents its uniqueness by the design of its building, layout, space planning, advertising image, and interior decoration. Macro-servicescape thus keeps reinforcing. In 2000, it was schemed to be developed as a consumption and entertainment park that accelerates the relevant industries in the district. Therefore under construction of the policy, the government works with architects and designers to create a new image of appearance of this area. Especially Taipei 101 appeals firms to move in to share the reputation and symbolic significance of Taipei. Our research finding may correspond to the research of Canina, et al. (2005) which assumes that clustering may not as readily offer labor pool benefits in service industries since it requires unskilled or semiskilled laborers.

Servicescapes, especially on environmental dimension from ambient conditions, space, sign and symbols are co-created by government and firms. Sometimes, the innovative macro-servicescape has symbol implication than its real profit margin. For example, SOGO department store as readily offer labor pool benefits in service industries since it requires unskilled or semiskilled laborers. Since the entry of Shin Kong Mitsukoshi in 1997, Taipei 101 Retail District gradually developed into an advanced agglomeration of entertainment, leisure, and consuming. Every entering firm presents its uniqueness by the design of its building, layout, space planning, advertising image, and interior decoration. Macro-servicescape thus keeps reinforcing. In 2000, it was schemed to be developed as a consumption and entertainment park that accelerates the relevant industries in the district. Therefore under construction of the policy, the government works with architects and designers to create a new image of appearance of this area. Especially Taipei 101 appeals firms to move in to share the reputation and symbolic significance of Taipei. Our research finding may correspond to the research of Canina, et al. (2005) which assumes that clustering may not as readily offer labor pool benefits in service industries since it requires unskilled or semiskilled laborers.

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III. THE INNOVATIVE SYSTEM OF SERVICE CLUSTER

Research finding 1: The macro-servicescape of service cluster is the foundation for innovative atmosphere. By shared cluster effects, government and firms collectively co-create a unique and innovative environment for consumption and entertainments.

The second, aggregated servicescape is designed from demand aspect rather than supply aspect. Traditional cluster assumes knowledge, technology, and skilled labor pooling that are collectively formed to be a cluster effect. However, the servicescape is constructed beyond the domestic customers’ needs, and led by firms. Through interviews, it is found that the ideas areusually the duplicates of classical and successful models like Les Champs Elysées in Paris and the Fifth Avenue in New York in many ways including the design of building, landscape and layout, space planning, advertising image, and decoration. This result is different from Porter’s propose that home-based customers of clusters are important inputs to innovation. Porter’s study cases are mostly consisted of manufacturing clusters, customers’ demands of products can be reflected and addressed. According to the interviewees, customers hardly can describe what services are before the services provided but after due to the intangibility of service. On the contrary, firms can greatly import the results of the existing successful cases and models while processing the design, and they become more open to accept and import because those existing cases have been modified and modified to this success. Therefore, innovation of the cluster is rooted in an open system since the resources are not restricted within the geographical boundary.

Research finding 2: The innovative system of service clusters is open. Importing the design of leading cases are the major innovative resources for cluster innovation.

Third, the keys of network effects are the relation and exchange but the relationship in service cluster is loose and contract-based. The purpose of alliance is to co-produce a service innovation for the destination marketing. Every firm provides their products or services to compose a contract-based cooperation. Take an example of Action Life that makes horizontal alliance to compose a new image of its brand. In the contract with Nike on November 24th, 2003, a show was delivered with the instructors of Action Life in Nike’s outfits (professional outfits for Combat, Funky Dance, Body Balance, Body Pump, and Latin). Action Life tried to scale up their business size by delivering a new message of fitness fused with sport fashion. The new brand image of Action Life is formed to be “fitness fashion”. In 2006, Action Life and Vieshow co-developed a new image of “alternative healthy life style” to distribute combi-ticket to cope with the new-open of Living Mall (a big-scale shopping mall outside this park in Taipei city). In addition, Action Life allied with a cosmetics brand located in Shin Kong Mitsukoshi in the summer of 2006, the combination of fitness and body gel created a new definition of beauty. Thus a firm’s core competency is dependent on its capacity to creatively combine core services or products with others [14]. Novelli et al. (2006) uses the UK tourism cluster as example to demonstrate the
development of clusters should not be seen as a simple and spontaneous process due to the nature of businesses involved, but as a very complex process linked to strong stakeholder collaboration. In our case, the complex relationships among firms are loose contract-based cooperation.

**Research finding 3: Service innovation is rooted in the contract-based alliance.**

On the process of loose contract-based alliances, the resources exchanged among firms are the images of their brands. To the essence, it is operated on co-branding. Co-branding identifies a number of strategies like affinity programs, cooperative advertising, cause-related marketing, ingredient branding, dual branding, and joint sales promotion [7]. It refers to co-operations between two or more marketable items that in one way or another connect representations of several brands in the marketplace [2]. Co-branding can enhance firms’ position in the network. In Taipei 101 Retailing Park, activities like the case of Action Life are prevalent. Two or more firms cooperate to build up a new symbolic meaning of the brands those bring various innovations to the marketplace.

The purpose of co-branding in the service cluster is to enrich the original brand. That is, the image of the original brand has to be enhanced. Like the case of Action Life, its original brand image of fitness is still remarkable in the new image generated from the horizontal alliance. Therefore, position before the horizontal alliance is one of the successful factors. The innovative activities based on co-branding create the spotlight appealing to the public. The attention is on the new symbolic meanings of the co-branding, and then, the original brand image is correspondingly enhanced. Within the horizontal connected environment, every firm is similar but different. A correct position can bring out the value of the firm. Then, through the exchange of brand images, various service innovations are formed to provide multiple experiences to the marketplace. The position of the firm is accordingly reinforced again and again from the continuous brand alliance.

**Research finding 4: Innovative resource exchanged among firms in service cluster is brand image. Service innovation is generated from frequent alliance of co-branding.**

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<th>Cluster effects</th>
<th>Atmosphere</th>
<th>Servicescape</th>
<th>Knowledge spillover</th>
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<td>Innovation system</td>
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<th>Network effects</th>
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<td>Innovation model</td>
<td>Contract-based model</td>
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**TABLE I.** A COMPARISON OF INNOVATION MODEL BETWEEN SERVICE CLUSTERS AND TRADITIONAL INDUSTRIAL CLUSTERS

In a study of agglomeration effects of lodging industry in the U.S., service firms are proposed to benefit from the investments of competitors that make a location more attractive [6]. In this regards, a macro-servicescape is co-created to form a service experience [26] which is co-developed by the differentiation of service firms within a geographical proximity. Therefore, the cluster effects of service clusters are derived from demand side, unlike traditional clusters’ driving force of supply side that firms produce products based on their core competencies so that the knowledge spillover and technology transfer are significant since it can reinforce firms’ core competencies. In addition, the openness of innovative system is conducted. Learning from plenty of successful cases from outside allows service cluster to correctly grape the concepts of the design of architectures, landscape, layout displaying, advertising images, and interior decoration. Thus, rigidities led from over-specialization [20] may not that significant in service clusters.

In network effects, brand instead of knowledge becomes the resource exchanged in the progress of innovation. Co-branding is developed from a contract-based alliance where no equity capital investment is involved. Static model refers to the content of knowledge exchange. Clustering in service industries is proposed to require unskilled or semiskilled laborers (except for management) [6]. It can be argued to depend on the kinds of knowledge which leads to different types of innovation. According to the reference [33], more advanced innovation (products new to the market) requires to a higher extent internal R&D and patenting and they are stimulated and supported by cooperation with universities and research organizations. In these cases, face-to-face interaction is necessary to enhance the transfer of tacit knowledge. Spatial agglomeration is thus regarded to accelerate the transfer and creation of new knowledge to form innovations. However, the knowledge used in service cluster is practical knowledge rather than scientific knowledge. It is cooperation with service firms rather than with universities [33]. No collective learning exists during the generation of innovation. Sources of innovation are external (e.g., the original images of brands like Vieshow cinemas were rooted in the U.S., reading culture of Eslite Hsin-Yi was already built on the setup of the first branch outside of Taipei 101 Retail District), the openness of innovation system in service cluster will not lead to over-specialization like mimetic or normative isomorphism in the traditional cluster [25]. The new images of co-branding are temporary innovations for certain activities
or promotions. After this, firms continue to develop the quality of their own brands back from the external resources system. Firms of service clusters are more flexible to respond to market trend since they don’t have long-term investments or embedded techniques within other players within the cluster.

Atmosphere formed by macro-servicescape and dynamic innovative activities of co-branding collectively create a service milieu for customers. Innovative milieu in the current literature refers to rapid exchange of ideas and knowledge which is based on the common understanding and behavioral attitudes for maintaining innovation processes in a region [33]. In our study, service milieu is not based on the exchange of knowledge, but composed of macro-servicescape and dynamic brand alliances to stimulate customers’ willingness to pay more since their perceived value is higher [62] within the cluster. This is by means of “cultural industry”. That is, through symbolic meanings, hedonic responses, or aesthetic criteria to stimulate customers’ desires for consuming [11], so-called “meaning manufacture” [22]. It is a potential and interesting future study to explore the strategies of customer value in service clusters.

REFERENCE