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3.1 INTRODUCTION

3.1.1 Manufacturing FDI and China’s Economic Growth

According to A.T. Kearney’s Confidence Index, China maintained its position as the most attractive destination of FDI every year between 2004 and 2012 and ranked as the second popular destination of FDI since 2013 (behind the United States). As mentioned in the previous chapter, owing to the supportive policy environment, export-oriented FDI as an important source of private capital has been, to a great extent, contributing to the growth of Chinese manufacturing. A large number of FDI projects built production hubs for export, helping increase employment of migrant workers and poverty reduction in coastal cities in China.

However, evidence indicates that FDI into China has started to shift preference from manufacturing to service sectors after the exchange rate of US dollar to RMB became lower than seven, as this implies squeezed profit margins in manufacturing and the booming growth of consumption in service industries in local markets. As shown in Fig. 3.1, the 2008 global financial crisis further accelerated this trend. As addressed in Chapter 1, while manufacturers in China have been facing unfavourable conditions, some FIEs conducted upgrading strategies to transform themselves from traditional ‘sweatshops’ to modern innovation-oriented production bases for higher economic returns.

Nevertheless, given a variety of inherent risks hiding in global value chain (GVC) upgrading, DE firms may not be able to ensure the success of implementing upgrading strategies despite generally being equipped with more sophisticated technology than local firms. This chapter therefore introduces two diverse cases of studies depicting how foreign-invested

1 https://www.atkearney.com/foreign-direct-investment-confidence-index/article/a/glass-half-full-2017-foreign-direct-investment-confidence-index-article
manufacturers carried out upgrading strategies in China. The first case incorporates the ‘Dynamic Capabilities’ perspective (Teece, Pisano, & Shuen, 1997) into the GVC framework, demonstrating how two Singapore-invested OEMs successfully upgraded along the GVC. The second case delineates how a British entrepreneurial OEM suffered a great failure in the Chinese context.

3.2 UPGRADING STRATEGIES BY SINGAPORE/FDI OEMs IN CHINA

3.2.1 Introduction

Exports are commonly viewed as the main driver of China’s economic growth over the past three decades (Gao, Murray, Kotabe, & Lu, 2010). The real engine enabling China to be the global export powerhouse is attributed to a wide range of FDI into this country (Lau & Bruton, 2008). The increasing inflow of FDI is responsible for the majority of China’s exports (Wielemaker & Gedajlovic, 2011), promoting its annual GDP and enabling it to become the world’s second largest economy in 2010. In terms of the industrial distribution of FDI, about 50% of FDI went into manufacturing sectors since the 1990s, particularly into OEM (National Bureau of Statistics of China, 2012). Following the emergence of GVCs (Gereffi et al., 2005), these foreign-invested OEMs

![Fig. 3.1 The proportions of manufacturing and service industry GDP.](image)
capitalized on China’s abundant supply of low-wage labour to manufacture products for developed-country buyers.

However, China has seen annual wage increases and a 23% appreciation of the currency over the past 5 years and the trend looks set to continue for the next 5 years. The low-cost advantages of FDI OEMs are disappearing and exports may not be sufficient for these firms to remain financially successful in the future. The literature shows that the most feasible strategy to enhance economic returns for OEMs is the conduct of functional upgrading: a process to move upwards along the GVCs from OEM to original design manufacture (ODM) and eventually to OBM (Gereffi et al., 2005; Morrison, Pietrobelli, & Rabellotti, 2008). If well-implemented, functional upgrading enables OEM firms to overcome the unequal distribution of profits by engaging in more value-added activities (Humphrey & Schmitz, 2004).

Since China became the largest consumer market for autos, television sets, and cell phones and the second largest for luxury goods during the worldwide recession, its growing domestic market thus symbolizes one bright point on the horizon for OEMs to implement this upgrading strategy for value creation. However, the Chinese mass market demonstrates remarkable heterogeneity and is expected to morph into differentiated and multitiered segments over the next 10 years. China’s domestic market is actually a conglomeration of separate regional markets protected by provincial barriers and segmented by a variety of economic and industrial factors (Tse, 2010). Therefore, this multimarket conception inevitably raises problems for foreign investors to compete in China’s huge but disordered domestic market. As far as the FDI OEMs go, the prominent question is: what are the specific capabilities these OEMs require for changing to adapt to the dynamic Chinese market and uncertainties?

Considering the foregoing arguments, this chapter incorporates the dynamic capabilities perspective (Teece et al., 1997) into the GVC framework and centres its analysis on the premise that manufacturers must invest to build necessary organizational capabilities to ensure success of functional upgrade along the GVC. Despite numerous studies investigating the value creation of FDI firms in emerging economies (EEs) (Horng & Chen, 2008; Li, Wei, & Liu, 2010; Lin & Hou, 2010; Liu, Wang, & Wei, 2009), there is a dearth of reliable and timely studies focusing on the key value creation processes of functional upgrading by foreign-invested OEMs in China. To fill this research gap, we use a multiple-case study to address the functional upgrading trajectory by FDI OEMs in the Chinese context.
Additionally, since functional upgrading involves high risks associated with system-wide changes and there is no guarantee of success, the vision and persistency of top leadership is vital for pursuing functional upgrading. Hence, we first identify the specific dynamic capabilities and leadership style involved in the upgrading trajectory by FDI OEMs to build a conceptual framework. Then we employ a multiple-case study with a pattern-matching analysis investigating two Singapore-invested OEMs to examine the assumed model. This study makes three unique contributions. First, it presents the evolutionary upgrading strategies of FDI OEMs in China in the face of the new global economy. Further, conducting in-depth interviews with top management in both parent companies in Singapore and their subsidiaries in China, this research responds to a recent call for collecting first-hand timely data to investigate FDI issues in EEs (Lau & Bruton, 2008). Finally, the results offer fresh and critical insights into the practical implications for FDI OEMs to grow and prosper in the Chinese market.

3.2.2 Theoretical Foundations
3.2.2.1 Functional Upgrading

Globalization has given many OEM firms in developing countries opportunities to participate in international markets by targeting external markets to gain economies of scale and scope, as well as further technological expertise (Kaplinsky, Readman, & Memedovic, 2009). This phenomenon is characterized by the concept of the GVC (Gereffi et al., 2005; Humphrey & Schmitz, 2004; Morrison et al., 2008). Drawing on the GVC system to coordinate global production and distribution, DE exporters are able to manufacture products based on designs supplied by international buyers or just produce small parts of final products. This GVC approach has provided a primary path for Chinese manufacturers to initiate international businesses via offering OEM services to large MNCs and foreign buyers since the reform and opening-up policy over 30 years ago (Li, Wei, et al., 2010; Lin & Hou, 2010). The GVC view reveals not only a holistic map of the global production network and market, but also a comprehensive and integrated approach explaining industrial development and innovation in emerging countries (Morrison et al., 2008). To exploit the opportunities presented by GVCs and meanwhile tackle competitive global markets, firms need to innovate or upgrade their capacities for performance (Kaplinsky et al., 2009).

However, Schmitz (2006) has questioned why in practice, the developing country producers merely specialize on manufacturing activities but...
delegate higher return activities such as product design and marketing to their international partners? Echoing this, an increasing number of OEM manufacturers have augmented per-unit value of products by carrying out functional upgrading to shift their business functions from competing on low cost production to competing on innovation pertaining to design and marketing activities in GVCs. It is because functional upgrading changes the mix of activities within and between links in the GVC that can be used as an effective means to transform production organizations to design, marketing, and branding corporations. More specifically, research highlights the hierarchy mechanism of functional upgrading in which developing country firms transform from original equipment assembling under contract to global buyers to OEM (producing goods under a buyer’s name), to ODM (involving design activities), to OBM (producing own brand products and participating in marketing activities) (Gereffi et al., 2005; Humphrey & Schmitz, 2004).

As far as China is concerned, evidence shows that many OEMs, including both local and FIEs, have followed the path of functional upgrading, successfully upgrading to OBM status, such as Taiwan’s Acer and China’s TCL and Lenovo (Lin & Hou, 2010). In general, these firms began with OEM, gradually adding postconceptual design services to the manufacturing function, or ODM. After being armed with design capabilities, they then started to manufacture finished products and marketed them under their own brands—this is OBM. As indicated by Matthews (2006), a few Chinese OEMs may start from behind in terms of international arenas, but then overcome deficiencies to become global giants, namely the ‘Dragon Multinationals’. Despite the successful precedents, some large manufacturers in China may still choose to continuously provide OEM services to overseas clients after upgrading to OBM as mature market buyers are usually profitable and reliable clients. However, meanwhile these firms may also produce own brand products specifically for their local markets (i.e. the Chinese market).

It is worth noting that OEMs in general attribute the development of upgrading competence to their partnership with DE clients or buyers. Through strategic cooperation, OEMs could rapidly learn about international technology, practices, and standards from advanced economy MNCs (Horng & Chen, 2008; Liu et al., 2009). In this sense, knowledge and technology transfers between OEMs and their developed country clients are of great importance to facilitating their functional upgrading.
3.2.2.2 Dynamic Capabilities and Functional Upgrading

In terms of competitive advantage, the resource-based view (RBV) states that a firm’s competitive advantage is based on ability to leverage its valuable resources (Barney, 1991). Linking resources to capabilities, Makadok (2001) defines a capability as an organizationally embedded, nontransferable firm-specific resource whose purpose is to improve the productivity of the other resources possessed by the firm. Capabilities are scarce, appropriable, and specialized and are strategic assets that bestow the firm’s competitive advantage. Capabilities cannot be bought; rather, they must be built and may only be developed over a long period of time (Malik & Kotabe, 2009). In terms of an organization, the internal capabilities, combined with external partnerships, are seen as a flexible innovation system (Su, Peng, Shen, & Xiao, 2012).

Originating from RBV, dynamic capabilities are the ‘abilities to integrate, build, and reconfigure internal and external competences to develop new resources and capabilities’ (Teece et al., 1997: p. 516). Dynamic capabilities thus reflect a firm’s ability to achieve new and innovative forms of competitive advantage, reconfiguring its capabilities according to its environmental changes (Malik & Kotabe, 2009; Su et al., 2012; Teece et al., 1997). However, how is one to distinguish a dynamic capability from a mere capability? An organizational capability refers to the set of activities performed by the firm which produces outputs that determine its survival and prosperity within its current strategic setting; such outputs will not change the strategic direction of the firm (Sun & Anderson, 2010). In contrast, an organization’s dynamic capability should reflect its ability to build new and unique capabilities that help identify new opportunities under turbulent conditions and make strategic responses to situational changes more quickly (Weerawardena, Sullivan Mort, Liesch, & Knight, 2007). In other words, a strategic set of dynamic capabilities does not accrue from the firm, but is built consciously and systematically by the leader’s wilful decision-making and actions. Following this logic, scholars argue that corporate profitability may not be sustained by the control over the market (e.g. by using quasimonopolistic practices), but rather by the development of dynamic capabilities to adapt to changing external networks and global situations (Kaplinsky et al., 2009). Viewed from this angle, the dynamic capabilities theory is indeed closely related to the concept of the GVC analytical framework.

Considering the foregoing discussion, our research focuses on discussing the mechanisms between the dynamic capabilities possessed by OEMs and
the implementation of functional upgrading. Functional upgrading is the sequence of acquisitions of internal functional capabilities, while the two critical success factors for upgrading within the GVCs are: (1) the acquisition of key functional capabilities, and (2) better exploiting the acquired capabilities to access not only general markets but also particular market channels (Humphrey & Schmitz, 2004). Both acquisitions and access are dynamic in nature because a shift towards an upper specification/function represents a shift in strategic direction. Following this logic, functional upgrading can be seen as a competitive and innovative strategy that requires OEMs to develop bundles of capabilities that help them to overcome the barriers and difficulties in crossing different functions and ultimately increasing economic performance. Taken together, we assume that to ensure successful functional upgrading, firms must possess certain dynamic capabilities that help them react agilely to the uncertainties and complexities in today’s world.

3.2.3 Conceptual Framework for Pattern Analysis

According to the arguments above, this case thus centres on the three dynamic capabilities that have been identified to be particularly relevant to upgrading under the OEM framework (Lu, Zhou, Bruton, & Li, 2010; Malik & Kotabe, 2009; Su et al., 2012). These are: manufacturing, technological, and absorptive capabilities.

3.2.3.1 Manufacturing Capabilities

These are a significant factor for functional upgrading (Chin et al., 2016; Chin, Tsai, et al., 2016). The degree to which they evolve helps determine how an OEM firm performs in increasingly competitive environments. In the beginning, when collaborating with large MNCs in a developed country, OEMs typically manufacture simple products and are weak in high-end production processes. However, in order to survive, OEMs must have a broader range of manufacturing functions at their disposal to meet the dynamic requirements of the outsourcers from mature markets (Chin et al., 2016; Chin, Tsai, et al., 2016; Lin & Hou, 2010). For instance, lean manufacturing methods have been widely implemented to increase operation efficiency and manufacturing flexibility (Malik & Kotabe, 2009). Hence, the evolution of manufacturing capabilities by OEMs, ranging from
varying product mixes and production volumes to reducing manufacturing process inventories, is expected.

### 3.2.3.2 Technological Capabilities
These pertain to the intensity of R&D and innovation and are widely viewed as critical strategic assets, whereby firms can create the competitive advantages that determine the success of upgrading by OEMs (Morrison et al., 2008; Su et al., 2012). Technological capabilities are not easy to develop or even to imitate because they are embedded in a firm’s operation and, to a certain extent, influence its internal mechanisms (Barney, 1991). Extensive empirical results show that firms with higher levels of technological capability are more likely to compete in hyper-competitive international markets (Zou, Chen, & Ghauri, 2010). By providing manufacturing and assembly services to advanced economy MNCs, OEMs get abundant learning opportunities for acquiring advanced technical and R&D skills to build technological capabilities, including up-to-date technology and the unique capacity to appropriate, adapt, and transform secondary technology (Liu et al., 2009). This reflects the prominent dynamic characteristic in terms of building technological capabilities as the development of such capacity has to cater to the latest need of fast-changing global markets. It is true that, owing to the technology spillover effects within GVCs, some aspirant OEM firms have gradually become proficient in the use of high-tech knowledge after collaborating with global brands for a certain period of time—by which they could further evolve from the bottom of GVCs to be the competitors against their developed-country outsourcers (Humphrey & Schmitz, 2004; Mudambi, 2007).

### 3.2.3.3 Absorptive Capabilities
It is recognized that OEM arrangements promote knowledge transfer associated with sophisticated technology, advanced manufacturing know-how, or new product development skills between buyers and suppliers along the GVC (Liu et al., 2009). As noted above, through providing OEM services to world-class brands, OEMs can acquire a wide range of advanced knowledge that benefits their capabilities development for success in international markets (Weerawardena et al., 2007). ‘Learning from outsourcers’ can be regarded as a vital catalyst that facilitates OEMs to upgrade from low-end to more value-added status along the GVC. Accordingly, absorptive capabilities that represent a firm’s ability to utilize external knowledge through the sequential processes of exploratory, transformative, and exploitative
learning (Sun & Anderson, 2010) are of great importance in functional upgrading.

### 3.2.3.4 Leadership in Functional Upgrading

Leadership is a strategic construct that reflects the extent to which managers are innovative, proactive, and risk-taking in their behaviour and management philosophies (Miller, 1983). It refers to the process, practices, and decision-making activities that top managers use to lead a new entry, including such processes as experimenting with promising new technologies or being willing to seize new product opportunities (Kouzes & Posner, 2007). Leadership is especially important for functional upgrading because upgrading is a high-risk endeavour and there is no guarantee of success. Top managers must have foresight to see the benefits, courage to take the risk, and forbearance and determination to carry through the process. In addition, as described earlier, the achievement of functional upgrading requires OEMs to intensify cross-organizational learning from their international partners for establishing necessary dynamic capabilities. However, owing to the asymmetry of power between buyers and vendors, buyers may not always be willing to provide support for their suppliers’ upgrading (Humphrey & Schmitz, 2004; Mudambi, 2007). In this vein, effective leadership (see Rowley & Ulrich, 2014 for an overview) activities that influence a group of individuals to move towards a common goal play a critical role in driving and propelling the whole organization to accomplish functional upgrading.

By incorporating the arguments above, we develop the logic linking the dynamic capability mechanism to the strategy of functional upgrading and a conceptual framework. This is set out in Fig. 3.2.

![Fig. 3.2 The conceptual framework.](image-url)
3.2.4 Methodology

Owing to the qualitative nature of this research topic, a case-study methodology is appropriate to explore the evolution and interdependencies of firm capabilities in functional upgrading. Our study thus follows case research design using in-depth archival and field data. According to qualitative methodologists (Rialp, Rialp, Urbano, & Valiant, 2005; Yin, 2003), a multiple-case-based study may serve as a basis for either empirically examining existing theories or establishing new theoretical explanations of the new phenomena being researched. Multiple cases could help to produce replication logic—both literal and theoretical—in which cases are treated as experiments, with each serving to confirm or disconfirm inferences drawn from the others (Yin, 2003). Eisenhardt and Graebner (2007) also argue that multiple-case research typically yields more robust, generalizable theory than single cases. In view of these arguments, our study employs a two-case study to enhance explanatory power.

The pattern-matching analysis that enables researchers to capture subtle similarities and differences within cases and associate them with a specific pattern is believed to further reinforce the systematic application of a multiple-case study (Rialp et al., 2005). Therefore, our study also capitalizes on the pattern-matching approach to analyse findings and examine the assumed conceptual framework.

3.2.4.1 Sample Selection

In case study research, sample selection is one of the most difficult procedures (Yin, 2003) because the research samples have to be specific and representative of all cases. We carefully selected two case firms that are Singapore-invested OEMs located in China’s Guangdong province chosen for the following reasons. This Southern province of nine large cities with proximity to Hong Kong has attracted many foreign firms engaging in assembling and manufacturing for world leading MNCs since the 1980s, producing large economic growth rates for more than two decades and importance nationally. For example, in 2008 the export volume of processing trade in Guangdong province accounted for nearly two-thirds (64.6%) of China’s total exports.

The choice of Singapore-invested OEMs was due to the following reasons. Singapore is widely regarded as an important manufacturing hub in Asia with a strong electronics manufacturing sector and emphasis on high technology (Wielemaker & Gedajlovic, 2011). Manufacturing contributes
significantly to Singapore’s economic growth, accounting for about one-third of the country’s annual GDP. Moreover, since the early 1990s, many Singapore manufacturers decided to invest substantial amounts in China, including establishing subsidiary plants or even relocating main production operations to obtain cost advantages (Lau & Bruton, 2008). Taken together, these points make Singapore-invested OEMs suitable samples for this research.

The criteria for selecting the case OEMs in our study were: (1) the firms located in China are Singapore direct investment companies/subsidiaries; (2) they are subcontracted by large developed country MNCs to manufacture components or parts of final products for them; (3) their names are anonymous in the final products market as there are only brand labels on packaging; (4) they went through functional upgrading processes; (5) they are leading manufacturers in their respective industries. This selection procedure resulted in identification of the following two cases: Company A (listed on the SGX^2), headquartered in Singapore, a leading MNC providing a full spectrum of high value-added, integrated turnkey manufacturing services in the electronics industry (Case #1) and Company B (listed on the SGX), headquartered in Singapore, a famous global company producing and assembling precision-machined components used in auto and machinery industries (Case #2).

### 3.2.4.2 Data Sources and Informants

Data were collected from three sources: (1) face-to-face and phone interviews with their president/CEO; (2) interviews with managers of different departments in the same company; (3) secondary sources: internal documents provided by the companies, information on company websites, product and firm brochures, as well as newspaper articles, journal articles, research papers, and informal observations. The interviews were semistructured and open-ended. Respondents were the president/CEO/COO, manufacturing managers, R&D manager/senior engineers, CFO/financial manager, and marketing managers.

### 3.2.4.3 Data Collection Methods

To obtain robust data, a triangulation approach was utilized at the collection stage to ensure that different sources were used when gathering data from each firm. The triangulation of data collection, including interview records,
internal reports, archival data, and literature, can reveal the conditions of enterprises to a maximum extent. To avoid subjectivity, multiple data collection methods were used (Eisenhardt & Graebner, 2007; Yin, 2003). For instance, participants were requested to try their best to provide evidence objectively. The semistructured interviews with open-ended questions in both Chinese and English versions were conducted by at least a three-person team, with one researcher handling the interview questions with the other two recording notes and observations. For the information items that required exploring at length and in depth, the interviewer would ask more follow-up questions. Interviews were tape-recorded at the same time to avoid omitting information and enhance corroborating evidence. To verify the reliability and validity of interviews, the recorded data were processed on the same day they were taped. Also, to resolve inconsistency, researchers listened to the records and returned to the interviewees repeatedly until consensus was reached. If needed, further follow-up telephone interviews would be conducted. Since both firms are listed companies, a wide range of archival records, such as their annual reports and other public statements, were used as supplements. Finally, information and data collected from diverse sources were cross-checked to ensure accuracy and reliability.

3.2.5 Empirical Findings

The findings of our case-based empirical analysis are presented as follows. First, the business profiles of the two firms are shown in Table 3.1. Next, each firm’s implementation and outcomes of functional upgrading are demonstrated. Finally, the pattern-matching approach is applied to further examine the hypothetical conceptual framework, as displayed in Table 3.1.

Case #1

Company A, founded in 1984, is a well-known contract manufacturer producing a wide range of high-mix, high-value, and complex electronic products for global leading MNCs, such as IBM and HP. In 1990, Company A first established two plants in Shanghai bonded areas (i.e. the government-appointed tariff-free areas) following the trend of FDI inflow into China in the 1990s and merely offered OEM services for electronic products to global leading companies. This company advanced to the next level of the GVC later, namely providing ODM for foreign buyers. Exploiting a broad range of low-cost advantages, including labour, operations, and land rent, the group augmented its revenue very quickly and thus went...
public on the SGX in 2002. Since then, the firm has put more emphasis on developing technological capabilities, such as engaging in a variety of R&D activities and building a world-class R&D team. The technological capabilities development enabled it to provide ODM services that can bring better economic returns.

Several design centres strategically located in Asia, Europe, and the United States were set up to acquire ‘state of the art’ technological knowledge. In the pursuit of incorporating design and technology, the firm obtained critical know-how and intellectual property with domain expertise in printing, imaging, instrumentation, radio frequency communication, networking, and data storage used in the electronics industry. It has continued to exert effort to deepen and diversify technological capabilities. Through leveraging and reconfiguring existing and new technologies, the firm generated dynamic technological capabilities and made significant strides in

| Table 3.1 Basic Business Profiles of the Two-Case Companies |
|------------------------------------------------------------|
| **Company A**                                             | **Company B**                             |
| Constitution year  | 1984                                    | 1981                                    |
| Listed year       | 2002 listed on Singapore Exchange (SGX) | 2001 listed on SGX                     |
| Parent Co./subsidiaries | The group is headquartered in Singapore, comprising about 40 companies with global clusters of excellence in South-east Asia, North Asia, America, and Europe | The group is headquartered in Singapore, with other strategic manufacturing locations in Malaysia, China, and Vietnam |
| Current core business and main products | Providing a fully integrated range of electronics manufacturing services (EMS), OEM, ODM, and e-fulfilment services (EFS) for global leading MNEs in electronics industry | Providing highly integrated OEM services on precision-machined components used in automotive and machinery industry, and precision turned parts in imaging and printing industry |
| Main clients      | IBM, HP, AVAGO, NCR                     | TOYOTA, SONY, HP                        |
| Revenue in 2011   | 12 billion RMB ($1.9 billion)            | 409 million RMB ($64 million)           |
|                   | with annual earnings of 786 million RMB ($124 million) | with annual earnings of 19 million RMB ($3 million) |
| Employees         | 14,000 worldwide                        | 3000 worldwide                         |
providing ODM solutions. In 2010, it made outstanding progress on an ODM project with one key storage client, by augmenting this client’s tape library system with Company A-designed and developed precision motion control mechanisms, robotic arms, and system electronics. Moreover, the firm continued to improve its customers’ point-of-sale (POS) products, ranging from updating designs to delivering an exceptional combination of reliability and energy efficiency. This enables it to be a primary turnkey supplier, as well as strategic partner to manufacture cash registers for IBM. In addition, Company A’s technological capabilities are also supported by its effective enterprise resource planning (ERP) system that facilitates information flow and provides an IT infrastructure linking it with its business partners all over the world in a real-time basis.

As far as manufacturing capabilities are concerned, this firm continually strengthens its manufacturing capabilities to meet global leading MNCs’ latest requirements. The constant evolution and improvement of manufacturing capabilities allows Company A to adapt rapidly to sharp fluctuations and declines in demand in advanced economies after the 2008 global financial crisis. More specifically, Company A is highly proficient and cost-effective in manufacturing both high-volume and low-volume yet high-mix, more complex products. To make sure that it had the necessary manufacturing capabilities for the upgrade, the firm established a comprehensive quality control system to meet the requirements of international standards such as ISO 9001:2008, ISO 13485: 2003, ISO 14001:2004, the ODS (Ozone-Depleting Substances), and RoHS (restriction of hazardous substance).

In terms of absorptive capabilities, Company A always looks at commercial relationships as mutually beneficial partnerships and encourages a corporate culture of learning from their strategic partners, particularly from global leading electronic firms. Company A considers the process of transferring knowledge among workers within the supply chain as an important course to brand the group itself. Hence, this company invests a lot of effort into promoting activities that could enhance the organization’s absorptive capabilities. For example, top management supports job rotation and enrichment and provides professional training, as well as a wide range of opportunities for employees to acquire, assimilate, and acquire knowledge from their colleagues and business partners. As a result, Company A uses its great absorptive capabilities to maintain long-term, positive relationships with customers and business partners worldwide.

The board committee of Company A is always managed by top-notch professionals from various fields, including MBAs, engineers, and financials.
The top management team places great premium on talent and innovation, such as attracting experts with special skills to the company’s board, hiring outside professional managers with expertise and experience, and adjusting the salary structure of core personnel. They frequently host ‘brainstorming sessions’ with colleagues to motivate a risk-taking spirit and ‘thinking outside the box’. These activities encourage employees to realize and expand their full potential, build strong cohesion, and, most importantly, foster creativity. In the transformation process of upgrading from OEM to ODM status, the top management team withstood uncertainties and showed high flexibility and adaptability to external changes, which enabled the company to survive the 2008 global financial crisis and seize emerging market opportunities. They also displayed potent strategic desires to upgrade to OBM status in the future. In fact, Company A has tried to sell its own-label printers in some shops in the Chinese market since 2009.

Case #2

Company B, established in 1981, is now a famous contract manufacturer of precision-machined components and assemblies used in the automotive and machinery industry and a well-known OEM of precision turned parts in the imaging and printing industry. The company serves diverse market sectors consisting of many global leading MNCs in imaging and printing, consumer electronics, machinery, automotive systems, and telecommunications. In 1997, it commenced operations in Shanghai to engage in the OEM business and in 2001 went public on the SGX main board after being listed on the SEADAQ ³ board for 3 years. In 2004, to further exploit low-cost advantages and deepen the relationships with its strategic partners, the company set up a factory in Suzhou, China where their major customers of auto components were located. By doing so, the company was able to initiate ODM projects through close collaboration and communication with global leading firms at that time.

To acquire first-tier status as a turnkey supplier of leading MNCs in the GVC, Company B put in a lot of effort in developing technological capabilities for providing total solutions to all customers’ machining needs. Emphasizing customer-oriented technical development, the company established an online SPC system that identifies and tracks critical process parameters in production on a real-time basis. This breakthrough in technological capabilities continuously improved Company B’s cross-functional

³ SEADAQ is the second board stock market in Singapore, just like NASDAQ in the United States.
process arrangements in manufacturing, which allowed the company to address the needs of individual customers on service, delivery, and quality, respectively. In addition, with a sophisticated ERP system, Company B has integrated all the activities of its supply chain, whereby it can cater to the various needs of customers in an ever-changing global marketplace.

In terms of upgrading manufacturing capabilities, Company B focused on prioritizing processes in production and thus established multidisciplinary manufacturing processes, such as multiaxis CNC turning centres and multisindle automatic lathes. The company always ensures that the improvement of manufacturing capabilities is matched with relevant global quality standards, and is certified by ISO/TS 16949, ISO 9002, ISO 14001, and OHSAS 18001.

To upgrade to ODM status and meet the ever-changing needs of the marketplace, Company B has built a potent knowledge base that could constantly encourage organizational members to engage in active learning, system thinking, and information sharing with each other and with cooperative partners throughout the GVC activities. The company has operated a comprehensive Institute of Technical Education (ITE), Singapore in-house training programme for foreign worker training and certification, which is an officially approved programme by the ITE in auto maintenance. Through continuous and cross-functional learning in the GVC, this company has developed strong absorptive capabilities that can be employed to recognize external knowledge sources, then assimilate the knowledge acquired and ultimately integrate it into existing knowledge bases.

The board committee of Company B has been led by Mr. Tan, a main controlling shareholder since July 1989. Considering that he also covers the duties of managing director, he is actually the highest/sole leader of Company B with full authority to set overall strategy. With 25 years of experience as a chairman/managing director in the die-casting, electroplating, precision turning, precision machining, and various assembly businesses, Mr. Tan led Company B to build and sustain a strong business foundation, which enabled it to cope with economic uncertainties and business volatility, such as the 2008 global financial crisis and 2010 European debt crisis.

Mr. Tan attached great importance to R&D, innovation, and, most importantly, continuous improvement in operations. He is aggressive, energetic, and resolute with a strong strategic vision and has successfully attracted many talented professionals and experts to work for him. As noted earlier, he was willing to take the risk to initiate the upgrading strategy despite many uncertainties happening in the market. During the global economic
slowdown when their business was not thriving, he steered Company B to review and refine many of their work processes for improving production and operation efficiency.

He has extraordinary foresight to seize opportunities during market turbulence. In addition to investing more in advanced technology at a bad time, Mr. Tan also set a customer-centric policy to enhance higher-value business with existing customers rather than looking for new customers. These daring actions raised Company B to a higher level of position as a one-stop solution provider/turnkey supplier for many customers.

3.2.5.1 Pattern-Matching Analysis

We conducted the pattern-matching analysis to match our survey findings with the proposed conceptual framework. The results are shown in Table 3.2.

| Company A | Company B |
|-----------|-----------|
| **Technological capabilities** | **Total solutions to all customers’ machining needs** (customer-oriented technological development) |
| • Several R&D centres strategically located in Asia, Europe, and America | • An on-line SPC system identifies and tracks critical process parameters in productions on a real-time basis |
| • A high-tech and unique ‘Point of Sales’ system covering ‘point of conception’ and ‘point of consumption’, providing a stand-alone service or as part of the value chain management services to clients | • A supportive ERP system integrating all activities of the supply chain and providing total solutions on customer relationship management |
| • A supportive and effective ERP system | • Obtaining critical patents and intellectual property used in electronics industry |
| • Obtaining critical patents and intellectual property used in electronics industry | • Total solutions to all customers’ machining needs (customer-oriented technological development) |
| **Manufacturing capabilities** | **Optimizing production: building capabilities to deal with multiple manufacturing process simultaneously** |
| • A high level of manufacturing flexibility: highly proficient and cost-effective in both high-volume and high-mix, low-volume products | • ISO 9001:2002; ISO/TS 16949 and ISO 14001:2004 and OHSAS 18001 |
| • ISO 9001: 2008, ISO 13485: 2003 ISO 14001:2004, RoHS and the ODS |
In accordance with the assumed conceptual framework, we find that technological, manufacturing, and absorptive capabilities are the key dynamic capabilities for FDI OEMs in China to carry out functional upgrading. Our results show that Singapore-invested OEMs in China have been successfully transformed from OEM to ODM/OBM modes and thus are able to obtain more economic returns. Furthermore, strong leadership plays a pivotal role in driving OEM firms to climb the ladder of the GVC, to engage in more value-added activities, such as ODM and OBM, and eventually earn higher economic returns. Overall, this study illustrates the significance of critical dynamic capabilities in executing the strategy of functional upgrading and highlights the significance of leadership in guiding the upgrading process. Given that the capabilities are dynamic, management should not wait until they are in place before initiating the upgrade. Instead, they can adopt the approach of building the necessary capabilities from the inception or during the process of upgrading.

Our study makes three unique contributions. First, it reveals a holistic picture delineating the upgrading strategies by FDI OEMs in the Chinese context from a dynamic capabilities perspective. More specifically, our study explores how Singapore-invested OEMs exploit the dynamic capabilities developed via collaboration with global leading MNCs to implement functional upgrading, whereby they further cultivate China’s huge domestic

| Company A | Company B |
|-----------|-----------|
| Absorptive capabilities | Encouraging employees to disseminate tacit knowledge acquired within the GVCs through a wide range of activities, for example, staff training, job rotation, cross-department communication, and the company’s routine/regular meeting | Encouraging active learning between cooperative partners in GVC activities |
| Leadership | The top leaders of both firms are quite innovative, visionary, pragmatic, adaptable, and persistent, with particular concerns for attracting and retaining talents, maintaining good relationships with customers, as well as achieving eco-friendly sustainable development | A comprehensive, certificated in-house training programme for foreign workers, an officially approved programme by the ITE in autonomous maintenance |

### 3.2.5.2 Discussion

In accordance with the assumed conceptual framework, we find that technological, manufacturing, and absorptive capabilities are the key dynamic capabilities for FDI OEMs in China to carry out functional upgrading. Our results show that Singapore-invested OEMs in China have been successfully transformed from OEM to ODM/OBM modes and thus are able to obtain more economic returns. Furthermore, strong leadership plays a pivotal role in driving OEM firms to climb the ladder of the GVC, to engage in more value-added activities, such as ODM and OBM, and eventually earn higher economic returns. Overall, this study illustrates the significance of critical dynamic capabilities in executing the strategy of functional upgrading and highlights the significance of leadership in guiding the upgrading process. Given that the capabilities are dynamic, management should not wait until they are in place before initiating the upgrade. Instead, they can adopt the approach of building the necessary capabilities from the inception or during the process of upgrading.

Our study makes three unique contributions. First, it reveals a holistic picture delineating the upgrading strategies by FDI OEMs in the Chinese context from a dynamic capabilities perspective. More specifically, our study explores how Singapore-invested OEMs exploit the dynamic capabilities developed via collaboration with global leading MNCs to implement functional upgrading, whereby they further cultivate China’s huge domestic
market. Second, since in-depth interviews with top management were conducted in both parent companies in Singapore and their subsidiaries in China, our study echoes the appeal for collecting more timely, first-hand data, including raw and informal forms, by which we can better capture reality (Lau & Bruton, 2008). Third, on the basis of documenting functional upgrading, our study presents a context-specific dynamic capability mechanism by foreign-invested OEM firms in China, responding to calls for the investigation of dynamic capabilities in specific contexts (Weerawardena et al., 2007).

Our findings also provide insightful managerial implications for FDI OEMs operating in China, perhaps helping them to grow further and prosper. Evidence reveals that creating own brands is likely to cause animosity from main buyers and GVC leaders towards their OEM suppliers (Morrison et al., 2008) because OEMs may leapfrog them to compete against their initial outsourcers in international arenas after developing sufficient capabilities (Matthews, 2006). Despite this, a large number of Chinese manufacturers still view OEM partnerships with global brands as a springboard to learn about creating own brands (Chin et al., 2016; Chin, Tsai, et al., 2016). In contrast, Singapore-invested firms seem inclined to regard OEM collaboration as a long-term stable strategy to secure growth and profits by establishing trust relationships with world-class brands. As such, Singapore OEMs usually endeavour to upgrade to ODM status, but hesitate to proceed to upgrade to OBM status. In this vein, Singapore-invested OEMs in China reflect an idiosyncrasy to establish thicker linkages and dense interactions with GVC partners rather than to build own brands. Following this logic, it is plausible to claim that both foreign-invested and domestic OEMs in China may view the outsourcing trends concerning functional upgrading along the GVC differently.

3.2.5.3 Limitations and Recommendations
This exploratory study offers some avenues for future research. However, we acknowledge that it has several limitations. First, in terms of research methodology, a two-case study may not be able to offer sufficient evidence to examine our assumed model. Second, in addition to the three organizational capabilities identified, there may be others; future research could try to identify more vital and relevant capabilities that affect functional upgrading. Third, scholars should pay attention to discussing the mechanisms and interactions among different organizational capabilities, as well as the importance
weights and synergy of individual capabilities. By doing so, the path of functional upgrading can be articulated in a more systematic and extensive manner. On the basis of the foregoing arguments, it is also recommended that future research could conduct a comparative study including firms that did not engage in functional upgrading—which may reveal a more comprehensive picture of FDIs and their upgrading strategies in China.

### 3.3 UPGRADING TO OBM BY AN ENTREPRENEURIAL BRITISH OEM IN CHINA

#### 3.3.1 Introduction

Global start-up firms that exploit the opportunities of globalization to achieve superior performance in international markets from their inception, or shortly thereafter, have generated significant research in the field of entrepreneurship (Jones, Coviello, & Tang, 2011; Kiss, Danis, & Tamer Cavusgil, 2012; Oviatt & McDougall, 2005). Owing to poor intellectual rights protection and weak legal enforcement coupled with the very complex bureaucratic systems in EEs, global start-up firms with less resources deciding to venture into EEs may face more intricate problems than those internationalizing their business in other developed economies (DEs) with more sound market infrastructures. However, in recent years, there have been an increasing number of entrepreneurial firms from DEs that prefer to enter large EEs such as China at an early stage given the large populations and attractive consumer markets (Jones et al., 2011; Kiss et al., 2012). While the literature still tends to explain how large enterprises from DEs compete in EEs (Lyles & Park, 2013; Yamakawa, Khavul, & Peng, 2013), there has been a scarcity of literature demonstrating why some DE global start-up firms choose to venture into EEs with higher uncertainty instead of into other mature markets with more familiarity.

To fill this research gap, our study uses the Chinese manufacturing sector as a research background because China is the world’s largest EE and manufacturing FDI plays a crucial role in its economic growth. Notwithstanding a large body of research that has addressed the upgrading strategies conducted by world class manufacturers from DEs in China (Chin et al., 2015; Herrigel, Wittke, & Voskamp, 2013), the development trajectories of small, entrepreneurial foreign OEMs in this context have been much less covered in the literature. As such, our study employs a case-study approach, investigating how a British OEM accelerated its
internationalization process by setting up a plant in China. This study elucidates how a small foreign OEM was willing and daring to bear the high risks of upgrading to OBM status in China by collaborating with Chinese SOEs.

Given that global start-up OEMs as a unique form of international new ventures derive from GVC theory (Chin et al., 2016; Chin, Tsai, et al., 2016), our study takes the GVC framework as the departure point to illustrate how global start-up OEMs from DEs enhanced China’s economic development (Gereffi, 2009; Ivarsson & Alvstam, 2011). Seeing that the entrepreneur or SME in general has full authority to make big decisions (Oviatt & McDougall, 2005), we also incorporate the international entrepreneurship view to characterize the unique internationalization and corresponding entrepreneurial behaviours of the case—namely how a British entrepreneur observed, evaluated, and exploited the cross-border opportunities in an unfamiliar Chinese context.

The outline of this study is as follows. First, we integrate international entrepreneurship and GVC perspectives to identify the key external factors that triggered the decision of a British global start-up OEM to enter a psychically distant country, China. Second, a description of the sample case is provided. Finally, we demonstrate how our empirical findings contribute to the literature.

3.3.2 Theoretical Foundation

3.3.2.1 International Entrepreneurship and GVCs

The label of ‘born global firms’ or ‘global start-ups’ refers to early internationalizing firms that span international borders almost at birth (Chin et al., 2016; Chin, Tsai, et al., 2016; Jones et al., 2011; Oviatt & McDougall’s, 2005, 1994). The traditional Uppsala model of internationalization (Johanson & Vahlne, 1977) argues that firms’ internationalization should be a gradual process that needs sufficient experience and knowledge to reduce the ‘liability of foreignness’ (Zahra, 2005) and risks. However, Oviatt and McDougall’s (1994) theory of international new ventures draws attention to the fact that some small and young ventures may not actually own such experiences and resources, but use their remarkable resourcefulness to compete internationally from their inception. This rapid internationalization framework explains the emergence of the rising power of young, small firms in the global marketplace.

The major difference between these models resides in the choices of entry and operation modes firms adopt for internationalization.
Oviatt and McDougall (1994) claim that global start-ups with inherent entrepreneurial spirit and ‘learning advantages of newness’ (Autio, George, & Alexy, 2011; Zahra, 2005) transmit and assimilate information very quickly. Such firms may adopt higher and more aggressive modes of foreign market entry, such as building wholly-owned subsidiaries at their inception. In contrast, Johanson and Vahlne (1977) emphasize ‘bounded rationality’, which suggests that firms learn experientially and measure risks cautiously in internationalization. Firms should, in general, accumulate knowledge to increase their commitments in foreign markets step by step. In other words, the learning trajectories for internationalization by global start-ups and established firms may be varied—which highlights the pivotal role of international entrepreneurship in determining the timing, scope, and scale of internationalizing firms. This raises various issues for researchers to explore. After all, while the background, experience, and personal characteristics of entrepreneurs are of great importance to firms’ international entrepreneurial behaviour (Chin, Tsai, et al., 2016; Kiss et al., 2012), it is imperative to investigate the links between global start-ups’ learning and their entrepreneurial activities and how the links contribute to firms’ competitive advantages. It is also worth further study whether the learning form and content of global start-ups will change as they reach the mature stage of development in host countries.

In sum, as noted earlier, it requires further elaboration as to why some DE global start-ups choose to confront an environment (i.e. EE) that is more volatile, uncertain, and complex and structurally different from their original countries (i.e. DE). Owing to the multidisciplinary nature of the global start-up phenomenon (Oviatt & McDougall, 2005), our research incorporates the international entrepreneurship view into the GVC framework to delve into relevant issues.

3.3.2.2 Global Start-Up OEMs

Global start-ups have been classified as one of the four typical types of international new ventures (Oviatt & McDougall, 1994): export/import start-up; multinational trader; geographically focused; and global, according to the differences in the possessions of unique knowledge. However, owing to increasing global complexities, it is highly possible that the internationalizing patterns of global start-ups may vary under different combinations of industry, market, corporation, and entrepreneur-related conditions. There might be more kinds of international new ventures than that presented in the existing literature. For instance, one predominant but previously ignored type is
the ‘global start-up OEM’ that focuses on low cost production and assembly functions within GVCs (Chin et al., 2016; Chin, Tsai, et al., 2016)—yet this is actually a typical and representative type of global start-up firm in the manufacturing industry of DE and EE with large amounts of cheap labour, such as China.

Since the 1990s, in order to reduce costs, quite a few DE MNCs have started to position their core business primarily in brand management and outsourced low value-added production to OEM suppliers in China (Herrigel et al., 2013). This cross-border outsourcing trend has encouraged not only big but also small and medium-sized OEMs from DEs to follow their key buyers’ strategic options venturing into China (Chin, Tsai, et al., 2016). As illustrated in the previous section, China had been attracting the world’s largest amount of FDI into its OEM industry. Such DE global start-up OEMs, unlike the mainstream model of DE global start-ups emerging from high-tech industries, are mostly labour-intensive rather than technology-intensive because these firms used to exploit the abundant supply of cheap labour in China to compete. Compared with domestic OEMs in China, DE global start-up OEMs often have a relatively broader knowledge base in international marketing and modern technology, despite the weakness of local market knowledge and social networks (Chin & Liu, 2017; Chin et al., 2015). Following this logic, the DE global start-up OEMs in China still possess certain comparative advantages against domestic OEMs when competing in the export and international arenas.

Following the discussion above, it is conspicuous that internationalization by DE global start-up OEMs in China seems to be resource—rather than market-seeking as they position China as a production hub or sourcing platform to acquire low-cost advantages. Yet continuously rising labour costs and sharp currency fluctuations have been squeezing OEM’s profit margins in China. Meanwhile, China has grown to be the biggest consumer market for automobiles, televisions, cell phones, and luxury goods (Chin & Liu, 2017). As such, China, in the eyes of many countries and MNCs, has become a very promising market rather than just a low-cost production base. Its fast-growing local demand symbolizes one silver cloud on the horizon—which motivates DE global start-up OEMs, especially those with years of experience in China, to upgrade from OEM to OBM status or to diversify their business activities apart from manufacturing for better returns.

Nevertheless, it remains unknown how and why DE global start-up OEMs conduct their upgrading strategies and increase their commitments in China, as China’s FDI policy is often more in favour of supporting large
MNCs. In response, our study integrates the international entrepreneurship and GVC perspectives to demonstrate the 10-year internationalization trajectory of a small British OEM venturing into China, articulating how contextual variables of EE shape DE global start-ups’ entrepreneurial behaviours in the process of adapting to the changing competitive context of emerging markets.

3.3.3 Methodology

The case study method is particularly appropriate when research covers a real-time environment or when there is little empirical substantiation of relevant issues (Eisenhardt & Graebner, 2007). Considering the salient real-time characteristic and dynamic essence of our research, we conducted an 18-month longitudinal field study (from August 2012 to February 2014) using a single-case research approach to investigate the early internationalization trajectory and subsequent development strategies of a British OEM we called TECHSAVVY in China. To enhance our explanatory power we facilitated continuous mutual learning and understanding between involved researchers and the local firm.

3.3.3.1 Data Collection

The main form of data collection was regular in-depth interviews (monthly) with the managers of several key departments. We also reviewed the internal reports and archival documents for 10 years (2003–13). Therefore, data could be triangulated between real-time observations and retrospective investigations of firm records—which enables the establishment of a chain of evidence (Eisenhardt & Graebner, 2007). Moreover, we conducted semistructured and open-ended interviews at least once every 3 months with the top management team, namely the chief executive officer (CEO), the deputy managing director, and the engineering director. Each of these interviews was conducted in either Chinese or English according to the interviewees’ request and lasted about 2 h. To ensure the robustness of data, all interviews were tape-recorded and undertaken with a three-person team, where one researcher handled the interview questions and two researchers were responsible for noting down all the responses.

To verify the reliability and validity of data, the recorded data were transcribed within 24 h of the interviews. Given a participatory action research, we requested the firm to allow us to participate in some decision-making

4 All names of companies and persons were pseudonyms for reasons of confidentiality.
meetings regarding the enactment and implementation of their new internationalization strategies in China. Hence, we attended quite a few meetings discussing their most important strategic move on upgrading to OBM in China—namely building a strategic alliance with an SOE to produce own-brand products—over a period of 16 months (September 2012 to December 2013). Although top management asked us to provide suggestions at the meeting, we strictly adhered to the role of observation and did not voice any opinions during the course of discussion until critical decisions were made.

In the following section, we detail the firm’s 10-year internationalization journey. This case chronicles how Chris, the entrepreneur behind TECHSAVVY, spent 10 years leading his firm to upgrade from a low commitment mode (OEM) to a higher commitment mode (OBM) in China. This journey is categorized into six stages: (1) The beginning; (2) from 2003 to 2004; (3) from 2005 to 2007; (4) from 2008 to 2011; (5) from 2012 to 2013; (6) from 2014.

### 3.3.4 Key Findings

We first briefly introduce the background and the crippled start-up of the case firm.

#### 3.3.4.1 Background and Crippled Start-Up

TECHSAVVY, funded in 2003 by the British entrepreneur, Chris, was originally a UK OEM that in the same year established a wholly foreign-owned subsidiary in Guangzhou (GZ), China. TECHSAVVY, producing metal and plastic components for the auto and plumbing industries, had focused on providing OEM services for global leading MNCs that outsourced production of part or finished goods to China for the first 7 years. Until 2013, the firm had another four shareholders. Andrew was an old friend of Chris, dealing with orders related to engineering and based in the United States. Philip who resided in Australia assisted Chris with his expertise in plastics and metal engineering to win orders that required professional technical knowledge. Lili, living in the United Kingdom, was in charge of all nontechnological orders. Julia was promoted to deputy managing director and a business partner in China in 2010 after 7 years of working with Chris. Having about 40 years of working experience in the OEM industry in Latin America and China, Chris established a trusting relationship with his major clients from developed markets and gained a deep understanding of his local competitors in China.
Though Chris himself is not strictly speaking an engineer, his grandfather and great-grandfather were outstanding chief engineers who helped British companies to build the Indian railway network. Inheriting his family’s glory, Chris seems to be a ‘born engineer’ as well as a technological talent and quickly developed a high-quality engineering team in China. With about 40 years of working experience in more than 70 OEMs across the world, Chris established an incredibly trusting relationship with his major clients from developed markets. In addition, serving as the vice chair of the British Chamber of Commerce in GZ for years, he also built good relationships (guanxi) with the local government and a variety of domestic OEM suppliers which enabled him to closely watch and gain a deep understanding of his competitors.

The Beginning: The SARS Crisis

In January 2003, Chris arrived in GZ. After renting a two-room apartment for use as his residence as well as office, he posted a recruiting advertisement for a business contact manager in China that attracted about 60 candidates. He selected a young Chinese woman who was proficient in English, Spanish, Cantonese, and the Shanghai dialect of Mandarin as his manager and another woman as her assistant. Thus, a three-person company was set to go in February 2003.

However, owing to the sudden outbreak of severe acute respiratory syndrome (SARS) in Southern China, the World Health Organization (WHO) issued a global alert. Chris followed the British Embassy’s suggestion to fly back to Britain at the end of May and left the office in the hands of the newly hired manager that he barely knew. The WHO continued to issue advisories against travel to China and, therefore, for the next 3 months Chris was compelled to run his business by remote control using the internet and telephone.

Chris flew back to GZ immediately the WHO lifted the restrictions on travel to China in August 2003. Unfortunately and unexpectedly, he found his home office empty, all the Swedish furniture gone, and the operating funds he had remitted to the office missing. From this dramatic incident, Chris learned a valuable lesson. ‘It’s impossible to manage your business in China via long distance remote control’, he said. Accordingly, he made a tough decision to stay long term in GZ. In late 2003, a new manager, Julia, was recruited. She was smart, responsible, and a very capable manager. With her outstanding performance and dedication, she soon became Chris’s
right-hand person, deputy managing director as well as business partner. Since then, Chris has been able to concentrate on looking for new clients.

From 2003 to 2004: Early Success
While most major rivals in China were domestic firms that implemented a low-cost strategy, Chris decided to highlight his particular comparative advantages in engineering technologies, locating the competitive position of TECHSAVVY as ‘Western quality, China prices’. Thus, ‘Chinese people were saying we should buy cheap and sell it at a lower price than our competitors, but to me quality is more important than price’, Chris said. This impressive market positioning enabled TECHSAVVY to successfully obtain purchase orders from two important DE buyers.

Using his strong social networks, Chris quickly approached two big European customers after settling the company problems noted above in late 2003. One was a global leader in the manufacture of kitchen and bath products, while the other was a large MNC famous for producing highly sophisticated engines for commercial vehicles. Both companies were suffering from price pressures at about that time and thus keen to outsource the production of plastic parts and metal components to China to reduce costs. However, both companies had high expectations regarding product quality that required advanced manufacturing technologies and practical engineering skills. Therefore, it was not easy to satisfy the needs of these two large clients. Fortunately, Chris’s impressive background and work history enabled him to convince them that his OEM firm would be strongly committed to engineering and state-of-the-art manufacturing techniques. The two firms continued to buy products from TECHSAVVY for more than 9 years. Owing to the increasing orders placed by the two key clients, TECHSAVVY’s annual sales exceeded US$1 million for the first time at the end of 2004 (see Fig. 3.3).

From 2005 to 2007: Fast Growth Via Innovative Keyword Marketing
Given that corporate websites were becoming one of the main sales channels around the world, Chris decided to redesign his website in 2005. Despite a website overhaul, Chris could not see any significant improvement in the number of online inquiries to their firm at the beginning. After much research, he found a very interesting book by an author who seemed to be a great internet marketing specialist living in Philadelphia. Without hesitation, Chris made a telephone call to him. Through a 2-h private consultation over the phone that cost US$2000, Chris obtained brilliant ideas and
constructive advice from this American. Despite being exhausted, he felt excited and finally figured out how to use keyword marketing as a pivotal tool to boost online inquiries. ‘We had to discover the actual words our clients use when they search for information online about our content topic’, he said.

Following the tactics suggested by the American consultant, he rearranged and reorganized the content on his firm’s web pages. He hired a professional engineer who updated the keywords daily and optimized the website to achieve the highest possible rankings on search engines. After 3 months’ hard work, the number of keywords in TECHSAVVY’s website had been added up to about 180 on the first page of Google results without advertising.

Without doubt, the firm’s operational effectiveness and efficiency were greatly enhanced by advanced information technology. When a new enquiry came in, Chris was immediately informed by email on his iPhone anywhere in the world. He could respond and give instructions to his staff in minutes. By shortening response times, this internet marketing created a win–win situation for both TECHSAVVY and its buyers. As a result, more and more effective inquiries were received via the website since then. In 2007, TECHSAVVY tripled its revenue to US$4 million (see Fig. 3.3).

From 2008 to 2011: Global Financial Crisis Hit
Suddenly, the 2008 financial crisis and subsequent global recession swept the world, leading to sharp declines in demand in mature markets. This severely impacted on China’s OEM industry (Chin et al., 2015). TECHSAVVY, which relied on exports to DE, therefore suffered a sales drop up to 30%
and its annual revenue fell to about US$2.8 million for the next 2 years. To offset lost high-volume orders from large MNCs, Chris decided to make better use of keyword marketing, striving to get more low-volume orders from SME buyers via the company website. Gradually, TECHSAVVY’s sales returned to growth, reaching US$3.2 million in 2010 and US$4 million in 2011 (see Fig. 3.3).

From 2012 to 2013: Upgrading to OBM

Though Chris started to see sales coming back, the severe pressures of continuous currency appreciation and rising operation costs shrank the profit margin of China’s OEM industry. It seemed to become increasingly difficult for TECHSAVVY to manufacture at low prices with superior quality OEM products in this context. Considering how TECHSAVVY’s technological and engineering capabilities developed over the past years had equipped the firm with essential technical know-how to create its own-brand products in related industries, Chris decided to make a bold, brave, and aggressive move, upgrading TECHSAVVY from OEM to OBM status for higher profits.

In early 2011, through an old British friend’s introduction, Chris encountered an opportunity to collaborate with CMM, a large Chinese mining SOE that had been urgently searching for a strategic partner with sophisticated engineering technologies in plastic and metal moulding, casting, and the like. This SOE wanted the new partner to help technically refurbish its current existing, but obsolete and unreliable, mining safety products and, most importantly, personal protection equipment (PPE). Chris intended to grab this valuable opportunity to achieve the above-mentioned strategic goal of building his own brand in China. He thus persuaded CMM to form a 5-year strategic alliance with TECHSAVVY.

In this contract, CMM allowed TECHSAVVY to refer to CMM’s existing but out-of-date and somewhat invalid products and to develop new PPEs under TECHSAVVY’s brand name, while TECHSAVVY agreed to use one patented chemical material for generating oxygen supplied by CMM’s coal mines in its products. In short, TECHSAVVY would be in charge of the entire design and manufacture and be given an exclusive right to sell the cooperative products in overseas markets (outside China), while CMM would have a monopoly right to sell these products in China. The two companies planned to launch two new products every year during the contract period and CMM could get a 7% commission on the sales made by TECHSAVVY in overseas markets. However, the decisions of selecting,
developing, launching, and pricing collaborative products needed to be made through discussion and approved by both sides.

After intensive communication back and forth, TECHSAVVY and CMM finally agreed to overhaul two PPEs of CMM as their strategic objectives for 2012. These were Self-Rescuer (SCSR) and methane gas detector (MGD) products. With CMM’s support, the refurbishment process went smoothly. During the co-development period, in addition to regular meetings with CMM, TECHSAVVY’s engineering team was working very hard on product innovations, ranging from changing the previous design to adding new features, such as waterproof and quakeproof functions. The samples of the two renewed products had been successively completed in late 2012 and soon after were sent to be thoroughly tested at national and international standards.

The new cooperative products looked good, perfectly refurbished in appearance and technologies. Drawing on this strategic alliance with CMM as a stepping stone, Chris felt that TECHSAVVY had successfully transformed from an OEM to an OBM firm. He was very excited and expected that by selling the two new products TECHSAVVY would increase its annual revenue to US$9 million at the end of 2013 and be able to target a year-on-year growth of 100% for the next 5 years. However, at the end of 2014, the two sides were still unable to reach consensus, and yet there was zero income coming from own-brand products for TECHSAVVY (see Fig. 3.3).

From 2014: Unexpected Difficulties and Challenges Ahead

According to the original plan, the renewed SCSR and MGD products under the brand name TECHSAVVY should have been released in early 2013. However, though TECHSAVVY was all set to globally launch these products at about that time, the release date of the first product (SCSR) had been delayed five times until March 2014 due to some critical disagreements between TECHSAVVY and CMM. This delay incurred unexpected risks and posed a danger to TECHSAVVY’s financial stability given that Chris had pumped more than US$500,000 into the R&D process and the certificate application for selling PPEs in different countries. Based on the interviews with Chris, the key problems between TECHSAVVY and CMM are summarized into the following trio.

1. Cultural differences between British and Chinese decision-making

Chris, who participated in most of the bilateral meetings with CMM, pointed out that he just could not understand how to get the green light
from CMM top management. More specifically, since Chris was the main decision-maker, the decision-making process on TECHSAVVY’s side was quick, smooth, and efficient. In contrast, making decisions seemed to be very time-consuming and complex at CMM. Even worse, conclusions agreed on by both sides at meetings could be overthrown later if a higher level boss of CMM disliked it. Chris felt very confused why the laborious work of preparing the negotiation with CMM always fell through.

2. Different opinions on product safety and quality requirements
In terms of product specifications and design, TECHSAVVY suggested that it be in full conformity with the strict international safety regulations since the quality of mining PPEs is significantly related to miners’ lives and the thresholds for selling these products are, in general, incredibly high in developed markets. In contrast, CMM thought that strictly conforming to international standards would include redundant and costly functions that might result in excessive pricing beyond the affordable range in the Chinese market. So they suggested following Chinese standards, as China was the major market.

3. Disputes on pricing strategies
The different points of view on product specification, as mentioned above, raised further disputes on formulating pricing strategies for the products. CMM, favouring low-price strategies, attempted to position the products as a cost leader in both Chinese and overseas markets, while TECHSAVVY preferred to use ‘Western design and quality at a relatively lower price’ as the market positioning and thus to differentiate the products in many ways, such as adding hi-tech features and improving display functions. For example, in 2012 TECHSAVVY had followed international standards in designing a MGD model with built-in Wi-Fi, backup battery, and a sensor to measure the densities of methane and carbon dioxide gas in mines. However, CMM used to benefit from cost leading strategy, insisting that the extras of built-in Wi-Fi, backup battery and carbon dioxide gas detector appeared dispensable, as those were not standard equipment for MGD. Hence, CMM suggested to TECHSAVVY to remove them in order to reduce the manufacturing cost as well as selling price. Given that these functions played a critical role in meeting international safety standards, Chris had been trying his best to convince CMM that whereas the specifications of PPE determine the life or death of miners in mining accidents, it is vital to comply with the rigorous international health and safety standards. A similar situation also happened with the SCSR. Nevertheless, despite hard negotiations over relevant topics, no consensus was made for the past 18 months. As a result,
the launches of the products had been put off five times. At the end of 2013, TECHSAVVY failed to achieve their initial anticipated annual revenue of US$9 million, only producing US$4.8 million through the OEM business (see Table 3.1).

3.3.5 Discussion

Overall, the TECHSAVVY case study presents an inspiring true story about how a British entrepreneur was very courageous in overcoming the ‘liabilities of foreignness’ by venturing into China at the inception and then exploiting innovative keyword marketing to attenuate the liabilities of smallness, achieving fast growth in export markets within 4 years. The results present an intriguing picture of the 10-year internationalization and entrepreneurial journey of a DE firm in the world’s largest EE, China. Although TECHSAVVY’s collaboration with a Chinese SOE to upgrade to OBM might be an unsuccessful try, our research still brings insightful and profound implications for other DE global start-ups that have been or will be venturing into an EE context.

As such, the main contribution of our study is to provide valuable first-hand data and empirical evidence at the intersection of the literature of international entrepreneurship and strategic management. First, our findings contribute to the international entrepreneurship literature, as it reveals that knowledge in entrepreneurial firms tend to be individualized to the founder or the top management team and that SMEs are inclined to exhibit speedier entry or higher commitment to internationalization when their entrepreneurs have personal international knowledge or prior living/working experience in foreign markets. Second, consistent with Yamakawa et al. (2013) study on the internationalization choice of EE new ventures, we discovered that DE global start-ups may decide to take the plunge to internationalize into EEs rather than well-established DEs because it seems more advantageous for these firms to exploit their advanced knowledge and technology as competitive advantages in EE than in DE markets. Third, we conducted a comprehensive in-depth case study, ranging from literature retrieval, archival research, a variety of personal interviews to field investigation—which responds to recent calls for collecting more first-hand, timely data to capture what is behind the tremendous FDI inflows into China (Lau & Bruton, 2008).

As far as managerial implications are concerned, our findings show that although upgrading to OBM is recognized as a feasible strategy by foreign
OEMs to benefit from China’s huge internal market (Chin et al., 2016; Chin, Tsai, et al., 2016), the approach, path, and industry chosen by individual OEMs, as a matter of fact, influence and restrict the success or failure of such an upgrading strategy in this context. It is not surprising that TECHSAVVY encountered severe difficulties as it chose to work with a Chinese SOE for upgrading in a politically sensitive industry—mining—that the government considers part of its national security interests. As such, we remain quite sceptical about whether TECHSAVVY will finally obtain the returns they deserve from their laborious efforts. This stalemate situation is actually an important lesson for other DE global start-ups in China.

3.3.6 Conclusions and Further Suggestions

Considering the foregoing, we conclude that, despite its spectacular growth potential, TECHSAVVY will face more critical challenges in the future, as illustrated next. First, a plethora of studies have discussed the impact of cultural elements such as values, beliefs, and behaviours on the decision-making process (Hofstede, 2015). The differences in decision-making processes between CMM and TECHSAVVY were actually triggered by the cultural differences between the East and the West. As with our findings, it is noticeable that both sides have their own set of core values and basic assumptions on forming strategic alliances. It was imperative for TECHSAVVY to gain a better understanding of CMM’s anticipated goal of their strategic alliance; TECHSAVVY will not be able to make a breakthrough until it gets buy-in and approval from key personnel at CMM. In other words, their disputes on product specification and pricing strategies will not be resolved unless TECHSAVVY can enhance its capabilities in cross-cultural negotiation and communication to work with a Chinese SOE. This is an obvious management development need and an interesting opportunity for a quality provider in this area.

Second, previous research indicates that international strategic alliances can be an effective development strategy for entrepreneurial firms to overcome resource deficiencies, especially when venturing into unfamiliar foreign markets (Chin, Tsai, et al., 2016; Drauz, 2013). Given that the administrative and marketing systems in China are very different, TECHSAVVY was supposed to use a strategic alliance with CMM as a stepping stone to gain legitimacy to help foreign firms attach themselves to local business and political networks in the Chinese market. However, despite being a partner with an SOE local partner CMM, TECHSAVVY...
failed to link itself into an appropriate network that enabled it to become an approved PPE supplier to this company. Viewed from this angle, owing to China’s institutional environment, a contractual nonequity governance mode for international strategic alliances may only provide a limited role in the establishment of a trusting partnership.

Third, evidence shows that GVC upgrading from OEM to OBM may not always be a panacea leading to higher profits (Gereffi, 2009). Since upgrading to OBM requires large investment in R&D as well as brand marketing, it faces higher risks of failure (Chin et al., 2016)—which is also very likely to kindle the animosity of GVC leaders in the target domain and, in turn, intensify competition. Hence, it is doubtful that TECHSAVVY will be able to solely rely on OBM business to achieve further growth in today’s uncertain and competitive environment. It might be a better option for TECHSAVVY to reconfigure its current production, marketing, and R&D capabilities and conduct a new operational model in parallel that can support OBM activities and improve OEM profits.

3.3.7 Limitations and Future Research

In sum, our exploratory longitudinal study offers fruitful avenues for future research. However, it also has limitations. Although our study demonstrates how DE global start-ups venture into China and then deepen their commitments at a more mature phase of development, we may have only scratched the surface of this intriguing entrepreneurial phenomenon. After all, notwithstanding that the longitudinal single-case survey and the use of face-to-face administered investigation are merits of this qualitative research design, self-report data may pose some problems, such as recall bias by respondents. We cannot neglect the possibility that some of our observations could merely reflect a part of the whole story. Findings may have been different had we chosen a different industry or home country. In this vein, scholars are encouraged to carry out more multilevel and multifaceted methods to probe relevant issues in the future.

3.4 CONCLUSION

Overall, the foregoing cases discussed in the chapter illuminate valuable implications and new directions for FDI in China’s manufacturing, as FDI flowing into this sector still increases and is expected to continuously promote technological innovation and upgrading along the GVCs among
Chinese firms. To better understand the co-evolutionary path of FDI and Chinese institutional environment, we further conducted several informal follow-up interviews with the top leaders of the three case firms in 2016 and 2017. We found that much has happened since our last surveys.

Both the Singapore-invested OEMs (Company A and Company B in Table 3.1) moved their major production bases from China to Malaysia between 2013 and 2016, due to rising labour costs in China coupled with more rigorous antidumping barriers in international markets. In 2013, Company A spent RMB 68 million (US$ = 10.3 million) buying a plot of land in Penang, Malaysia where they built many new, advanced production lines. Company B sharply increased the level of automation and laid off three-quarters of the workers in their China factories by 2016, but meanwhile established a large labour-intensive plant in Xinshan, Malaysia.

In terms of TECHSAVVY, no consensus regarding the product design for the Chinese market had been reached between 2013 and 2016. CMM did not also approve TECHSAVVY’s proposal to authorize foreign agents to sell their collaborative products in Latin America. Such an unexpected stalemate allowed Chris to feel that it might be a poor decision to collaborate with a large SOE in China—such kinds of companies are so powerful that small foreign partners do not dare argue against them. As a result TECHSAVVY could not but have returned to concentrate on OEM business since 2015 till now.

Given the latest evidence above, we extrapolate that foreign-invested manufacturers may need to grapple with a greater variety of conundrums during the new round of industrial transformation. Although more and more foreign firms consider contracting an alliance with Chinese SOEs for better cultivating domestic markets and reinforcing their strategic competitiveness, the intricacies of dealing with local officials and partners remain. Hence, despite a lot of manufacturing FDIs that formed IJVs with local partners in the past, many of them have restructured their business into the form of a wholly foreign-owned subsidiary when China announced loosening the ownership restrictions on the entry mode of FDI. We will further discuss in greater detail about the retreat trend of large FDI manufacturers and the emerging trend of local entrepreneurial OEMs in China in the next chapter.