Global entrepreneurship and supply chain management: a Chinese exemplar

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Abstract
Purpose - Global entrepreneurship study is primarily concerned with why, when, and how entrepreneurial opportunities are discovered and exploited in the global market. The purpose of this paper is to present a framework for pursuing global entrepreneurship where supply chain management (SCM) can often serve as a platform for resource acquisition, market development, and risk mitigation.

Design/methodology/approach - This paper presents a case study to show how SCM is utilized by entrepreneurs in China for developing two formats of entrepreneurship: domestic private companies through horizontal supply chain clustering and vertical (forward and/or backward) supply chain extensions. In particular, the paper explores firm-level behavior in supply clusters to discern patterns at the collective level of supply clusters.

Findings - Entrepreneurs rely on their existing supply chain networks to pursue new venturing opportunities. Two types of supply chain expansions (horizontal supply chain clustering and vertical supply chain extensions) are found in China. Competitive rivalry in this paper of supply clusters is found to demonstrate "co-opetition" (collaboration amongst competitors).

Originality/value - This paper's theoretical framework offers unique perspectives towards global entrepreneurship, and is empirically supported by numerous real business examples. The paper integrates SCM with international entrepreneurship and identifies two distinct patterns that are evident in China. In particular, the paper describes the specific contexts in which each of the two patterns is successful. These patterns provide valuable guidance for future Chinese entrepreneurs interested in globalization. The paper is a harbinger to future research on collective behavior of competitors in supply clusters. This could potentially reframe competitive rivalry (in Porter's 5-forces) in more cooperative terms.

Keywords: Entrepreneurialism, Globalization, Supply chain management, China

Paper type: Research paper

Introduction
The research field of entrepreneurship is defined as the scholarly examination of identifying and exploiting entrepreneurial opportunities and managing entrepreneurial actions including those involving global and strategic entrepreneurship (Bruyat and Julien, 2001; Shane and Venkataraman, 2000). Entrepreneurship is not simply about launching a new venture (Lumpkin and Dess, 1996). In fact, a fundamental characteristic of entrepreneurship focuses on value creations, including creations of new goods, services, ventures, and innovations within an existing organization (Brush et al., 2003; Amit et al., 1993; Shane and Venkataraman, 2000). The literature mainly focuses on the following research questions about entrepreneurship:
RQ1. Entrepreneurial opportunities (why, when, and how entrepreneurs discover and exploit these opportunities).

RQ2. Entrepreneurial actions (why, when, and how different modes of action are used to exploit entrepreneurial opportunities).

The idea of entrepreneurship as a combination of innovative, proactive, and risk-seeking behaviors draws much of the research attention in the global business and strategic management literature (Hitt et al., 2002; Covin and Slevin, 1989).

In particular, "global entrepreneurship" has received much attention from management and entrepreneurship scholars. Zahra and George (2005) define it as the process of creatively discovering and exploiting opportunities that lie outside a firm’s domestic markets in the pursuit of competitive advantage. Based on the definitions of McDougall and Oviatt (2000) and Ibeh and Young (2001), Mitgwe (2006) defines global entrepreneurship as a courageous managerial value creation process through which an individual engages in innovative, proactive, calculated risk-taking behavior designed to utilize foreign business opportunities presented by multinational market successes and imperfections for financial and non-financial rewards. Wright and Ricks (1994) make comparisons of entrepreneurial behavior in different countries and organizational behavior that extends across national borders.

Moreover, the field of global entrepreneurship has been broadened from early studies of firm internationalization to include a number of insightful studies such as global entrepreneurial cultures (Thomas and Mueller, 2000), small- and medium-sized company internationalization (Lu and Beamish, 2001), top management teams (Reuber and Fischer, 1997), entry models (Zacharakis, 1997), country profiles (Busenitz et al., 2000; Wang and Zhang, 2009), corporate entrepreneurship (Birkinshaw, 1997), knowledge management (Kuemmerle, 2002), venture financing (Roure et al., 1992), and technological learning (Zahra et al., 2000). Reflective of the multidisciplinary nature of both entrepreneurship and globalization, researchers have drawn upon theories and frameworks from fields such as international business, small business management, entrepreneurship, finance, marketing, and economics. Practitioners also must draw on their knowledge of and experience in all of these fields in making effective strategic decision making.

In this paper, we intend to integrate supply chain management (SCM) into global entrepreneurship research and use the supply chain perspective to delineate and more precisely entrepreneurial efforts. We are particularly interested in how entrepreneurial opportunities are identified and exploited in China (Fang et al., 2009). Specifically, we explore firm-level behavior in supply clusters to discern patterns at the collective level of supply clusters. The foreign modes of operation that companies use, and the changes they make over time, have been considered an important indicator of globalization in many studies (Zahra et al., 2000; Burgle and Murray, 2000). However, Burgle and Murray (2000) state that little attention has been devoted to the empirical analysis of foreign market entry forms in the existing literature.

Before we present our supply chain perspective, we first consider the existing studies with regard to a network view of international entrepreneurship, which represents state-of-the-art international business practice. International entrepreneurship theory argues that individual and firm entrepreneurial behaviors form the basis for foreign market entry. Increasingly, small firms are able to acquire foreign market knowledge,
financial, marketing and managerial resources, and competitive advantages through collaboration with domestic and foreign network partners. Both global business and entrepreneurship researchers have undertaken multi-level analysis of the globalization process of firms, incorporating factors at the company, industry, and aggregate levels. These factors include organizational learning, networks, controls, risks, and uncertainties (Welch and Welch, 2004). Inter-firm networks have been considered an important part of the change process in globalization. Firms often utilize their existing domestic or foreign relationships in order to facilitate foreign market entry, for example, by taking advantage of connections between customers, suppliers, or intermediaries that have already internationalized. Johanson and Mattsson (1988) further argue that firm globalization is a process by which a firm using its foreign network partners, establishes and develops foreign market position achieved through international extensions, penetration, and international integration.

The network approach views market exchange as the result of interaction between discrete exchange relationships among market actors. Firm globalization therefore is the natural development from network relationships with foreign individuals and firms. Networks serve as a bridge that allows for rapid internationalization. There are many ways of achieving globalization: for example, subcontractor firms can follow their main contractor partners to enter foreign countries; new companies can be born-global by pursuing international resource or market at the very beginning (Mtigwe, 2006). In China, the guanxi network and inter-organizational relationships are used to acquire critical resources, assess entrepreneurial opportunities, or to substitute for the institutional voids in the transitional economy. The theoretical perspectives employed in this research stream include social network theory, strategic management, and the institutional perspective (Luo, 2003; Park and Luo, 2001; Xin and Pearce, 1996). Among the few firm-level studies examining the theme of inter-firm relationship or network, Zhao and Arun (1999) investigated the relationship between inter-firm networking and the growth of young technology-intensive ventures in China.

In the remaining part of this paper, we will extend the network-based view by presenting our supply chain perspective on global entrepreneurship. Specifically, we present two fundamental supply chain structures in business venturing: horizontal clustering and vertical expansions, with cases from mainland China to illustrate how the supply chain plays a critical role in addressing the entrepreneurial questions we raised earlier.

Entrepreneurship in China
Entrepreneurial opportunities come in a variety of forms. Drucker (1985) describes three different categories of entrepreneurial opportunities:

1. the creation of new information;
2. the exploitation of market inefficiencies that result from information asymmetry; and
3. the reaction to shifts in the relative costs and benefits of alternative uses for resources.

Previous researchers argue that entrepreneurial opportunities exist primarily because different parties in business and society have different beliefs about the relative value of
resources (Kirzner, 1997). However, for entrepreneurship to occur, people must possess differing beliefs regarding a wide variety of business elements such as the product-clearing price, potential market volume, the projected costs of various resources, and the timing of changes in any of these parameters. People and firms utilize experience, intuition, heuristics, and uncertain information to make their best entrepreneurial decisions. In making these types of complicated decisions, an existing supply chain structure can play a critical role in information collection and further analysis. Companies can create or acquire reliable entrepreneurial information more easily by linking to their existing customers, suppliers, and other formal or informal business contacts.

Entrepreneurial opportunities also vary on several dimensions such as the demand uncertainty, expected value and standard deviation of the profit, required investment of time and money, competition level, and the cost of capital. The decision to exploit an opportunity involves weighing the value of the opportunity against the costs to generate that value. People consider their costs for obtaining the relevant resources. The decision to exploit an opportunity is also influenced by individual differences in perceptions and risk orientation. An opportunity for entrepreneurship exists only if an individual recognizes and wants to pursue that opportunity.

Two broad categories of factors have been suggested for influencing the probability that particular people will discover particular opportunities:

1. the possession of the prior information necessary to identify an opportunity;
2. the cognitive properties necessary to value it (Shane and Venkataraman, 2000).

Even if an individual possesses a great idea for entrepreneurship (such as an invention), he or she may fail to pursue it because of an inability to recognize applicable means-ends relationship. In other words, commercialization requires visualization of cost-revenue relationships and a carefully developed and executed business plan. Operating a supply chain clearly offers the necessary experience in understanding detailed supply-demand relationships and systematic process-customer mapping and therefore provides a useful background for converting entrepreneurial ideas into business successes. As a result, customer revenue and production cost estimates regarding a potential entrepreneurial idea can be analyzed with less uncertainty and fewer information barriers.

The primary focus of entrepreneurship is on creation, including the creation of new goods, services and possibly new ventures, and organizations. Entrepreneurship is essentially about society creating new value for customers via organizing new processes and/or converting resources into new products. However, entrepreneurship is possible even with an old product, either through the development of a more competitive manufacturing or distribution process or through new market development. It is important to consider the organizational process of creating and distributing customer value through the supply chain. In general, a supply chain consists of multiple parties such as suppliers, manufacturers, distributors, and retailers, all of whom are involved, directly or indirectly, in fulfilling a customer request (Chopra and Meindl, 2007). The supply chain is driven by customer value creation and concerned with the entire supply process including physical goods, information, and fund flows. Specifically, the existing SCM literature usually focuses on the following topics which are more concerned with operating an existing business (Simchi-Levi et al., 2008; Borade and Bansod, 2008):
The concept of SCM is employed to manage all value-adding activities from raw materials to end-users (Chopra and Meindl, 2007; Tan, 2001). Ultimately, the customers are the main focus of SCM since the primary purpose of any supply chain is to satisfy customer needs and, as a result, generate profit at each level. Satisfying final customers can only be achieved when the whole supply chain commits, integrates, and coordinates to pursue coherent and innovative value-creation practices (Simchi-Levi et al., 2008). The SCM framework is in line with our entrepreneurship definition and can offer unique perspectives on key global entrepreneurship problems such as how to create additional value by taking the risks of doing business in foreign countries.

Porter (1998) describes a cluster as a geographically proximate group of interconnected companies and associated institutions in a particular field, including end-product manufacturers, component suppliers, and supporting firms. A supply cluster is essentially a collection of many interrelated supply chains (or supply networks) which specialize in one particular product category. These supply chains contain many levels of independent suppliers and manufacturers with different suppliers possibly serving the same manufacturer, and different manufacturers ordering from the same supplier. These many-to-one, one-to-many, and many-to-many relationships also exist among other layers of supply clusters which further create the unique competition and collaboration network.

A variety of factors have been identified which trigger the emergence of clusters (Krugman, 1991; Porter, 1998). These include market demand, prior existence of supplier industries including natural resources, innovative firms, and chance events. Khan and Ghani (2004) present a framework for examining technological innovation and entrepreneurship in clusters. Specialized suppliers in the cluster share the risks of failure associated with new technologies. New technologies rapidly diffuse throughout the cluster, encouraged by close proximity, trust, rivalry, and extensive outsourcing arrangements which further promotes the relevant entrepreneurial activities.

Any entrepreneurial activity involves risk, and the supply chain presents new approaches to dealing with risk. For companies attempting to enter a new market or a new production area, supply clusters foster entrepreneurship by providing established relationships and better information about opportunities, lowering entry and exit barriers, opening up niches of specialization, and fostering a competitive climate (Rocha, 2004). When new firms are established in a supply cluster, we call it horizontal supply chain expansion as the new firm will be competing with many other similar firms/supply chains. When firms use an existing supply chain, leveraging their existing technology and supply chain infrastructure to create value in international markets, this approach reduces investment risk. We define such uses of an existing supply chain as vertical supply chain extensions, which can be divided into two types.
The first type, forward supply chain extension, focuses on processes toward the end of customers either satisfying new customers in new countries or developing new products to serve existing customers. Companies can modify their supply chain to cover new international markets by creating a new sales presence in the target market. Companies can also innovatively redesign their distribution processes to provide the existing product to the existing customers with better efficiency and effectiveness. For example, the existing international supply chain can be shortened and middlemen can be eliminated thus creating new entrepreneurial opportunities.

The second type, backward supply chain extension, is mainly concerned with opportunities for better sourcing processes. Here, the entrepreneurial activities can involve new supply chain processes for better procurement, for example, better quality or lower cost raw materials and finished goods. In global entrepreneurship, the horizontal and vertical expansions of supply chain can be employed simultaneously. In some cases, supply clusters can be copied and established in target overseas markets. Next we will present a few relevant entrepreneurial examples in China to illustrate and further explain the above entrepreneurial formats.

SCM and entrepreneurship in China

*Horizontal extension – building supply clusters*

China is emerging as the most competitive manufacturing platform in the world, often known as the “world’s factory” (Handfield and McCormack, 2005; Leggett and Wonacott, 2002). In product categories such as apparel, footwear, electric appliances, furniture, toys, and computers, companies using Chinese suppliers have consistently captured a dominant share in world markets. The emergence of supply clusters of various products in China is considered to be one of the major economic structural changes in recent years (O’Neill et al., 2009; Zhang et al., 2004). In fact, foreign visitors to China are often swayed to find hundreds and even thousands of factories producing the same type of merchandise in a single township along the east coast of China. It is indeed a new industrial structure that defies the prevailing western paradigms of economies of scale required for low cost manufacturing.

The large number of supply clusters formed in China in recent years has contributed significantly to the nation’s growth in manufacturing competitiveness in a short period of time (Wu et al., 2006). This production structure, which is built on the supply cluster concept, has become the means by which almost everything is made in China. In fact, China’s low costs are reflected in the entire supply cluster production format from component sourcing to manufacturing, logistics, warehousing, storage, and finally, commercial transactions. More importantly, supply clusters offer a platform for facilitating fast entrepreneurial growth which rapidly promotes the national economy, as is the case in China.

There are mainly two types of supply clusters in China. The first is the hub and spoke type of cluster, where a giant manufacturer (mostly large state-owned enterprises or their joint ventures) is surrounded by a large number of suppliers and supporting firms in the local region. Generally, the hub company tends to be highly regulated and limited to certain capital-intensive industries such as telecommunications, auto, energy, utility, steel, and chemicals. Surrounding companies are mainly the hub’s suppliers and service firms. The second type of cluster is formed by a large number of small- and medium-sized enterprises in the same industry. These are mainly private companies
which have been left on their own for economic survival. Many of these clusters of privately owned companies have thrived and now form the backbone of the Chinese market economy. They now produce well over half of the national gross domestic product and contribute an overwhelming share of Chinese exports (Wu et al., 2006; Anderson et al., 2003).

In recent years, both supply cluster types have proliferated across the country and there are now more than 1,000 supply clusters in almost every major product category. The majority of the supply clusters are located in China’s most developed regions, which include the eastern provinces of Guangdong, Fujian, Zhejiang, and Jiangsu, and large metropolitan areas such as Shanghai, Beijing, and Tianjin. Nearly, every city or township in these eastern regions has one or more specialized production clusters. For instance, the Nanhai district of the city of Foshan in Guangdong province comprised of 18 towns. Each of these towns engages in one of several manufacturing specializations such as ferrous metal processing, construction ceramics, textiles, electric appliances, household hardware, underwear, toys, and so on.

In Zhejiang province, there are 148 manufacturing clusters with annual sales volume over RenMinBi 1 billion (yuan). Most of the firms in these clusters are privately owned and operated, and the clusters in Zhejiang province contributed half of the overall manufacturing volume for the province in 2003. For example, in 2003 there were about 5,000 enterprises in the Zhili township of Zhejiang province producing garments exclusively for children. Similarly, in the Datang township, thousands of sock manufacturers produce six billion pairs of socks annually. And in Shenzhou, a rural county that is also in Zhejiang province, 1,000 enterprises produce $250 million in necktie sales per year (Zeng and Williamson, 2003). Since most production clusters in eastern China were established within the last 20 or so years, many people are wondering how such a massive number of private enterprises can be incubated and successfully developed in such a short period of time.

Krugman (1991) introduces three key characteristics of clusters: a specialized labor pool, specialized input suppliers, and technological spillovers. In developing countries where contract enforcement is lacking, trust becomes the fourth key characteristic of clusters. In this context, we present our perspective on how supply chain clustering promotes entrepreneurship. First, we examine supply chain performance drivers including facilities, inventory, transportation, information, and sourcing to explain how existing firms can improve their operational performance by being part of a supply cluster.

Supply chain facilities are the places in a supply chain where the product is produced and/or stored. The close geographical location of similar manufacturers within a cluster enables flexibility and capacity pooling to better handle uncertain demand. For example, companies can outsource orders or portions of orders that they may not be able to handle themselves to other firms with similar production capabilities within the same geographical area. The manufacturer does not suffer any potential losses (for example, lost sales or customer goodwill) from not being able to handle orders due to capacity restrictions. The close proximity of similar facilities also allows these companies to share the investment costs of building common facilities and other required public infrastructure. Factory clustering also helps individual firms contend with supply disruptions since resources (for example, spare parts for equipment) can be shared among firms located across the street.
Within the supply cluster itself, shipping costs between suppliers and manufacturers are greatly reduced due to the close proximity. Consider the example of the Flextronics production campus in the Pearl River Delta town of Doumen, Guangdong province. Situated within 149 acres are 13 factories employing 18,000 workers producing cell phones, X-box game consoles, personal computers, and other hardware. Within a two-hour driving distance of these factories are thousands of suppliers that provide almost every component and production support required by Flextronics. This logistical set-up alone results in component costs that are less than 20 percent of similar products produced in the USA (Engardio and Roberts, 2004).

The geographic closeness of the facilities and activities within a supply cluster facilitates the flow of inventories (raw, work-in-process, or finished-goods inventories) in a somewhat just-in-time manner. With frequent small shipments occurring between facilities, in-transit inventories which tie up working capital are minimized. Moreover, the reduced lead time for sourcing and multiple small orders both result in significant reduction in the average inventory level.

Many small- or medium-sized enterprises in a supply cluster may prefer face-to-face interactions though internet is available. The geographic proximity of firms in supply clusters provides favorable conditions for this kind of information transfer, which results in closer personal relationships (guanxi in Chinese) and community ties. And this, in turn, fosters trust among the members of the cluster, and facilitates the flow and accumulation of extensive market, technical, and competitive information leading to further value creation for the producers and customers. For example, whenever there is a leader in process reengineering or product design innovation, other enterprises in the cluster try emulate the leader by developing similar technologies. This continuous "catching up to excel" has a positive effect on attracting equipment suppliers, collaborative research labs, and other service companies to the cluster. Trust and the related concept of social capital facilitate resource and technological information exchange among the firms. The result is more product innovation and entrepreneurship in the clusters. Owing to proximity, trust together with rivalry, and extensive outsourcing arrangements, a healthy spirit of "co-competition" prevails in the clusters.

A supply cluster attracts top suppliers of different resources because of its volume. It allows each cluster member to benefit when procuring raw materials, components, labor, equipment, and other supporting services from their suppliers since price comparison and order aggregation can be facilitated. Bulk and aggregated full truckload or container-load shipping obviously can reduce ordering cost when small orders are combined by the supplier. The cost savings from these transport options can then trickle down to the individual firms in the cluster and ultimately to the end customer. In terms of labor resources, the existence of a large pool of individuals with specialized skills is a core advantage of clusters. People with the necessary skills are attracted to the cluster in order to benefit from the abundance of job opportunities and the reduced risk of relocation in case of job changes. The companies in the cluster benefit from reduced hiring costs and the availability of skill set. Another characteristic of clusters in sourcing is the existence of firms providing specialized inputs such as banks, consulting services, etc.

When considering selling the product of the clusters, an old Chinese proverb comes to mind: "A chopstick can easily be snapped, but a dozen are hard to break." Marketing the cluster as a whole creates a reputation for the region within a particular industry.
The grouping of similar producers also makes buying from a cluster more attractive for purchasers as they are in contact with and exposed to many suppliers in a single trip. As a result, product demand for the cluster becomes even stronger and the cluster's marketing position can be further improved. For example, with annual sales of 47 billion yuan, Yiwu city in Zhejiang province has become the largest cluster in the world for producing ornaments, toys, gifts, and small home appliances. Because of the volume, these days more than 8,000 foreign merchants are now working in Yiwu for their purchasing duties. Furthermore, aggregate demand pulled from various markets tends to be more stable due to risk pooling effect. As a result, the supply cluster allows for more accurate demand forecast and lower safety inventory which in turn increases the efficiency in fulfilling orders. Geographically, dispersed companies are less likely to recognize and capture such benefits.

Using the framework of supply chain drivers of facilities, transportation, inventory, and information mentioned above, we explored the advantages created by a supply cluster toward improving the overall value chain processes which are critical to existing firms in the cluster. At the same time, all these characteristics play an important role in promoting innovation and entrepreneurship within the cluster. Entrepreneurs can both identify and act on new value creation opportunities inside a supply cluster more easily because of the following advantages:

- processes that are relatively simple to organize due to job specialization in cluster;
- high availability and lower price for resources including labor force and specialized services such as loans;
- fast technology upgrade and peer pressure for development;
- lower cost of manufacturing and distribution due to risk pooling and economies of scale;
- relatively stable demand for the output; and
- information spillover and a pre-existing level of trust from extensive social networks.

As a result, once a cluster-based entrepreneurial idea is formed, the decision makers tend to view this type of business more favorably and are more willing to pursue these venturing opportunities, primarily for two reasons: reduced risk and improved operational performance. During different development stages, however, entrepreneurs tend to face different obstacles and difficulties. The imitation often used as a primary strategy to overcome most of the early stage difficulties is, however, not a panacea for all problems. In fact, any overcrowded cluster of firms tends to create over-competition, which results in failures of individual entrepreneurial projects. In particular, the supply clusters in China have created low barriers of entry. This, in turn, creates even stronger competition, rapid volume growth, and lower product prices. As a result, many firms may not be able to sustain their business in such a competitive environment, especially with most of the supply clusters focusing on producing low-margin commodity products with little differentiation. Therefore, joining any supply cluster is not a guarantee for entrepreneurial success.

Sonobe et al. (2002) suggest that prior knowledge of the garment industry is not required for entry into the garment business in the early stage of cluster development.
However, in the later stages of cluster development, any outsider can face tremendous difficulty due to technological development and know-how accumulation of cluster firms. In China, however, the use of spin-off management teams to start new businesses significantly reduces the latecomers’ disadvantages (Koeln, 2007). We liken this growth process to an amoeba-like replication. Groups of spin-off enterprises, whose managers used to work at the same parent firms, can easily employ the same technology to produce the same products. This phenomenon can be seen everywhere in numerous clusters across China.

The basic assertion of this section is that clusters play a positive role in facilitating entrepreneurship and technological innovation by reducing the risks of failure and facilitating operational improvement. Overall, we argue that most of the advantages of supply cluster are considered as permanent, especially if compared to a non-cluster supply chain structure. For example, Zheng and Cheng (2006) present a positive relationship between industrial cluster and entrepreneurship in Dounan, Yunnan province. The textile industry of Shengze township of Wujiang City, Jiangsu province developed the Oriental Silk Market and the relevant production cluster in early 1990s. The number of enterprises in the cluster was increased from 697 in 2000 to 1,800 in 2007 and the total number of shuttleless looms (the main production equipment for this textile industry) was increased from 11,000 in 2000 to 80,000 in 2007. Without the clustering structure, such rapid entrepreneurial expansion in such a short time is deemed impossible.

**Vertical extensions: expanding supply chains**

When considering international business opportunities, most companies tend to extend their existing supply chain and utilize their existing strategic assets for risk control purposes. In fact, global supply chain extension is the mainstream format for global entrepreneurship as we rarely see companies go to a foreign market without first establishing their footprint in their home country. In this section, we consider entrepreneurial expansions along an existing supply chain. Specifically, we will investigate two entrepreneurial activities associated with China: manufacturing offshoring in China by global companies and overseas expansions by Chinese firms. The former is apparently associated with supply chain backward extension toward sourcing, and the latter is related to supply chain forward extension toward customers. The two different moves have one commonality: both use their existing supply chain as a foundation for further international expansion. Many global firms are interested in setting up their marketing presence in China to pursue the huge sales opportunity. Firms can also start establishing global manufacturing functions in low cost countries like China. Over time, they gradually move their design and engineering processes to China to optimize their value chain. Chinese companies may start by opening sales functions in foreign countries, followed by production function searches in host countries.

While manufacturing offshoring is defined as relocation of production processes to a foreign country, outsourcing is broadly termed as the movement of internal business processes to an external company. However, in many scenarios, both concepts refer to relocation of business processes to some low cost foreign countries, specifically, China for manufacturing and India for service offshoring. Hereafter in this paper, we shall use outsourcing and offshoring interchangeably. In recent years, China has emerged as a prominent destination for manufacturing offshoring. The country has developed at a
breathhtaking rate to the extent that it is has been referred to as “the world’s factory.”
The age of economic isolation has long since passed. Across the globe, competitive pressures are driving an increase in the magnitude of outsourcing across industries worldwide.

China continues its long-term policy of utilizing foreign investment with no change (Jiang, 2003). Up to now, driven by the desire for reducing cost and increasing sales, most major companies have established their footprints in China through operating captive factories, joint ventures, contract manufacturers, sales operations, or simply liaison offices. However, the outsourcing decision is by no means a simple matter but is a complicated issue with strategic, tactical, and operational implications. For example, with manufacturing in Asia, the supply chains for physical goods are becoming much more complex, longer, multi-tiered, and therefore less responsive resulting in stockpiling with increased inventory levels (Finley and Kistler, 2005).

We consider a few large companies for analyzing their presence in China. The first is Wal-Mart. Wal-Mart is the largest company in the world with total revenue of $379 billion in 2007. As a major retailer, Wal-Mart buys much of its merchandise from China, mainly through contract manufacturing. In 2004, for example, Wal-Mart reported that it purchased $18 billion of goods from suppliers in China. Many “American suppliers” of Wal-Mart, for example, Hasbro of Rhode Island, outsource a substantial portion of their production to China. At the end of the supply chain, Wal-Mart stores entered the Chinese market in 1996, opening its first Supercenter in Shenzhen, China. Currently, Wal-Mart operates three store formats in China (Supercenters, Sam’s Clubs, and Neighborhood Markets) and has about 200 stores in China. By establishing sourcing and retailing presence, Wal-Mart used both backward and forward supply chain expansions to internationalize their operations in China.

In the auto industry, General Motors (GM) suffered a loss of nearly $37 billion in 2007 and continues to lose market share to its Japanese rivals, namely, Toyota and Honda. However, in the same year GM together with its local partners was the first automaker to sell one million vehicles in China. By extending its supply chain vertically, GM established its strong international presence of manufacturing and especially marketing in China. Currently, GM operates seven joint ventures and two wholly owned foreign enterprises and has more than 20,000 employees in China. GM, China is now seen as the crown jewel in the GM portfolio of businesses.

As one of the leading technology companies in the world, GE has strong businesses in infrastructure, financial services, and media markets. All of GE’s industrial businesses have set up operations and established over 50 legal entities in China with more than 12,000 employees. The sales revenue of GE in China was $5.4 billion in 2006. Much like Wal-Mart, GE too has both backward and forward extensions of its supply chain in China. In addition to selling mainstream products including engines, turbines, and home appliances, GE also operates a number of manufacturing factories producing home appliances and medical equipment in China that are sold around the world.

From the above examples, we conclude that for many companies, global entrepreneurship is naturally an integrated part of global SCM: identifying new markets, designing supply chain network by adding new reseller and distribution facilities, pursuing low cost sourcing opportunities by manufacturing in low cost countries, and coordinating the global supply chain network for efficiency improvement. For example, at least 80 percent of Lucent Technologies’ products are made across
Asia, mostly in China. Lucent relies on Romania and the Czech Republic to pick up the slack during the Chinese New Year time period. Backward and forward extensions of the supply chain in the above examples can also be, respectively, denominated as:

- "made in China" for foreign markets; and
- "made for China" by foreign firms.

Next we shall consider the global entrepreneurship associated with domestic companies in China. Specifically, we are interested in Chinese firms' international expansions. In general, international venturing of many Chinese companies include five steps:

1. test exporting;
2. selling internationally through agent;
3. establishing sales function and marketing directly;
4. establishing production base in foreign countries and marketing directly; and
5. establishing R&D operations in foreign countries.

Most successful companies, start through the establishment of an international trade business and, usually conclude by copying their entire supply chain and setting up their own production and marketing operations in host countries. In 2006, China's non-financial foreign investment reached 17.6 billion dollars with a 43.8 percent increase over previous year. Overseas projects realized sales revenue of 274.6 billion dollars, and employed 620,000 people. Through foreign investment and venturing, China gained overseas annual production capacity of 1.15 billion units of home appliances, 2.9 million cars and 140 million bicycles. When selecting the appropriate destination for global expansions, companies can take an "easy" approach or a "difficult" approach.

An "easy" approach entails firms first focusing on expanding into developing countries, and after accumulating enough experience in international business, then moving to developed countries such as North America and European markets. A good example for taking the "easy" approach is Shenzhen-based Huawei, one of the largest telecommunication equipment producers in the world. Huawei made its debut in international markets in 1996 pursuing a geographic diversification strategy. Avoiding head-to-head competition with major rivals such as Cisco, the firm made its initial overseas move in the developing countries. Huawei made its first significant international sale to a Russian telecom service provider in 2000, and then received orders from Thailand, Brazil, etc. Major contracts won in recent years included the network upgrade contract with Etisalat, the telecommunications carrier of the United Arab Emirates, making UAE the first Arab country with 3G wireless communications. In 2004, Huawei became one of the first global communication suppliers to set up a Code Division Multiple Access network in Europe when it completed the construction of a project in Portugal for Denmark-based Radiometer A/S. Huawei took the "easy" approach in selecting the international markets to enter. In the "easy" approach, firms enter more competitive markets after they accumulate enough experience in less competitive markets. At the same time, the firms directly send their own management team to overseas markets to win orders from the very beginning. According to one estimate, approximately one-fourth of the total workforce of Huawei (10,000 people) are working in overseas markets. Utilizing its own staff and management system, Huawei's international entrepreneurial activities were executed more efficiently and
responsively. From a knowledge management standpoint, Huawei has an excellent and gradual diversification strategy.

Another example is Haier, the fourth-largest white goods manufacturer in the world. Haier group reported sales of over $15.4 billion across all divisions in 2006. With its number one position in domestic market, Haier moved onto the international stage with the goal of building a global brand name. The company opened a production facility in Indonesia in 1996, and the Philippines and Malaysia in 1997. Haier’s move into the US market was cautious at first; it focused upon two niche markets in compact refrigerators and electric wine cellars. Both markets were underdeveloped at the time of entry. As part of its strategy, Haier decided to build a production facility in the USA at Camden, South Carolina, in 2000. Haier continued its expansion into other international markets as well. Production facilities were constructed in Pakistan in 2002 and Jordan in 2003, greatly strengthening its position in the Middle East market. In Africa, Haier has plants in five countries: Tunisia, Nigeria, Egypt, Algeria, and South Africa. The company also purchased a factory in Italy, as part of its continued drive into the European market. Haier has been successful in placing its products in most major European retail chains, either under its own brand or under original equipment manufacturer agreements with foreign partners.

The second approach is the “difficult” approach which starts from entering developed countries at the beginning and then entering other markets after their presence in more competitive and larger markets is well established. For example, Wanxiang is one of the largest private companies in China and is a major supplier of universal joints, bearings, and constant velocity joints to customers in over 40 countries around the world. Wanxiang America Corporation was established in 1995 as the company’s first international project. Now Wanxiang America provides full-line service to customers in the USA, Canada, Latin, and South America and all of Europe.

Apparently, the central issue in global entrepreneurship for many companies is how to expand the existing supply chain globally. When devising a supply chain, companies need to determine whether their products are functional or innovative and whether their supply chain is physically efficient or responsive to the market (Fisher, 1997). Firms can discover whether the process the company uses for supplying products is well matched to the product type: an efficient process for functional products and a responsive process for innovative products. For example, Sony moved one of its digital camera production lines in Shanghai back to Japan in order to provide better product responsiveness to the North America market in 2003.

For small- and medium-sized enterprises (SMEs), it is not absolutely necessary to have achieved economies of scale before going abroad. Instead, having a competitive advantage in some supply chain process is far more important to most SMEs. With the development of information technology and internet revolution, the globe has become so small that the previous long and multi-tier supply chain can be significantly shortened. Today, many SMEs are looking at web innovation as an essential way for global entrepreneurship and have become “born global” from the time the firm gets established. For instance, many small global vendors are selling goods on eBay.com, however, they will only ship from countries like China.

Establishing supply clusters in target foreign countries has become a trend in global entrepreneurship. In Zhejiang province, for example, in 2007 Yumei group from Shaoxing City established a textile industrial park in Nigeria which involves textile
supply chain firms for spinning, threading, knitting, and garment production processes. All these foreign firms were funded and operated by companies from Shaoxing which already have collaboration relationships. Another example is the Dragon Mart in Dubai that is a cluster of Chinese company outlets in one location in Dubai. Notable fact is that the infrastructural costs of Dragon Mart are borne by the Dubai Government. In this way, the competitive structure of industrial cluster can be copied and utilized in global entrepreneurial endeavor.

Conclusion and future research directions

In this paper, we presented our supply chain perspective on global entrepreneurship. We show that facing investment and operational risks, entrepreneurs rely on their existing supply chain to pursue new venturing opportunities. Two types of supply chain expansions were discussed: horizontal supply chain clustering and vertical supply chain extensions. Clusters play a positive role in facilitating entrepreneurship and technological innovation by reducing the risks of failure and facilitating operational improvements. Overall, we argue that the advantages of supply cluster are permanent, especially in comparison to non-cluster supply chain structure. Moving along an existing supply chain either forward or backward is also a common strategic action for many global firms which allows risk reduction while maintaining their existing business competitiveness. A dominant mode of global entrepreneurship of Chinese firms is a gradual development process, which consists of the following steps: indirect export, direct export, establishing overseas sales organization, establishing overseas production operations, and R&D facilities. We note that entrepreneurship must be associated with the innovation of a product or process that better meets customer needs, but it does not necessarily include the establishment of new firms.

Our contributions are severalfold. First, we systematically presented the supply chain view toward global entrepreneurship. Our framework complements the existing entrepreneurship frameworks in the literature and provides a new taxonomy for global entrepreneurship based on SCM:

- horizontal supply chain clustering; and
- vertical supply chain extensions.

These patterns provide valuable guidance for future Chinese entrepreneurs interested in globalization. Second, we offer several examples in China to illustrate our taxonomy and also show how supply chain structures are employed in China to pursue domestic and international venturing opportunities. Third, our study is a harbinger to future research on collective behavior of competitors in supply clusters. This could potentially redefine competitive rivalry (in Porter’s 5-forces) in more cooperative terms.

Our study also raises several questions for future research. First, future research can address the performance implications of the SCM-based taxonomy introduced in our paper. Specifically, is horizontal clustering better than vertical extensions in terms of firm-level performance? Do firms in clusters enjoy greater longevity than firms that engage in vertical extensions? Collective prosperity and individual decay may well define long-living and high-performing clusters with constant innovation. Our study establishes the basis for such future research studies which can examine performance at the collective (cluster) level and the firm level. Further analysis and validation are necessary, if a model is to be established based on the insights drawn from this study.
A larger sample would allow for more concepts to emerge and/or a more in-depth examination of interrelationships among elements within a supply chain. Much more needs to be learnt about how Chinese entrepreneurs engage in: opportunity discovery, opportunity evaluation, decision-making processes, and implementation approaches.

References


Zahra, S.A. and George, G. (2005), “International entrepreneurship: the current status of the field and future research agenda”, working paper, Purdue University, West Lafayette, IN.


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