

# Chinese SME Development and Industrial Upgrading

## Abstract

**Purpose** - Drawing from industrial upgrading theories, this research explores issues of industrial upgrading and SME development in an emerging market — China.

**Design/Methodology/approach** - A contextual stepwise approach is undertaken by applying netnography and interviews to investigate manufacturing SMEs' perceptions on upgrading.

**Findings** - Our research outlines three economic actors — government, industry and manufacturer; two upgrading factors — internal and external; a vicious circle that consists of thin profit, quality and imitation issues; and a benign circle that incorporates a list of upgrading capabilities — R&D, creativity, design and branding — in the context of upgrading to the value-added supply chain.

**Research limitations/implications** - By integrating the findings with relevant literature, we propose a framework to best illustrate manufacturing SME upgrading. The findings reveal that Chinese manufacturing SMEs acquire upgrading capabilities through organizational learning during the upgrading process, which is affected by both external and internal factors in the constraints imposed by the interplay of relevant actors.

**Originality/value** - Through the innovative methodological approach, this study affords great insights into industrial upgrading from the perspective of manufacturing SMEs in an emerging economy - China.

**Keywords** Industrial upgrading, SMEs' development, Netnography, OEM-ODM-OBM

**Paper types** Research paper

## **Introduction**

Globalization has generated dynamic competition in international markets among countries with distinctive offerings. Emerging economies with low-cost resources form country-specific supply centers to link in with the global supply chain and achieve competitiveness. In the case of East Asian development, starting with Japan as the center of manufacturing power in the early 1950s, this power gradually shifted to newly industrialized economies (NIEs), such as South Korea, Taiwan, Singapore and Hong Kong, before relocating to South East Asia (Gereffi, 1999; Unger and Chan, 2015). Since China launched its economic reform and open door policy, global investment has flowed into the country and it has become the world's strongest manufacturing power (Buckley, 2019).

The progress of manufacturing power migration in East Asia reveals a process of industrial upgrading, shifting from an initial low value-added production to high value-added creation and innovation. Industrial upgrading is a complex process that involves various activities, including developing low value-added to high value-added products/services (Pananond, 2013), gaining access to global markets (Pipkin and Fuentes, 2017), and learning and determining which types of capabilities to acquire - i.e. learning and innovation capabilities (Pietrobelli and Rabellotti, 2011; Alcácer and Oxley, 2014). Traditionally, study on industrial upgrading has focused on the association of large emerging economy firms (EEFs) and their linkage with the global value chain (Pipkin and Fuentes, 2017; Azmeh and Nadvvi, 2014). Little attention has been paid to how small and medium-sized enterprises (SMEs) from emerging markets participate in industrial upgrading, and whether such firms move voluntarily or involuntarily towards the production of simpler goods, or focus on lower or smaller segments (Hernández and Pedersen, 2017).

The objective of this research is to explore this novel landscape in the minds of entrepreneurs in Chinese manufacturing SMEs, to examine the issues encountered in the process of upgrading, and to identify the changes that firms have adopted to accommodate upgrading. Chinese manufacturing SMEs were selected as they are generally privately-owned and have continuously been the largest exporting operational body, accounting for nearly half of the country's total export volume in 2016 (Liang *et al.*, 2014; Ministry of Commerce of the People's Republic of China, 2017). While Chinese SMEs do not have the privilege to access resources provided by states and other formal institutions, their operations are still affected by institutional changes (Zhu *et al.*, 2012). Limited studies on SME upgrading in an emerging environment leave room for further exploration.

This research adopted an innovative methodologic approach, employing netnography and interview methods to gain online and offline views from Chinese manufacturing SMEs. Through investigating their perceptions of such upgrading activities, we gain an in-depth understanding of firms' behavior in an emerging environment. Our study contributes to the existing literature on industrial upgrading by extending the knowledge to the context of SMEs from an emerging market. We further explore their capabilities acquisition and identify barriers accompanying upgrading. Additionally, we provide implications for small firms from other emerging markets by outlining changes and pathways that an SME adopts during upgrading.

The following sections begin with an overview of the literature. Research design and methods are outlined next, followed by findings, together with a discussion to anchor results in the current literature stream. This research concludes by stating implications, limitations and directions for the future research.

## **Research background**

### *Industrial upgrading*

Industrial upgrading is a learning process that pursues valuable capabilities, creating value-added products/services and improving manufacturers' competitiveness (Pietrobelli and Rabellotti, 2011; Pipkin and Fuentes, 2017). Prior literature has developed a number of conceptual models to outline a successful upgrading pathway—for instance, the 'flying geese' paradigm (Akamatsu, 1962); the 'imitation to innovation' transformation (Kim, 1997); and the trajectory from Original Equipment Manufacturing (OEM) to Original Design Manufacturing (ODM) and Original Brand Manufacturing (OBM) (Hobday, 1995; Mathews, 2002). Each pathway was developed in different contexts. For instance, 'flying geese' paradigm was evolved to explain Japanese industrial upgrading (Kojima, 2000; Ozawa, 2005); 'imitation to innovation' transformation was refined to illustrate the development of technological capabilities in South Korea (Kale and Little, 2007) and latterly was practiced by Chinese multinational companies (Yip and McKern, 2014; Wang and Chen, 2020). The OEM-ODM-OBM trajectory has been one of the most popular pathways applied to illustrate manufacturing upgrading in Taiwan, South Korea and Mainland China (Lee, 2005; Chu, 2009; Yan, 2012). This process requires firms to acquire different capabilities and know-how skills at different stages, such as designing, research and development (R&D), innovation and marketing capabilities (Eng and Spickett-Jones, 2009; Liu *et al.*, 2013).

The acronym 'OEM' refers to 'the system by which firms cooperate in a sub-contracting relationship' (Hobday, 1995, p. 1190). OEM focuses on producing final goods under specifications of licensing contracts related to an overseas branded firm (Eng, 2009). A step along this road for EEFs is assembly under contract for established

brands. Such a process leads manufacturers to establish capacities to undertake OEM production, though, the contracting firm retains design and product-specific information and capabilities. The assembly item may be a component or product that will then be marketed and branded by the contracting firm (Chu, 2009).

The subcontracting practice is a process of ‘learning by doing’, where manufacturers acquire relevant knowledge about the industry and market in addition to the process of assembly (Azadegan *et al.*, 2008). Upgrading to ODM occurs once the subcontractor is able to offer product design and specification services to their contractors. Manufacturers continue to play the role of a subcontractor in the progress to ODM, but they engage more in tasks involving market research and product design (Liu *et al.*, 2008). During this progress, firms upgrade their capabilities, which are comprised of creative skills, technological R&D and innovation abilities to accommodate customers’ needs (Malerba and Nelson, 2011; Fossas-Olalla *et al.*, 2015). They, however, will not yet possess the required skills, resources or expertise associated with designing, branding, marketing and distributing the final product (Eng, 2009).

The next step to OBM can only be achieved by acquiring knowledge and skills in marketing (Eng, 2009). Marketing researchers claim that marketing resources and capabilities assist firms into delivering a superior performance and contributing to the creation of competitive advantage (Weerawardena, 2003; Krasnikov and Jayachandran, 2008). Marketing capabilities emphasize the importance of “*a firm’s ‘know-what’ knowledge resources and its complementary ‘know-how’ deployment capabilities*” (Morgan *et al.*, 2009, p. 911). Firms that possess such capabilities are equipped to collect and disseminate market information into business applications (Jaworski and Kohli, 1993); they are in a better position to understand and forecast consumers’ needs, and their products are more favorable in the market (Kaufmann and Roesch, 2012).

In order to progress to OBM, firms need to acquire various marketing capabilities, and create superior product and customer value to respond to the changing environment (Day, 1994; Kaleka and Morgan, 2019). Existing literature lacks empirical evidence on the acquisition of the types of marketing capabilities for industrial upgrading (Eng and Spickett-Jones, 2009). Nevertheless, mastering branding is one of the key marketing capabilities for OBM. Studies show that a well-established brand offers significant benefits to buyers and sellers. An established brand assures product quality and reduces purchasing risk for buyers (Aaker, 1991; Keller, 2013). It helps sellers to form a sustainable business relationship (Marquardt, 2013), achieve financial returns (Anees-ur-Rehman *et al.*, 2018), and raise industrial barriers against competitions (Lin and Siu, 2020). Industrial branding focuses on building a long-term partnership, and requires firms to gain sufficient market knowledge (Glynn, 2012). Gaining branding capability is a complex practice whereby firms have to adopt capabilities in building appropriate branding communication methods and strategies, and overcome barriers in the manufacturing industry (Leek and Christodoulides, 2012).

A successful industrial brand is supported by adequate resources in areas of advanced technologies, creative design and quality products (Kotler and Pfoertsch, 2006). Unlike the OEM, where the assembly deal brings immediate financial return, branding does not create income or rapid results. Instead, branding rests upon the accumulation of capabilities, and is achieved by, in effect, cannibalizing of a firm's resources. Upgrading to OBM involves various challenges. For instance, Chu (2009) states that branding is a risky and challenging practice that may potentially damage a well-established partnership with contractors. The complexity of branding requires subcontractors to actively engage in the contractor's market, establishing a strong reputation and so become an independent player. This may threaten the contractor's

position in the market place, and upset the OEM partnership with contractors. An OEM partnership plays a significant role in financially supporting subcontractors' capability development; thus, the decision to undertake branding is likely to have a negative financial impact on a firm.

Manufacturers from emerging economies seek a pathway along which to grow after they have accumulated capabilities in R&D, innovation and design from their OEM practice (Wan *et al.*, 2015). Therefore, the adoption of an ODM business model is likely to be the first option, due to similarities in the capability condition (Lin and Chen, 2007). OBM requires different types of capabilities to underpin its business activities, and a strong motivation and willingness at the managerial level to determine whether and how a firm can undertake different pathways to compete in the market (Chu, 2009). Driven by market competition, progression to OBM means a fundamental change in the business model and strategic approach to business operations.

### *Industrial upgrading and learning*

Prior literature has asserted that industrial upgrading is a two-part process of accumulating capabilities and relational assets management (Eng, 2009). To illustrate the upgrading process, Dunning (2003) applied the concept of firm-specific relational assets, stating that firms use the resources of willingness and capability to access, shape and engage in economically beneficial relationships; thus, industrial upgrading is a process of sustaining and enhancing these relationships. Ozawa (2005) integrated the firm-specific relational assets concept (Dunning, 2003) with the 'flying-geese' paradigm (Akamatsu, 1962) to explain Japanese industrial upgrading. He referred to 'intra-shop interstitial efficiency' and 'intra-industry interstitial efficiency' concepts:

the former refers to the efficiency of inter-process co-ordinations on the assembly line; and the latter to the inter-process co-ordinations between assemblers and their closely affiliated suppliers of inputs. Ozawa's (2005) analysis reflected the 'proper' use of a firm's relational assets to reinforce the corporate chain of value-added upgrading, and highlighted the importance of studying firms' willingness, internal innovation capabilities and external networking strategies in making decisions for industrial upgrading.

In studying the triggers and consequences of industrial upgrading, Pipkin and Fuentes (2017) proposed an 'induced search' model for manufacturing firms in developing economies. They proposed that firms from emerging markets initiate upgrades when they are pushed by 'shocks' of market vulnerability, which is usually driven by state policies, forcing firms to change their status quo operations. Once initiated, upgrading processes can produce a wide spectrum of results—from little to no advancement in market position ('tread-milling') to vaulting to the forefront of a global industry ('leaps forward')—on the basis of the sources of learning present in the local institutional environment, such as state agencies and business associations. The 'induced search' model emphasizes the importance of learning. However, there is limited discussion on the mechanisms of the upgrading process; for example, how to deal with industrial upgrading failures.

A review of the relevant literature reveals three types of failures in industrial upgrading: *system* failure (Metcalf, 2005), *market* failure (Greenwald and Stiglitz, 2014) and *capability* failure (Lee, 2014). The first two occur at governmental and industrial levels, and the third occurs at the firm level. At present, researchers tend to adopt macro-approaches, using institutional or government support to address the issue (Alvstam *et al.*, 2019), while tending to ignore the micro-dimensions—that is, the

firm's managerial decision process against upgrading. In most emerging economies, private firms are unable or reluctant to conduct in-house R&D, because they consider it is a risky endeavor with uncertain returns (Zhu *et al.*, 2012). The issue is not about having more or less R&D, but rather 'zero' R&D.

Firms with a low R&D capability — a less risky way of doing business — tend to buy or borrow external technologies or production facilities, and to specialize in less technical methods or assembly manufacturing (Santamaría *et al.*, 2009; Yip and McKern, 2014). Brandt and van Biesebroeck (2005) argue that the speed of a firm's internal learning is critical to the success of building firm capabilities. There are different learning models on industrial upgrading to overcome capability failure and raise the level of firm capabilities. For instance, there is the state-firm learning model (Lee, 2016) in which states act as educators taking the form of licensed-based learning or public-private R&D projects to develop firms' capabilities; and the history-friendly model (Landini *et al.*, 2017), in which firms as latecomers follow a learning path to accumulate capabilities to catch up with industrial upgrading. Both models illustrate a learning process of assembling capabilities to achieve industrial upgrading.

In light of this, Gereffi (1999) suggested that researchers should study the mechanisms of industrial upgrading through which organizational learning occurs in trade networks; these include typical trajectories among export roles; and organizational conditions that facilitate industrial upgrading moves, such as the shift from assembly to full-package networks. In response to this call, our research investigates the upgrading behavior of SMEs in the largest emerging economy, China. We explore trajectories of the upgrading model that Chinese SMEs follow and the learning behavior alongside the upgrading process in order to understand the triggers

to upgrading decisions, the obstacles and barriers encountered, and the capabilities acquired in the process of upgrading.

## **Methodology**

To unravel the manufacturing SMEs' perceptions of industrial upgrading in the emerging economy, this research applied a contextual stepwise approach (Siu and Kirby, 1999). We used netnography in conjunction with in-depth interviews for complementary and triangulation purposes (Kozinets and Handelman, 1998) to explore firms' behavior in upgrading from Chinese manufacturers' perspectives. Two stages of data collection were applied: stage 1 collected data through a non-participatory netnography method to outline the issues related to upgrading; stage 2 outlines the factors faced by Chinese manufacturing SMEs based on in-depth interviews.

### *Stage 1—Non-participatory netnography study*

We took the decision to employ netnography as a research method after learning that Chinese manufacturing SMEs were active contributors to online trading forums, posting rich online content that is suitable for netnographic study. The netnography method was originally developed from traditional ethnography, and inherited the nature of anthropology in seeking to understand culture through online day-to-day interactions and observations (Kozinets, 2002). Individuals and organizations have been increasingly using the internet and computer-mediated communication channels to exchange information. Social media, chatrooms and professional webpages are established to share ideas, build communities and contact fellows. For decades, an increasing body of business research has recognized the contribution to consumer

studies from the growing number of online communities (e.g. Kozinets, 2010; Weiyo *et al.*, 2014). Netnography, as a marketing research technique, is faster, simpler, more cost effective and less obtrusive than other research methods such as interview, survey and focus group, and has gained increasing popularity in various research fields for its unique attributes (de Valck *et al.*, 2009; Mkono and Markwell, 2014). It also provides a window into naturally occurring behaviors, and research can be controlled in time to almost up-to-last-minute data (Kozinets, 2006). Netnography helps to gain great insights in the market community, yet there is little evidence of its application in the industrial upgrading literature.

The application of netnography has two approaches according to the level of involvement from researchers: participatory and non-participatory. There are a number of steps to conduct netnography methods: accessing cultural entrée, data collection and analysis, interpretation, ethics consideration, and member feedback (Kozinets, 2002, 2010). We adopted a non-participatory approach to reflect the unobtrusive nature of the study (Costello *et al.*, 2017), involving trawling the Chinese business-to-business (B2B) SMEs online communities, and collecting and interpreting the archival online data.

Starting with the cultural entrée to identify the online community that aligns with the research interest, there is a variety of forums available in the Chinese language for B2B trading purposes. Recommended by veteran industrial practitioners, we selected two high-profile trading forums (*Fobshanghai.com* and *Alibaba.com*) that attract Chinese manufacturing SMEs from different industries to exchange their exporting experience and seek business advice. Both forums met the site selection criteria in terms of being “relevant, active, interactive, substantial, heterogeneous, and data-rich” (Kozinets, 2010, p.8), and were deemed to be the most appropriate forums to address the research questions (Cherif and Miled, 2013).

During the data collection process, we applied a non-participatory approach by following the ongoing discussions to collect threads and posts related to industrial upgrading. The search was initially in Mandarin and was translated into English after. Due to these forums being professionally focused on trading, and particularly tailored to manufacturers, participants were familiar with phrases related to upgrading, such as transition, capabilities development, OEM-ODM-OBM. Threads of interest for the initial search were the keywords related to manufacturing upgrading, for example manufacturing relating to OEM, designing relating to ODM, branding relating to OBM, SMEs capabilities, and manufacturing transition. This resulted in a rich amount of data that could potentially be treated as raw data (Kozinets, 2002). We have downloaded and archived the raw data for further analysis. The next step was data deduction to select the most informative and relevant posts and threads from the data set. After careful reading and selection, 138 threads were traced in line with our research objectives. The selected threads were downloaded, and deemed as automatic transcriptions for analysis (Kozinets, 2002).

Following an inductive guideline, we applied a thematic analysis to explore the data, which has been evidenced in other netnographic studies (see Mkono, 2012; Mkono and Markwell, 2014). We first explored the netnographic dataset in great detail. Starting with data cleaning and close reading of the text, we identified codes and themes derived from the text. Then, we analyzed and examined the text and codes. From this, codes were developed into various themes and patterns representative of the data (Braun and Clarke, 2006). Figure 1 provides an overview of the thematic coding process, as the outcome of the process was to create a small number of categories that captured the key aspects of the themes derived from the data. These themes were intended to meet the research objectives.

----- Insert Figure 1 Here -----

In conducting non-participatory netnography, researchers act as ‘lurkers’ to oversee discussions without disclosing themselves. Since all discussion posts are technically ‘published’ online with no restriction by passwords or other permission, a number of researchers (e.g. Langer and Beckman, 2005; Sandlin 2007) consider netnography data as a public communication that has little concern with privacy. Nevertheless, we informed the forums’ administrations about the purpose of our research. For ethical consideration, user identity has been anonymously presented in this study, and the findings of the netnography further checked via members of the forums.

#### *Stage two — Interview*

Past studies suggest using a combination of netnography with other methods (e.g., survey or interview) for validation purposes (Kozinets and Handelman, 1998; Janta *et al.*, 2012; Skandalis *et al.*, 2015). In a similar vein, we conducted interviews with Chinese manufacturing SMEs in addition to netnography. Of note is that, rather than focusing on a particular product or industry, we aim to understand the manufacturing industry as a whole; thus, interview samples cover a wide range of industries.

Interview data were collected through a snowball approach. We first identified a B2B chatroom that comprised a large number of private manufacturing SMEs from one of the forums. Research agendas were introduced to the members in the chatroom together with an invitational message to explain the research purpose. We asked potential interviewees to recommend other candidates who they believed could

contribute to the study. Nineteen (19) interviewees were secured, comprising 12 manufacturers' senior sales executives with three to 15 years of manufacturing and exporting experience, and seven business owner-managers. Interviews were conducted via telephone and Skype calls as the sample group members were geographically dispersed across China.

The purpose of interviews was to understand manufacturing SMEs' current perceptions of the manufacturing industry, and to explore the challenges they had faced in the transition. The findings from the netnography method provided a brief outline of the upgrading process and key issues related to the upgrading, including the current obstacles and the future development in terms of capabilities acquisition, paving a pathway for the interview method. As such the interview questions were semi-structured and built to validate netnography findings. Questions began by eliciting an understanding of their current business situations, whether they have faced obstacles or advantages from the current business environment; and the business model that they have followed, whether they have followed the OEM model or have evolved in designing and branding. Further questions on business capabilities development and their thoughts on the future manufacturing industry in China were also posed. Interviews were conducted in an informal setting and conversations were open and relaxing, which allowed interviewees to express their opinions freely (Ritchie and Lewis, 2003).

Permission was given to record each interview, and the average discussion time was 41 minutes. We provide interviewees' details in Table 1 and disguise information that might reveal respondents' backgrounds to ensure confidentiality. The interview analysis process was undertaken in a similar fashion to that of the netnography. All authors participated in the analysis process to code, group, categorize and summarize

the emerging themes and patterns, and to review the conceptual development. This helped to validate the outcome and ensure the reliability of the data analysis process.

This research has established its methodological trustworthiness in terms of credibility, consistency and transferability through various applications (Lincoln and Guba, 1985). These applications include: triangulating different types of data, addressing details to ensure consistent findings, generating reliable and ongoing discussions for data analysis between co-authors, and analyzing data through manual and computer-aided content to ensure the transferability (Yin, 1994; Gebauer *et al.*, 2012).

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### **Stage one Netnographic finding - an upgrading process**

In the first stage, the netnographic study offered insights into the upgrading process perceived by Chinese SMEs. Two aspects arose from the analysis: issues encountered by Chinese manufacturing SMEs, and a wish-list of manufacturing capabilities in creativity, industrial designing, R&D and branding.

#### *Thin profit*

Increasing costs were a major issue that eroded Chinese manufacturers' main competitive advantage. The rapid economic development in recent years has led to increasing labor costs in China, offering opportunities for other emerging countries claiming the mantle of cheap producers. Therefore, manufacturing profits have been shrinking, creating the circumstance of '*business profit as thin as paper*' which has

pushed the manufacturer to the edge-of-survival. The following quote illustrates the situation:

I have the same feeling, the cost in labor, production material and facilities have increased a lot, but the product price is reducing. In fact, the competition is so intense, if you don't take the deal, someone will do so; it's a tough situation. (DG, Alibaba0407)

The rapid increase in labor and production material costs has led to higher production costs. Yet, the perception lingers of cheap Chinese goods, and international buyers continue to demand cheaper products. This leaves little room for manufacturers to gain sufficient profits for high value-added production transformation. Our findings reveal that the phrase '*thin profit*' was frequently used to describe the manufacturers' current situation.

### *Quality issue*

Thin profits lead to a number of manufacturing issues, including quality of goods. 'Made in China' has suffered from a number of scandals relating to the quality image. Cases of products such as toothpaste with diethylene glycol, melamine-contaminated food, wooden toys coated with poisonous paint and poisoned milk are some of the issues that reinforce the perception of poor Chinese quality (Sommerville, 2007). Yet, manufacturers readily explained that some of the issues arise from the trade-off demanded by international buyers in cheap but high-quality products, as the following highlights:

Most foreign buyers are aware of the quality issue in some Chinese products, but they still want cheaper ones. So, don't blame us. We always say: a quality product does not come with a cheap price. (CLW, FOBESH2107)

*“Penny price comes with penny quality; you get what you pay for”* is a phrase often seen in forums to describe the association of quality with price. The market demand for lower prices and the increasingly fierce market competition have forced suppliers to reduce trading prices for survival, leading to a reduction in product/service quality. Compared with large firms that have sufficient resources to support quality improvement, smaller firms use cheap materials and components for cost efficiency.

### *Imitation issue*

Concerns over the Chinese ‘copycat’ issue has created the perception that Chinese firms are the masters of ‘*copy-paste*’ businesses. In the forums, manufacturers have confirmed such ‘copycat’ practices exist and particularly they liked to imitate popular products. Firms copied product designs and ideas, and delivered ‘look-alike’ goods at competitive prices. Moreover, the unregulated intellectual property policy does not provide protections for innovative products; instead, firms see that innovation and investment in R&D are expensive, risky and unnecessary, as in the following quote:

In the domestic business environment, the intellectual property protection is not strong. If I spend a lot of money in developing a new product or a good brand, usually it will be copied in the second day (very soon). (GS, FOBSH1108)

Recently, the Chinese government has acknowledged the need to tighten up copying issues in the local market, which may have implanted an awareness of intellectual property violation. However, it is hard to eliminate the roots of copycat practice as it has been already deeply embedded in the market.

### *A vicious circle*

The above issues relating to ‘thin profits’, perceived low quality and imitation form a ‘vicious circle’ (see Figure 2) that illustrates the current situation of Chinese manufacturers in the marketplace. As a result, this contributes to a negative image of Chinese products. The increasing costs lead to the erosion of profits and quality, affecting the image of products made in China. The inability to benefit from R&D leaves manufacturers little room to maneuver in the competitive market. The vicious circle illustrates difficulties faced by manufacturers seeking to upgrade, and reinforces the negative impact of sustaining a competitive advantage.

----- Insert Figure 2 Here -----

### *The demand for change*

The above-mentioned issues become more salient with the increasing competition from other neighboring countries, e.g. India, Bangladesh and Malaysia. Intensive competition makes for an unfavorable environment for Chinese manufacturers, and the future is not rosy. Thus, firms acknowledged the possibility of changes and were willing to contemplate solutions.

We need to change even if it's not an easy way. Without changing, we will be out of the market soon. It is not a long-term development strategy to pursue for a little profit from assembly. (CE, Alibaba 1228)

... we should not think about how to make further cost reductions in the assembly line for a limited profit. In fact, we should learn from the overseas' firms in how they could sell a product at a high price. We need revolution, we need change.... (VO, Alibaba 0705)

To tackle existing issues, a list of new themes was constructed to represent future needs, indicating a transformation into a high value-added production that consists of new capabilities in creativity, industrial designing, R&D and branding.

### *Creativity*

The concept of creativity is often intertwined with innovation. The Chinese manufacturing industry favors OEM production, and takes little interest in acquiring innovation capability which requires knowledge from end users. While creativity is the core capability that has been absent in the manufacturing industry, it is believed to have played an essential role in the business development. Chinese producers understood the importance of creativity capability for business enhancement.

This is the only way to make a better product than others. First, you need to learn about creativity. It is for survival and also for development! (HF, Alibaba 0407)

From a manufacturer's perspective, creativity capability helps to increase productivity and generate premium prices (Lan and Kaufman, 2013), and they claimed that the key solution to overcome the imitation issue was continuously innovating and upgrading their products.

### *R&D*

China has promulgated an aggressive policy in pushing technological R&D forward, and the global market has witnessed rapid changes and high achievements in Chinese technology. Nevertheless, Chinese manufacturing SMEs seem to hold an opposite view, for they claim that most Chinese technology is borrowed from advanced countries.

Their perception is that China has its own way of developing technology and, for most domestic SMEs in China, developing R&D heavily relies on imitation.

Some firms use research funds to buy sample products for peripheral testing. They know very little of the core technology system. Therefore, the firm's research-efficient and technology conversion rates are very low. (YGL, Alibaba0204)

Instead of integrating marketing research to enhance productivity, a convenient method is to study the existing successful products and learn how to assemble components of such success for their own benefit. One can see a shadow of the copying issue in R&D, as imitation was perceived as the fastest and the most cost-effective pathway to catch up with advanced technologies.

### *Industrial design*

Industrial design is one of the key capabilities that enables manufacturing SMEs to upgrade to the high value-added production. In recent years, the Chinese government has issued a number of policies to improve firms' design capability<sup>1</sup>. The new policies have started paying off in consumer markets, whereas in the industrial context, particularly for SMEs, design competence still lags behind that of the advanced economies. We found that the purpose for SMEs adopting designing strategy was to make minor changes to a product's appearance and packaging on the basis of what was popular in the market. We are yet to find evidence of radical and fundamental changes to a product. Despite being the largest manufacturers for several industries across the

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<sup>1</sup> The General Office of the State Council of the People's Republic of China has issued a few policies to fully support to the improvement of industrial design capabilities. These started in 2006 in the Eleventh Five-Year Plan for National Economic and Social Development (see: [http://www.gov.cn/english/special/115y\\_index.htm](http://www.gov.cn/english/special/115y_index.htm))

world, Chinese firms, particularly SMEs, have not yet developed a competent design capability, and that is urgently required for industrial upgrading.

### *Branding*

We found contradictory views in industrial branding: some have voiced the importance of branding, and have claimed that branding should be promoted in the manufacturing industry; others, however, have stated that industrial branding cannibalizes resources and should not be encouraged. Most manufacturers acknowledged the value of branding for achieving differentiation advantages, but their lack of resources created difficulties for investing in brand development.

My previous company has also tried in branding; we made a lot of efforts in building own brand, and were hoping one day that we could catch up with the top firms. However, when we fell into the temptation of real deal, we chose to compromise. Overall, bread is more important than jewelry. For the firm, future development is a remote subject after survival. (GD, FOBSH 1124)

Attitudes towards branding varied among the manufacturing SMEs, some perceiving branding as unnecessary in industrial markets (Wong and Merrilees, 2008; Leek and Christodoulides, 2012). As one of the leading emerging markets, China produces large quantities of ‘best-loved’ products, from Apple iPhones to Disney merchandise, but the international market has limited knowledge about Chinese brands (Kumar and Steenkamp, 2013).

### *A benign circle*

The above-required changes present as a list of industrial upgrading capabilities to form a ‘benign circle’ (see Figure 3). Industrial design is perceived as the foundation upon which to achieve manufacturing development; however, it has to be supported by creativity and R&D capabilities. Further efforts in improving industrial design, creativity, R&D and branding are essential for Chinese manufacturing SMEs to compete in the global market.

----- Insert Figure 3 Here -----

### **Stage two interview findings - developmental factors**

The netnographic findings construct a progressive view of industrial upgrading, representing the current situation of a ‘vicious circle’ that most manufacturing SMEs have been experiencing, and a rosy future that consists of high-value qualities in designing, creativity, R&D and branding. In stage two, we attempt to understand factors underpinning the progression through the interview data. We identified a list of factors that firms had been encountering, and categorized them into internal and external factors.

Internal factors are the organizational aspects that affect the upgrading process, these include small business scale, personal issues, professional relationship management and internal resources. 13 out of 19 responding firms claimed to be affected by those internal factors.

### *Small business scale*

A number of firms (F1, F4, F7, F11 and F13) complained that their small business scale resulted in low-cost and low-quality output. Unlike large organizations and state-owned enterprises (SOEs) that received sufficient support from government-funded institutions, Chinese manufacturing SMEs are more likely to have insufficient resources to support their business development, which prevents them from producing high-value-added products.

The small scale of the factory prevents us from upgrading. Our factory is small in size, so that we do not have sufficient resources for high-value-added production... even if a big overseas buyer is interested in doing business with us, we will have a hard time passing the audit based on our limited facilities. We are a small-scale production. (F1)

### *Managerial characteristics*

Data reveal that managerial characteristics such as management style, entrepreneurial personality and personal preference could either contribute to or impede a firm's development. Firm 14 indicated that the business owner preferred to have a laid-back business style, and focused less on developing branding and other capabilities that require a long-term investment. Firm 11 revealed that the owner-manager's entrepreneurial personality and personal interests conflicted with business development, as stated in the quote below:

The boss does not care to develop it. He is unwilling to spend money on business promotion... I think his personal interest is not making the business grow, but on the affair with the receptionist .... (F11)

I (the business owner) think it is unnecessary to develop branding, I have limited time, and I don't want to make my life about only working for money, it's too tiring.... (F14)

### *Knowledge and relationship management*

A professional business relationship between buyers and suppliers is essential to sustain a business. Four firms (F5, F9, F12 and F14) agreed on the importance of the salesperson's professional knowledge, which could leverage an overall reputation on Chinese goods, as well as sustain a healthy business relationship. F12 spoke of a personal experience in the following quote:

I think part of the bad reputation of Chinese products is caused by the quality of the relationship between the salesperson and customers... My customers told me that they had bad experiences with a salesperson before; the salesperson wasn't cooperative and things got quite ugly. My customer now has a bad impression about the previous supplier. But he is happy with my service. So, I think the salesperson contributes to the overall reputation of 'Made in China'. (F12)

### *Other resource-related factors*

Respondents outlined a number of resources essential to upgrading, including talent with the right expertise, financial support, advanced manufacturing facilities and technologies, and time. These resources are the foundations to support the development of upgrading capabilities. The SMEs, struggling for business survival, participate in market competition by sacrificing profit, which created barriers to further development.

Of the respondents, 10 out of 19 were affected by the external factors that they had been exposed to; primarily, these were inadequacy of intellectual property rights (IPR) protection, exchange rate fluctuation, regional protectionism and market intensification.

### *Inadequate IPR protection*

The netnographic data have identified that imitation in markets is one of the major issues affecting SMEs' upgrading. We explored the imitation issue further in interviews and found a positive link with the insufficient enforcement of IPR protection in China. Since joining the World Trade Organization (WTO) agreement, China has shown positive progress in the implementation of IPR regulations (Blanchard, 2013; Sahasranamam and Raman, 2019), and the industrial market has developed a better awareness of IPR infringement and violation. Nevertheless, piracy rates are still suspiciously high, and the copycat practice exists in assorted ways, as demonstrated by F19:

We do not dare to copy the big names now, like Colgate, they have a factory here, and if the Commercial Department finds out that we have copied them, we will get a serious fine. In most cases, we copy the brands that are not internationally well-known. We once copied a Brazilian brand, and it ended up that the original Brazilian company come to us for OEM productions ... we made the copycat so perfect that they cannot compete with us.... (F19)

Firms approach copycat practice with different strategies. To avoid high penalties for intellectual property violations, firms have plugged the regulation gap by copying regional brands that have no international protection except at the local market. Other firms (Firms 1 and 9) expressed concerns over IPR violation, such as conceptual violation, which is copying ideas that is intangible and hard to track. Overall, the imitation issue has not yet been fully eliminated, but exists in a way that fits the current market regulations.

### *Exchange rate fluctuation*

Firms that operate in the international exporting sector are more sensitive to an unstable exchange rate, as it affects their profits directly, particularly for those small manufacturers. A few firms claimed that it is extremely difficult to provide a quotation that can cover the loss caused by fluctuating exchange rates, while still maintaining a cost advantage. Firm 10 talked about their experience of profit loss resulting from Chinese currency depreciation after a deal was reached. They had struggled to reassess the quotation as it could push the customer to look for a new supplier.

### *Regional protectionism ideology*

Since the Chinese economic reforms in 1978, the ideology of local protectionism had emerged for a purpose of developing local economies (Bai *et al.*, 2004). Barwick *et al.* (2016) listed a combination of factors that lead to local protectionism — i.e. local government's primary responsibility in developing the local economy; private benefits from local firms; and deficient regulation and implementation from central government. With such ideology, some regional governments offer strong local protectionisms to large SOEs (Sahasranamam and Raman, 2019), while remote and impoverished regions purposely protect their SMEs' development. Firm 2 claimed that such regional protectionism directly results in low or no entry barriers for small local firms, possibly leading to a disruptive competition through price wars.

### *Market intensification*

Market intensity leads to high competition among firms. We found a few aspects that directly lead to high competition in the marketplace, such as increasing costs in labor and production lines, low entry barriers and price wars. Those aspects have generated

a high level of market competition, pushing firms to the edge of survival. This echoes the vicious circle model discovered in the netnography study. As Firm 6 stated,

There are many changes in the last two years, labor shortage, increase of wages and other factory costs ... most people have comfortable lives now and they are unwilling to work in factories... the intensive local market has pushed firms to move outside of China, and makes our life much more difficult.... (Firm 6)

We found five firms (F1, F2, F9, F11 and F13) that had encountered both internal and external factors to impede their business development. Overall, both sets of factors provide an explanation of the barriers that SMEs encountered in upgrading to a benign circle.

## **Discussion**

Combining findings and literature studies, we have developed an insightful framework to explain the upgrading process that manufacturing SMEs have followed (see Figure 4). Existing literature has revealed that industrial upgrading is a process of continuous learning and acquiring valuable capabilities to improve manufacturing productivity and business growth (Pipkin and Fuentes, 2017; Wan *et al.*, 2015); nevertheless, there are few studies on understanding the appropriate pathway for SMEs, and the types of capabilities that SMEs should obtain for upgrading. Our study has empirically investigated industrial upgrading in a context of SMEs from an emerging market. Data support the upgrading trajectory of OEM, ODM and OBM (Mathews, 2002), and further reveal such pathway as a process of capability acquisition, supporting the existing studies by Eng and Spickett-Jones (2009) and Liu *et al.* (2013). Moreover, our research details the upgrading as a process of moving away from the current situation

of thin profit, quality and imitation issues, through the acquisition of essential capabilities in creativity, design, R&D and branding.

In the case of SMEs upgrading in emerging markets, we propose that upgrading capabilities are affected by external and internal factors that are underpinned by the interplay of three economic actors — government, industry and firms (Gereffi *et al.*, 2005). The interplay of these three actors imposes a number of constraints on upgrading, contributing to three types of industrial upgrading failures — system failure, related to government policy (Metcalf, 2005; Alvstam *et al.*, 2019); market failure, seen as the industrial level of competition (Greenwald and Stiglitz, 2014); and capability failure is at firm level (Lee, 2014). Both government and industry actors contribute to the external factors, creating an external market environment in the implementation of IPR protection, exchange rate fluctuation, regional protectionism and market intensification. Such an external environment creates market turbulence, significantly affects SME business operations, and impedes them in acquiring new skills, knowledge and market resources.

Firm level actors contribute to the creation of internal factors in small business scales, managerial characteristics and their willingness to upgrade. Upgrading involves engaging in the production of higher value-added products, employing more efficient production strategies, and/or increasing the skill content of a firm's activities (Porter, 2000; Humphrey and Schmitz, 2002). The traditional development path for Chinese manufacturing SMEs is to focus on OEM production in a contractual partnership with global giants (Wang and Chen, 2020). OEM mass production is rooted in Chinese manufacturing SMEs' business ideology, and contributes to a firm's level of capability failure (Lee, 2014). SMEs are wedded to the OEM business model for an instant

financial return, but they are reluctant to invest in capabilities development for upgrading.

----- Insert Figure 4 Here -----

## **Conclusion**

Through the lens of Chinese manufacturing SMEs, we have investigated industrial upgrading in an emerging economy and outlined a framework to illustrate capability development along with the upgrading progress. Our research makes several contributions. First, by using a contextual stepwise approach, we outlined a framework of SMEs' upgrading in the transitional market, guided by theoretical underpinnings derived from the current literature. Our framework provides a guideline for SMEs upgrading in emerging economies, and defines the interaction of actors and factors within the industrial upgrading process. The framework generated from the discussion comprises a comprehensive overview to explain the events in industrial upgrading.

Second, a focus on Chinese manufacturing SMEs helps to compensate for the scarce research on industrial upgrading and SMEs development. Historically, topics related to industrial upgrading mainly draw from Chinese SOEs and larger firms (Gugler and Vanoli, 2015), while existing literature has largely neglected the effect on SMEs, despite the significant contribution of SMEs to the development of transitional economies. By focusing on Chinese SMEs, our research enriches the industrial upgrading literature by extending the research context from large firms to SMEs, and paves the pathway for future investigation in emerging markets.

Third, our findings help firms to identify the impediments to upgrading. We have identified internal and external factors that inhibit the upgrading progress. These

findings enrich the existing literature and provide further implications for firms on the need to identify barriers to upgrading. For SMEs wanting to upgrade, understanding the factors is the first step to seeking solutions. Addressing and overcoming internal factors related to business scale, managerial preference, internal resources and external factors in politically related aspects such as the implementation of IPR protection, fluctuating exchange rates and intense market competition, are the primary steps to upgrading.

This research provides significant implications at both managerial and political levels. Practically, our research provides a pathway for SMEs upgrading and indicates a list of internal capabilities for upgrading, including designing, R&D, creativity and branding. We advocate that more attention should be given to the manufacturing SMEs in assessing the level of industrial upgrading achieved under the structure of an emerging economy. Acknowledging the significant contributions to economy development made by SMEs, the provision of further assistance to help them move from labor-intensive and low value-added production to high value-added creation should be addressed.

For the policy maker, our research provides a clear picture of the capabilities support necessary for SME upgrading, and suggests that state governments wanting to develop SMEs need to provide relevant support to improve capability development and aid them in upgrading to high value-added production. The identification of institutional constraints indicates that, in a transitional economy, the government has a crucial role to play in removing market barriers in order to mobilize and enhance private and small firms' development (Sarasvathy, 2004; Sahasranamam and Raman, 2019), such as enhancing the IPR protection regulations. Our findings suggest that the SMEs understand the importance of developing industrial high-end skills to develop a competitive edge. They actively practice R&D to develop new products, despite

receiving limited institutional support. Policy makers should enhance regulations and enforcements, and help SMEs to build their intellectual property development skills, as well as protecting the output from invalid applications.

This research is not without its limitations. First, we approached this study using firms' perspectives with an assumption of a homogeneous market environment to gain overall knowledge. Such an approach may have discounted the opportunity to explore the heterogeneities of the industry, potentially limiting our understanding of the events arising from an individual industry. Future research might consider a specified industrial context (e.g., the electronics industry) to enhance the body of literature.

Second, this study is based on netnographic data and 19 interviews with Chinese manufacturing SMEs; some may argue for its lack of saturation in the desired field (Saunders and Townsend, 2016). Thus, we suggest that the study should be viewed as preliminary research for future exploration, and that future work should employ a larger sample to enrich findings.

Third, our sample concerns Chinese manufacturing SMEs, and excludes Chinese SOEs, multinational corporations and other large firms. The results generated from this study are more appealing and applicable to Chinese manufacturing SMEs. The outcome from the application to other types of enterprise is unknown. Future research could explore issues relating to large firms that are upgrading on the basis of our framework.

We also note that the use of China as an example may limit the degree of generalization to other emerging economies, due to its unique political context. The distinct difference in policy and national champions may lead to a different direction in guiding industrial development (Chu, 2009), which may be less applicable in its appeal to other country contexts. This leaves room for future research to replicate the study in

other emerging contexts to gain valuable comparison insights, such as other BRICS (Brazil, Russia, India, China and South Africa) countries, and/or Central Asia, considering the recent interest by Chinese government in promoting the Belt Road Initiative (Chohan, 2017).

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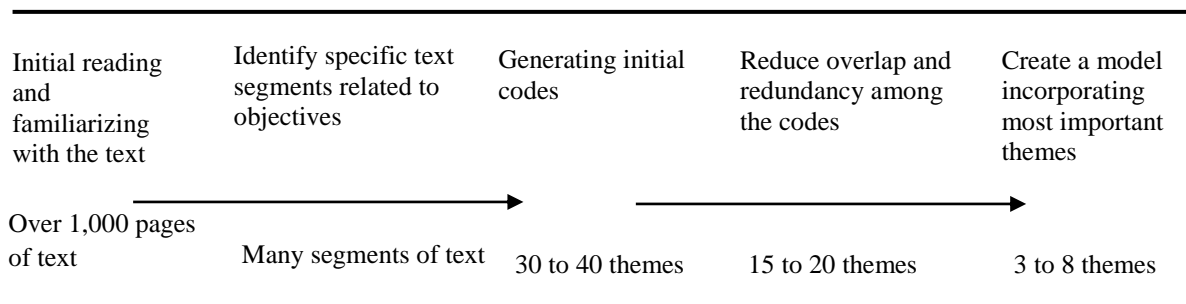
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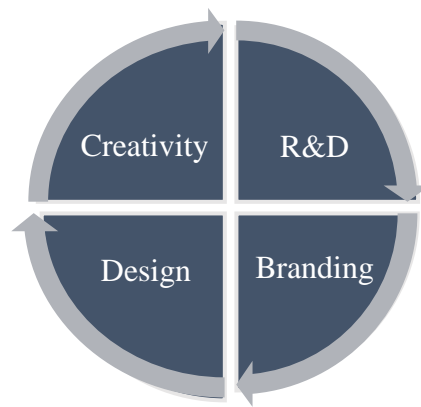


Sources: Thomas (2006), Braun and Clarke (2006)

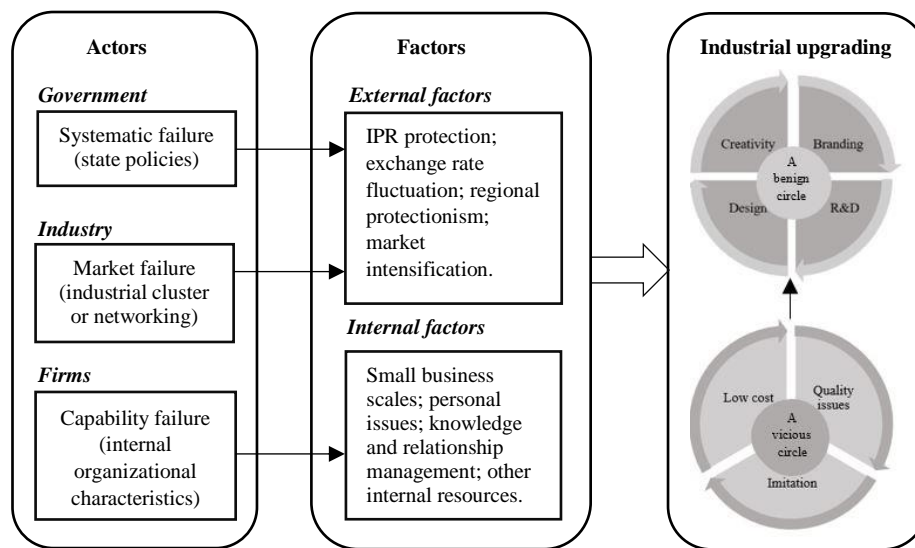
**Fig 1.** The Thematic Coding Process in Inductive Analysis



**Fig 2.** The ‘vicious circle’



**Fig 3.** The ‘benign circle’



**Fig 4.** Manufacturing SMEs and industrial upgrading

**Table 1** Interviewees' information

<b>Firm</b>	<b>Interviewee role</b>	<b>Products</b>	<b>Years of international trading</b>	<b>Firm size (No of employees)</b>	<b>Interview length (in minutes)</b>
<b>F1</b>	SE	Bathroom lighting	4-5	<50	40
<b>F2</b>	OM	Natural stone	8-9	<50	30
<b>F3</b>	OM	Toothbrushes	5-6	<100	40
<b>F4</b>	SE	Fasteners	9-10	<300	34
<b>F5</b>	SE	Disposal medical supplies	3-4	<150	40
<b>F6</b>	SE	Computers	10	<500	25
<b>F7</b>	OM	Packaging processing	5	<50	20
<b>F8</b>	SE	Speakers	7-8	<200	55
<b>F9</b>	SE	LED screens	8-9	<100	30
<b>F10</b>	SE	Creation artwork	6	<500	90
<b>F11</b>	SE	Sound-proofing material	10	<50	70
<b>F12</b>	SE	Chargers	3-4	<100	30
<b>F13</b>	SE	LED lighting	7	<50	50
<b>F14</b>	OM	Accessories	9-10	<150	25
<b>F15</b>	SE	Electronic products	8	<150	50
<b>F16</b>	OM	Promotional textiles, i.e. flags	11	<150	20
<b>F17</b>	SE	Stainless steel tubes	5	<100	50
<b>F18</b>	OM	Computer server cases	4	<150	25
<b>F19</b>	OM	Toothbrushes	10	<250	52
<b>Total</b>					<b>776</b>

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SE= Sales Executive      OM= Owner-Manager