

A theoretical and empirical investigation into investment activities of technologically-intensive Chinese state-owned enterprises in the UK

Abstract

This paper examines the determinants of direct investment in the UK by technology-intensive Chinese state-owned enterprises (SOEs). It also investigates the ways in which investment strategies are being employed for entry to the UK and to achieve access to technology. Drawing on an inductive case study strategy it is found that Chinese SOEs are motivated by their ambitions to close the technology gap by tapping into UK knowledge networks. In terms of entry strategies, the findings indicate that the initial focus on existing technology subsequently shifts to the creation of added R&D capacity and new technology. This is achieved from a permanent UK R&D base which is integrated into the parent companies' wider R&D networks. Technology creation is enabled by adoption of divergent management practices, especially at operational level, reflecting the parent companies' surprisingly adaptable mindsets.

Keywords: Chinese outward investment; Chinese cross-border investment; strategic asset seeking; technology seeking; state-owned enterprises.

1. INTRODUCTION

China is now the second greatest source of global foreign direct investment (United Nations Conference on Trade and Development, 2019). The rise of Chinese outward FDI (OFDI) began with the institution of its 'Open Door' policy in 1979. Since then policies such as 'Going Global', 'Made in China, 2025' (Zenglein & Holzmann, 2019) and 'Belt and Road' (Jie, 2017) have sought to stimulate the extent and pace of technological upgrading in China, utilising OFDI to help with the creation of advanced, competitive enterprises with the ability to compete more effectively in international markets.

China's state-owned enterprises (SOEs) contribute the majority of the country's overseas investment, aided by support from a range of financial and non-financial incentives that are made available by its government (Davies, 2013). In the European context, for instance, 70% of China's FDI originates from SOEs (Hanemann & Huotari, 2016). It is consequently clear that the Chinese government believes that SOEs have a major role to play in fulfilling its OFDI-related objectives.

China's MNEs are frequently drawn to advanced economy countries, owing to the importance of acquiring new strategic assets (Child & Rodrigues, 2005; Rugman, 2007) in order to develop their competitive abilities (Luo & Tung, 2007). They therefore commit growing amounts of OFDI to Europe and to the United States (US) (Hanemann & Huotari, 2017) in pursuit of this goal. The industrial footprint of their OFDI is becoming wider and more varied, but a high proportion of them are still seeking entry into technology-intensive industries, including industrial machinery, ICT and renewable energy in European Union (EU) countries (Hanemann & Huotari, 2017), together with advanced manufacturing and technology in the US (Hanemann et al., 2017).

Studying the reasons and methods employed for internationalisation by emerging market firms is theoretically significant since it tests the extent to which pre-existing international business theory, constructed from the study of firms from developed countries is universally valid. The original and most traditional argument put forward by theorists is that internationalisation is normally employed in order to exploit existing competitive advantages (Dunning, 1993). But these are usually thought to be more widespread and powerful when held by established, Western and Japanese MNEs (Rugman, 2007). A second, more recently developed view is that companies sometimes invest overseas in order to get hold of leading edge technologies and know-how which can then be exploited to reinforce their current competitive advantages (Luo & Tung, 2007; Mathews, 2006). This latter perspective appears to offer a more robust rationale for the growth in internationalisation and OFDI by China's leading SOEs.

The decision to focus on the UK in the current research has been driven by its relative attractiveness to Chinese investors. While the UK, Germany and France are the leading European recipients of investment from China (Hanemann et al., 2019), the UK is of particular interest because it receives higher amounts of Chinese FDI than the two latter countries (Seaman et al., 2017). In the period between 2000 and 2018, it hosted 46.9% of the total value of Chinese FDI inflows into the EU (Hanemann et al., 2019) but the explanations for this have not yet been sought by academic researchers.

Chinese OFDI is dominated by large, profitable SOEs (Morck et al., 2008) whose average investment values are much higher than those of private companies (Organisation for Economic Cooperation and Development, 2008). This trend is illustrated by the average share of China's state-owned investors into the EU which was 65.5% between 2010 and 2018 (Hanemann et al., 2019). Taken together, the predominance of the UK as a European destination for Chinese investors alongside the significant involvement of SOEs, provide part

of the rationale for this study. The first objective of this paper is therefore to determine why technologically-intensive Chinese SOEs are investing directly in the UK.

Whilst scholars have begun to investigate how Chinese SOEs are accessing strategic assets in advanced economy countries, this nevertheless remains a relatively under researched area. Chinese SOEs' investments in a number of European countries have now been examined (Zheng et al., 2016), but this has provided researchers with only a limited insight into the means by which these companies are accessing strategic assets in advanced economy countries on the basis of M&As and greenfield projects. The second objective of this paper is thus to examine how Chinese SOEs are using investment strategies to enter the UK and gain access to technology.

More generally, this paper endeavours to extend the international business literature on emerging market multinationals and their cross-border investment activities. In specific terms, the aim is to augment the comparatively new but expanding corpus of research into emerging market multinationals' investment motivations and strategies in advanced economy countries. The paper's contribution falls into two parts. Firstly, it contributes to the existing empirical literature on the theme of Chinese investment in Europe. Its examination of the investment behaviour of Chinese SOEs in the UK supplements our understanding of their underlying motives and strategies. The results suggest that although acquisition of existing technology is initially important to them, the emphasis tends later to shift towards technology exploration by creating additional R&D capacity and developing new technologies. Secondly, the paper contributes to the theoretical debate regarding emerging market multinationals. It therefore challenges conventional thinking to the effect that they must possess some established

competitive advantages as a precondition to internationalisation. Instead of this, it provides evidence in support of the argument that some emerging market multinationals undertake OFDI in order to obtain these advantages.

2. LITERATURE REVIEW

The literature on Chinese state-owned enterprises and OFDI has developed over time and what had been seen as a first wave in the early 2000s has now become more mainstream in the International Business literature (Alon et al., 2014; Child & Rodrigues, 2005; Matthews, 2002). Chinese SOEs and their global impact have also been studied from various geographical and political angles such as their influence in industrialised countries, but also their new strategic importance in emerging economies (Kaplinsky & Morris, 2009).

Theoretically, the presence of ownership and location advantages for OFDI from SOEs show that existing approaches to IB were adapted to Chinese SOEs and OFDIs (Buckley et al., 2007; Morck et al., 2008; Ramasamy et al., 2012). Also, contributions to governance issues have been studied from an agency perspective and resource-based view (Hu & Cui, 2014).

2.1 Internationalisation and the search for competitive advantage

The literature provides two opposing theoretical positions regarding the advantages that companies such as China's SOEs can acquire by internationalising and developing into MNEs. The first and longer established view posits that internationalisation may be employed with a view to *exploiting existing competitive advantages*, following from the premise that MNEs normally possess unique and inimitable advantages unavailable to their host country rivals. Dunning used the term 'ownership advantages' to identify them, while Rugman referred to them as 'firm-specific advantages' (Dunning, 1993; Rugman, 2007). They both argued that MNEs would be unable to carry through internationalisation successfully in the

absence of such advantages, which they believed to be far more widespread and highly developed among established Western and Japanese MNEs.

The continuing growth in the international presence and standing of MNEs from emerging economies has more recently given rise to a second approach, challenging the contention that MNEs must necessarily possess an established competitive advantage (Cui et al., 2014; Deng, 2007; Luo & Tung, 2007; Mathews, 2006; Wang et al., 2012). Adherents of this revised view argue that MNEs from emerging economies, such as China, pursue internationalisation in order *not to exploit an existing competitive advantage but to gain one*. Their thinking is, thus grounded in the use that an increasing number of these MNEs, including many from China, are now making of internationalisation to explore new, rather than exploit existing sources of competitive advantage.

2.2 Motives for OFDI

Overseas foreign direct investment by Chinese companies is driven largely by the country's institutional environment and industry structure (Wang et al., 2011). Relatively few Chinese companies, SOEs included, have the opportunity to augment their competitive advantages domestically owing to the difficulties that many face when trying to deliver technological advancement at home (Cui et al., 2014). Institutional barriers including restrictive joint venture requirements, market entry constraints, technology transfer requirements and unreasonable technical regulations (European Commission, 2017) dissuade foreign investors from committing to China, limiting the chances of technology transfer to domestically owned-companies. The inadequate legal enforcement of intellectual property rights (IPRs) (falling well below international standards (Kim et al., 2016), constitutes an additional institutional

deterrent in knowledge-intensive industries in particular, where companies are more sensitive to the quality of IPR protection regimes (Javorcik, 2004; Markusen, 2001).

Domestic institutional shortcomings also motivate Chinese companies to undertake OFDI. They often encounter irksome and oppressive administrative procedures at home, in addition to continued and significant interference by local and central government and state officials (Buckley et al., 2007; He et al., 2015). Their costs of doing business at home are also exacerbated by local protectionism at the provincial and municipal levels, inadequate logistics networks (Biosot & Meyer, 2008) and widespread corruption (He et al., 2015). These deficiencies encourage domestic firms to search for more efficient institutional environments overseas, particularly in advanced economies, in which they can share the levels of economic and legal protection, including property rights enjoyed by their leading international competitors. A recent longitudinal study (Shi et al., 2017) supports this view, indicating that domestic institutional impediments including institutional weakness at the Chinese provincial level can raise the probability of OFDI from China.

Additional barriers to the technological upgrading of Chinese companies at home also occur at firm level. Inward foreign direct investment (IFDI) could create new opportunities for technology transfer to Chinese firms that are able to develop supplier relationships with foreign MNEs in their domestic setting (Ernst & Kim, 2002; Giroud, 2000; Ivarsson & Alvstam, 2011; Kim & Nelson, 2000). However, empirical findings indicate that the magnitude of technology transfer is generally restricted (Young & Lan, 1997), for the following reasons. In the first place, foreign-owned MNEs typically carry out their core innovation activities in advanced countries, whilst secondly, technology transfer creates the danger of making Chinese firms excessively dependent on foreign customers, leading to an

unequal balance of power between them (Sun & Du, 2011) limiting future technology transfer prospects.

Chinese technology transfer is also constrained by its companies' capacity to identify, absorb and make use of outside knowledge (Chen, 2004; Lane & Lubatkin, 1998; Lichtenthaler & Eckhard, 2010). Their ability to meet all of these challenges successfully is determined by their pre-existing internal knowledge base and their capacity for absorption (Cohen & Levinthal, 1990). Companies possessing a good absorptive capacity (Fu, 2008) and developed R&D capability will be more likely to maximise new knowledge benefits than those without such advantages (Li et al., 2010; Sun, 2002). Domestic knowledge transfer from foreign-owned enterprises may consequently be restricted if the gap in knowledge separating Chinese and foreign companies is too great.

Chinese MNEs frequently carry out investments in advanced economy countries with a view to accessing strategic assets including advanced technology, brands (Child & Rodrigues, 2005) and know-how (Rugman, 2007) which can all be employed to generate a new competitive edge. They would appear to require strategic assets that are difficult to access at home, which could enable them to compete more successfully with more entrenched Western and Japanese MNEs (Deng, 2007). Chinese MNEs therefore need to look abroad in order to seek out new resources and capabilities (Wright et al., 2005) needed to compensate for their competitive weaknesses (Luo & Tung, 2007) – a point illustrated by case studies of Zhejiang and Geely (Gugler, 2012) and Lenovo, Nanjing Automobile and Huawei (Huaichuan & Yip, 2008).

Chinese companies' OFDI is also driven by additional causes, including the entrepreneurial insight and vision possessed by their leaders, the attractions of host country markets and their need to expand (Alon et al., 2014). The degree of domestic competition that they face, their

firm-level capabilities and the scale and value of their home country networks all influence the capacity of China's leading firms to carry out OFDI (Yiu et al., 2007).

2.3 Ownership and OFDI

Chinese SOEs have taken the lead in raising the country's OFDI, with the support of a variety of state-led incentives. Their ability to do so has been facilitated by government support (Liang et al., 2015; Okhmatovskiy, 2010; Pan et al., 2014; Wei et al., 2015), and by the financial backing and preferential treatment (Luo et al., 2010) that flow from this.

Chinese SOEs' OFDI initiatives have also benefitted from financial and commercial support from a number of state and privately owned institutions, such as MOFCOM, China's National Development and Reform Commission, and the country's banks and insurance companies (Davies, 2013). The domestic and international operations of larger SOEs that operate in the most important sectors are eligible for government financial backing, in the form of below-market rate loans, direct capital contributions and aid programme-related subsidies. Both the China Development Bank (CDB) and China Export and Import Bank constitute leading sources of financial support. The Chinese government also offers non-financial support for outward investors in the form of corporation tax exclusions and value added tax reimbursements (Organisation for Economic Cooperation and Development, 2008).

Taken together, this wide-ranging support package indicates the leading role that China's government expects SOEs to fulfil in support of the country's home- and internationally-based business expansion and development, and the pursuit of its strategic and industrial policy targets for technology and innovation (Amighini et al., 2013; Zhou et al., 2017). It is clear that it would like SOEs to have the ability to acquire the latest technologies and know-

how from advanced economy countries, and to draw on them to reinforce their global competitive strength (Luo et al., 2010; Zhou et al., 2017).

However, it would be reductionist to argue that China's SOEs only seek opportunities for technological transfer overseas because of the support that they receive from government and the institutional and organisational obstacles that confront them at home. They are not only deeply influenced by home institutions, but they are also relatively autonomous, profit-driven businesses (Jones & Zou, 2017) with fully-fledged corporate characteristics (Zhang, 2010). Their OFDI can, thus be driven by a range of non-state centred triggers including their leaders' entrepreneurial insight and vision, the availability of international business growth opportunities, access to natural resources and the apparent attractions of host country markets (Alon et al., 2014). However, the literature is by no means unequivocal in terms of the advantages which state ownership confers on SOEs which engage in OFDI, including those based in China (Huang et al., 2017). State ownership may instead lead to negligible or adverse effects on their ability to carry out such investments (Hu & Cui, 2014; Lu et al., 2014) by making them dependent on government for essential resources (Choudhury & Khanna, 2014; Xia et al., 2014).

SOEs' strategic behaviour is more prone to state intervention, resulting in the diversion of their resources from business to political goals (Okhmatovskiy, 2010), and the potential restriction of their OFDI to narrowly defined geographical areas and lines of business (Luo & Tung, 2007) by the approval system and currency control mechanisms in the case of China (Cheung & Suny, 2009). State ownership also reduces SOEs' autonomy and market focus (Lioukas et al., 1993), and can reduce their legitimacy in host countries where they invest

directly, if they are seen as potential tools of their domestic government (Cui & Jiang, 2012; Globerman & Shapiro, 2009).

State and privately owned enterprises (POEs) co-exist in emerging economies such as China. Differences exist between their internationalisation strategies and motives and the locational determinants of their OFDI (Hu & Cui, 2014; Song et al., 2011). SOEs are more likely to follow political objectives with regard to their OFDI, whereas POEs are mostly free from such constraints, allowing them to utilise it to further their profitability, market position and other strategic goals (Cui et al., 2014). SOEs will be more inclined to engage in natural resource-seeking OFDI (Amighini et al., 2013), reflecting government economic development priorities, while POEs are more likely to use overseas direct investment to search for markets (Ramasamy et al., 2012). The former also have a greater propensity to carry out OFDI in higher-risk locations (Duanmu, 2012), aided by the heightened levels of support that they receive from their home governments (Hu & Cui, 2014) while the latter tend to be more risk-averse (Cui et al., 2014).

SOEs are more likely than POEs to use OFDI to make good any ownership advantages that they lack (Child & Rodriguez, 2005; Luo & Tung, 2007; Yiu et al., 2007). Many employ OFDI for technology and know-how acquisition purposes (Cui et al., 2014; Ramasamy et al., 2012), preferring to carry out such investments in developed economy countries with stable political environments such as the EU and USA. They are also more likely than POEs to seek full control over their new foreign subsidiaries when undertaking mergers and acquisitions (Karolyi & Liao, 2017).

2.4 Location of OFDI in advanced countries

In the years since 2008, China's OFDI has gathered pace in both the US and EU, allowing an increasing number of its MNEs to enhance their technological assets and know-how, enabling them to compete more successfully in the domestic and international spheres (Rosen & Hanemann, 2013). In the case of the EU, for example a total of EUR 20 billion of investment was received from China in 2015, rising 77% to EUR 35 billion by 2016 (Hanemann & Huotari, 2017). China's MNEs are investing particularly heavily in high technology sectors such as industrial machinery and equipment, ICT, utilities, transport and infrastructure and renewable energy (Hanemann & Huotari, 2017). Use is being made of this investment to access supply chains, highly-regarded brand names and advanced technology in Europe, mirroring the Chinese government-led economic move towards higher value added industries such as technology and services (Seaman et al., 2017). The choice of preferred host countries for Chinese OFDI in Europe – UK 23%; Germany 19%; Italy 13% and France 11% between 2000 and 2016- also signifies its corporate investors' prioritisation of investments in technology, know-how, brands and R&D (Seaman et al., 2017).

The ownership structure of China's leading overseas investors is not completely homogeneous, although SOEs continue to play a major role in the country's OFDI. Whilst privately owned businesses are becoming increasingly prominent, SOEs nonetheless continue to provide most of Chinese FDI to the EU, rising from 62% in 2014 to 70% in 2015 (Hanemann & Huotari, 2016). In the case of the US, however the situation is markedly different. In the period between 2009 and 2013 Chinese OFDI to this destination was undertaken largely by SOEs, amounting to over 65% of cumulative Chinese OFDI by value. In more recent years, however privately owned investment has taken the lead, reflected in a fall in the share of Chinese SOE direct investment in the US to only 35% in cumulative terms by the end of 2015 (Hanemann et al., 2017).

2.5. Strategies for host country entry and technology transfer.

Existing cross-border researchers have created a developing understanding as to how emerging economy MNEs, including those from China, utilise overseas development to seek new strategic assets and related competitive advantage. China's MNEs typically make use of wholly owned subsidiaries, created through M&As and 'greenfield' projects when carrying out OFDI in advanced economy countries (Clegg & Voss, 2012; Hanemann & Rosen, 2012; Hanemann et al., 2017; Klossek et al., 2012; Liu & Zou, 2008; Rhodium Group, 2017).

Country-level research conducted in Germany and the UK indicates that Chinese MNEs have historically preferred greenfield investment for entry mode purposes (Burghart & Rossi, 2009; Klossek et al., 2012). However, more recent findings using aggregate data reveal that M&As are now more commonplace for China's direct investors in both the EU (Clegg & Voss, 2012; Hanemann & Rosen, 2012; Rhodium Group, 2017) and US (Hanemann et al., 2017). Value and project numbers data gathered from Chinese OFDI in the EU between 2015 and 2016 show that Chinese-led M&As outnumbered greenfield projects during these years (Rhodium Group, 2017). Recent, well-publicised acquisitions in Europe and the US have raised the profile of Chinese OFDI by the M&A pathway. In the case of the EU, for example a Tencent-led group of companies purchased Finnish gaming company Supercell, while Midea acquired a German robotics company KUKA, and Ctrip took ownership of UK travel platform Skyscanner (Hanemann & Huotari, 2017). Similarly in the US, China's Haier took over GE's home appliances unit, while Wanda acquired Legendary Pictures (Deng et al., 2017). In spite of this proliferation of acquisitions, however greenfield projects still play a prominent role in Chinese OFDI flows into advanced economy countries. Whilst we now have some appreciation of the entry modes employed by China's MNEs when undertaking OFDI in the EU, there is still a dearth of evidence relating expressly to the distinctive entry modes used by its SOEs.

International joint venture arrangements also provide a viable route for technology transfer from foreign to Chinese-owned companies (Inkpen & Dinur 1998; Park et al., 2009; Tsang, 2002). But technological advancement by this alternative method may be impeded by deep-seated differences in strategic interests (Zhao et al., 2005). Foreign-owned MNEs are frequently averse to sharing their key technologies with joint venture partners from China, fearing that this could lead to a loss of competitive advantage (Altenburg, 2000; Wong et al., 2003). Chinese partners are themselves more likely to focus around the simpler, end stages of the research and development process involving the localisation or adaptation of existing designs, whereas foreign-owned MNEs often carry out the more important early and middle stages comprising design and engineering. Their Chinese partners may therefore only be given limited access to key R&D processes, thus restricting the extent of technology transfer. The sharing of technology may also be limited by means of selective disclosure and the ring-fencing of transfer mechanisms by foreign-owned MNEs (Wong et al., 2003; Young & Lan 1997), diminishing the chances of upgrading by Chinese partners.

The major elements that impact upon Chinese MNEs' entry mode decisions have already been explored in the internationalisation literature. Researchers have found that a variety of factors, such as strategic commitment, in-house resources, industry conditions, institutional forces, transactional and firm-specific conditions (Cui et al., 2011; Wu et al., 2012) exert an influence entry mode decisions. Notwithstanding the multiplicity of internal and external triggers identified by existing studies, there would appear to be a heightened emphasis on strategic intent, indicating the presence of a link between Chinese MNEs' overall strategies and the entry mode choices that they make.

One initial study provides support for this point by contending that Chinese MNEs seeking strategic assets including foreign technology, R&D skills and reputable brands may be expected to favour acquisitions, while others seeking to localise products and raise brand

awareness tend most typically to establish subsidiaries by greenfield investments in foreign countries (Child & Rodrigues, 2005). Later studies have shown that China's MNEs commonly undertake M&A in order to acquire strategic assets (Deng, 2009; Deng et al., 2017) ranging from technology, R&D, human capital, brands and buyer-supplier networks to management expertise (Luo & Tung, 2007; Stucchi, 2012; Wu et al., 2012). It remains possible, however that Chinese MNEs may be making use of other entry modes such as greenfield projects in order to gain access to strategic assets in advanced economy countries.

Whilst it is known that Chinese investors have been setting up wholly owned subsidiaries by means of M&As in order to get hold of strategic assets in Europe and the US, it is unclear how this is taking place. Zheng et al. (2016) have attempted to study the mechanisms involved, but their research has two methodological limitations. Firstly, it concentrates on Chinese M&As only, failing to take greenfield OFDI into account. Secondly, its conclusions are derived from a number of European countries including the UK, yet it does not provide a complete understanding of the different routes by which Chinese investors are utilising their UK subsidiaries to acquire access to technology as a key strategic asset.

3. RESEARCH METHODOLOGY

This paper's overall aim is to contribute to academic knowledge and understanding by examining the investment behaviours of technologically-intensive Chinese SOEs in the UK, with specific reference to their motives for UK location, entry modes and strategies for accessing technology. This paper seeks to answer two main research questions:

- i) Why are technologically-intensive Chinese SOEs investing directly in the UK?
- ii) How are they using investment strategies to enter the UK and gain access to technology?

Answers to these questions have been sought using an exploratory methodology, reflecting the relative lack of pre-existing research (Silverman, 2013) into these topics, since Chinese OFDI is still a comparatively new phenomenon (Peng, 2012). Whilst China's direct investment into Europe has been growing rapidly, the numbers remain low; during 2011 for example, Chinese MNEs only provided 0.03% of total inward foreign direct investment (IFDI) by value into Europe (Clegg & Voss, 2012). Whilst China's SOEs account for 70% of this total (Hanemann & Huotari, 2016), the population in question is still relatively limited, precluding the carrying out of a large scale survey, as a result of severe limitations on feasible sample size.

Use was thus made of an interpretive, inductive methodology for our research, enabling us to conduct an in-depth study (Robson, 2002; Yin, 2014) of SOEs from China engaged in investing directly in the UK. This methodology enabled us to develop a richer understanding (Eisenhardt & Graebner, 2007) of the determinants of their UK investment and associated investment strategies than would have been achievable by following a positivist, deductive route. A multiple case study strategy was also selected, since this offered an especially productive way of examining the emergent phenomena under consideration (Birkinshaw et al., 2011), characterised by a lack of existing knowledge (Collis & Hussey, 2003). We were thus more able to capture the complexity (Stake, 1995) of respondents' thinking and their strategic decision making.

Use was made of non-probability sampling methods in order to identify potential respondents, creating methodological limitations which we believe were however offset by the richness of the data that were gathered (Silverman, 2013).

Our selection of sample cases was based on a number of criteria:

- a) It was, firstly considered important that all of the sample companies were state-owned, reflecting the parameters of our research.
- b) These companies had, secondly to be technology-intensive, making them more likely to take part in technology transfer.
- c) They must, thirdly have carried out FDI in the UK comparatively recently, from 2008 onwards.

These companies were also taken from the widest possible range of industries, to facilitate bias avoidance.

3.1 Data Collection

Owing to the lack of a published database of Chinese investors in the UK, a list of eligible companies was created using a specialist published source on Chinese investment in the UK (China-Britain Business Council, 2010). Each of these companies was then contacted by telephone and email, enabling four to be selected for interview from the automotive, manufacturing and semiconductor industries.

Insert Table 1

Respondents were selected with the agreement with senior management in each company based on their knowledge, understanding and experience (Mason, 2002) of the UK investment process. They consisted principally of senior managers, comprising general managers and specialists in areas such as R&D, Engineering and Finance, but also included some senior employees such as engineers and R&D coordinators. It proved feasible in the three M&A cases to interview respondents in both acquiring and acquired companies, enabling views from both sides of the investment story to be considered. In the greenfield project case, however data was gathered only from a senior executive in the investing company. Responses were also received from a number of external organisations including UK Trade and

Investment and specialised engineering consultancies experienced in working with Chinese SOEs, which were therefore well-positioned to provide impartial views.

3.2. Interviews

Once our first contacts with companies had been established, allowing the aims of the study to be outlined and agreed, fifteen face-to-face interviews were arranged. These were semi-structured, facilitating structured discussions which offered scope for follow-up questions (Rubin & Rubin, 2012), during which respondents were able to express their understanding and opinions (Kuivalainen & Stoyanova, 2012). Each interview lasted for approximately one hour, being held at each company's UK premises. All respondents were capable English speakers therefore all of the interviews were carried out in English. Most were recorded, with notes being taken by agreement where recording was not permitted. The transcription of the interviews and the editing of the related notes was followed by their return to each company for verification and comment. Interview data were augmented by a range of secondary data gathered from companies' websites, annual reports, internal communication and media reports (Yin, 2014).

Following a multiple case study strategy allowed us to make use of replication logic, with each case being observed as a different experiment with the ability to confirm or not confirm our findings (Eisenhardt & Graebner, 2007; Yin, 2014). The use of this analytical technique increased the likelihood that the findings that we accumulated were more robust, compared to those derivable from a single case study.

The problems involved in generalising findings has been the most widely criticised feature of case study research (Silverman, 2013). On the other hand case studies were not designed with this aim in mind, possessing instead an exemplary function (Thomas, 2011), with their rationale being based on particularisation rather than generalisation (Stake, 1995). In terms of

our study, the intention was to gain a detailed understanding of the thinking of managers drawn from a specific, small group of companies, in a particular context. We did not seek to draw conclusions which were generalisable to the entire population of Chinese MNEs involved in FDI in the UK.

The possibility of encountering potential problems relating to interviewee subjectivity (Gillham, 2000; Roulston et al., 2003) was minimised by including respondents from Chinese MNEs and the UK companies that they owned, in addition to representatives of independent organisations with experience of working with the former companies. The risk of interviewee subjectivity was also reduced by including respondents with a range of roles and responsibilities in our case study interviews. Findings from each case were also triangulated with those from other cases during the cross-case analysis stage of our research.

Verifiability and reliability were guaranteed by triangulating interviews with case study companies C1, C2, C3 and C4 with interviews from consultancies, government and an industry expert, using the letter O for outsiders O5, O6, O7 and O8. There were six external respondents spread between four independent organisations as Table 2 shows. Two of these organisations constituted engineering consultancies, while one was a government department and the other was a communications organisation specialised in engineering. The responses provided by interviews with these organisations were triangulated according to the themes that emerged from our case study interviews.

Insert Table 2

4. FINDINGS

Following the development of a detailed understanding of each case, cross-case analysis was carried out. The themes that were found within each case were subsequently examined across all four cases and in relation to the pre-existing literature. Use was made of an inductive approach (Eisenhardt, 1989) to synthesise the verified interview and secondary data (Yin, 2009). The combined data that resulted were then coded and grouped into the themes and aggregate dimensions illustrated in Figure 1 (Gioia et al., 2012)

Insert Figure 1

State influence is evident at the strategic level across UK subsidiaries. Typically, we would expect to see this replicated at the operational level. However, at operational level most subsidiaries have an uncharacteristic approach whereby parent company influence is minimal. Few changes are made to existing management structures and acquired subsidiaries are left to operate as before. Only one company has the typical management style where the parent company has a high degree of operational influence over its UK subsidiary. This shows that Chinese SOEs have an adaptable mindset in their international activities.

To do this they invest in UK subsidiaries to gain existing technology but more importantly the ability to generate new technology. The new subsidiaries are important centres for technology creation and are embedded in their parent companies' global R&D networks. There has been a high level of investment in these subsidiaries and there appears to be no motivation for relocation to China at present. These developments highlight a new network structure of SOEs – the global R&D networks which have moved on from early implications of Chinese investment.

4.1. Why are technology-intensive Chinese SOEs investing directly in the UK?

The findings indicate that the main driving force behind our sample companies' investment decisions appears to be their inherent ambitions and visions, as evidenced by the following quotations:

We plan to become a world leading automotive company (SM11). We would be able to become a leader in technology (SM21). The management has a long-term vision (SM31). Become one of the biggest automotive players in the world (SM41).

The companies that took part in our interviews possess ambitious long-term goals of becoming global leaders within the context of their respective sectors. But before challenging global rivals, they will first have to close the technological gap that exists between them.

We realise we are currently not world class (SM11). The technology is dated and relatively low level (SM31). Didn't have the technology or the expertise to develop the products (SM43).

Following from the above quotations, it is apparent that the technology owned by our case study companies lags behind the best international standards. This technology gap can be explained mainly by the lack of experience and know-how which is restricting their new technology development and their innovative activity. This can be attributed not to any lack of potential or technical ability on their part, but to their lack of the practical experience needed for technological development.

The findings indicate that one of the methods which our companies are using in their attempts to reduce this gap is direct investment in the UK. Their main aim here is to access and develop new technology, know-how, skills and experience enabling them to generate their own intellectual property. A secondary aim is to enhance their R&D capabilities, resulting in potential new product development in partnership with their new UK subsidiaries.

4.2. Investment strategies to enter the UK and gain access to technology

4.2.1. *Greenfield investment projects – a One-Stage Model of access to local labour*

The findings show that company C1, which undertook a greenfield investment project in the UK, followed a similar approach to technology transfer to companies C2, C3 and C4, each of which employed M&As for this purpose. The former's technology access strategy comprises only one stage, as identified in Figure 2 below.

Insert Figure 2

It appears that the aim of this company's investment is to develop new technology in the UK by leveraging the knowledge, skills and experience of its local workforce. Its new, greenfield UK subsidiary is staffed predominantly by local employees, possessing superior R&D capabilities. This subsidiary also acts as a platform for the creation of external partnerships with other local organisations such as privately owned companies, research organisations and universities enjoying their own, specialised types of expertise. Therefore although operational differences exist between M&A and greenfield projects, the strategies that are being used to access technology appear to be remarkably alike in both cases.

We recognise the skills are there; we are aware of the legacy of the automotive industry and are particularly interested in powertrain expertise; most of the staff are locally recruited and are involved directly in R&D; we work with private companies such as Ricardo, Mahle, Mira and universities such as Birmingham, Nottingham and Loughborough. (SM11)

4.2.2. M&A investment projects – a Two-Stage Model of technology and labour access

The findings indicate that those Chinese SOEs that enter the UK by the M&A route would appear to be utilising two-stage post-investment strategies to gain technology access and increase their R&D capabilities (see Figure 3):

Insert Figure 3

In the first stage, they would seem to be using their investments to acquire existing technology from acquired companies. This then allows them to launch new products rapidly, without the need for investment in R&D resources, enabling them to achieve technological catch up over a short timescale. For example, companies C2 and C3 began selling products originating from the acquired company in China soon after the takeover with no adjustments needing to be made. No new technologies were needed as a means to this end since these products were new to the Chinese market. Although company C4 made small adjustments to existing products before launching them in China, they too used technology developed by the acquired company.

Later on, during the second stage, the SOEs appear to be going on to build on their new subsidiaries' existing technology, making use of their R&D capabilities to deliver further technological advances. Use is now made of their target companies' in addition to their own technological knowledge, skills and employee experience with this end in mind. The SOEs also use their UK subsidiaries as a platform for external collaboration with local universities and specialist consultancies, enabling them to develop leading edge technologies by gaining access to a broader pool of expertise located outside their organisational boundaries. In combination, these strategies can facilitate achievement of their technological ambitions allowing them to develop their long-term competitiveness in international markets.

5. DISCUSSION

5.1. Chinese SOEs are investing directly in the UK as part of their State Policies

Our case study findings suggest that many of China's technology – intensive SOEs may be seeking to acquire global leadership in their respective sectors, and that they view investing in

the UK as a partial means to this end. Their ambitions are partly innate, resulting from their leaders' entrepreneurial insight and business vision (Alon et al., 2014), and these companies' profit-seeking behaviour (Jones & Zou, 2017). Their investments are, in this respect driven by the same motives as any other business organisation, irrespective of ownership or country of origin. Conversely, one issue that makes Chinese SOEs distinctive is that their strategic aims are shaped by government policy.

China's latest Five-Year Plan, together with its "Made in China 2025" and "Belt and Road" policies articulates the perceived need for continuing national economic development underpinned by innovation and overseas investment. The investment activities carried out on the part of Chinese SOEs in the UK can thus be viewed in part as a manifestation of these state policies.

Following on from our findings, we would argue that our Chinese SOEs are seeking to close the technology gap between themselves and their leading international competitors. With this in mind, they have all invested in the UK in order to acquire technology, know-how, skills and experience unavailable to them at home. From a theoretical point of view, this finding is consistent with the exploration argument which states that firms from emerging economies invest abroad in order to acquire competitive advantage (Deng, 2007; Luo & Tung, 2007; Mathews, 2006). Our results therefore counter the traditional view that internationalising companies must already possess firm-specific or ownership-specific advantages before they will be able to develop into fully fledged MNEs (Dunning, 1993; Rugman, 2007).

From an empirical point of view, the results of our research contribute towards developing our understanding of Chinese investment in advanced economies, especially in Europe. The prevailing view is that Chinese MNEs locate investment in these economies as a means of accessing strategic assets that enhance their competitive edge (Deng, 2007), such as advanced

knowledge, technology and brands (Child & Rodrigues, 2005; Rugman, 2007). Recent evidence from Europe suggests that there is now a particularly strong Chinese interest in investing in its high technology sectors (Hanemann & Huotari, 2017) but there has been no specific evidence relating to Chinese investment in the UK's high-technology firms until now.

Our findings therefore add to scholarly knowledge and understanding of Chinese investment activities in Europe by providing a new empirical insight into the UK context. They suggest that our Chinese SOEs are seeking to leverage their UK investments with a view to acquiring local technology, know-how, skills and experience embedded in local organisations, in order to help reduce their technology gaps. Their reasons for investing in the UK would thus seem to be no different from those of other Chinese firms that invest in the EU countries.

5.2. Distinct Stage Models of Investment strategies in the UK

Existing studies (Clegg & Voss, 2012; Klossek et al., 2012; Rhodium Group, 2017) show that MNEs from China are more likely to set up wholly-owned subsidiaries by means of M&As or greenfield projects, in order to invest in advanced economies such as those in Europe.

Nevertheless, there has been a dearth of empirical evidence with regard to the direct investment strategies carried out by China's SOEs in the UK. The findings presented here indicate that Chinese SOEs would seem to prefer M&A and greenfield strategies for their UK investments, echoing the strategies that they pursue when investing in the EU.

Recent literature suggests that a link exists between the motives for MNEs' OFDI and their choice of entry mode. Empirical evidence regarding Chinese MNEs (Deng, 2009; Deng et al., 2017; Wu et al., 2012), shows that they tend to employ M&As rather than greenfield investments in order to access foreign strategic assets. In contrast, our findings indicate that

Chinese SOEs may be more open-minded, in the UK at least, being prepared to utilise both M&As and greenfield investment when seeking to access strategic assets.

Contemporary researchers have provided insights into the routes whereby Chinese MNEs access strategic assets internationally (Kale et al., 2009; Kumar, 2009; Zheng et al., 2016) yet our current understanding remains limited. This study's findings contribute to the further development of our understanding referring particularly to Chinese SOEs in the UK setting. Focusing firstly on the case of greenfield projects, they may decide to move directly to the knowledge creation stage. This finding shows that they are employing access strategies based not only on securing existing assets but also on the creation of new ones.

Turning secondly to the M&A route, our findings show that China's SOEs would seem to be accessing strategic assets by means of a two stage process. In the first stage, they are gaining access to their new subsidiaries' existing technology, while, in the second, they are directly involved in the creation of technology.

This finding is important in theoretical terms. Following an exploration perspective, it is clearly apparent that our sample companies decided to enter the UK in order to access strategic assets, as the existing literature argues (Deng, 2009; Luo & Tung, 2007; Mathews, 2006). Our research moves beyond the early stages of OFDI of Chinese SOEs and we are now able to draw attention to the strategic investment decisions as stage models and also to a Global R&D network integration focus with an adaptable mindset on the part of their managers. Their management styles have developed beyond the initial possibilities in that respect.

It might therefore be desirable for future researchers to extend the theory of direct investment by focusing on new models of dynamic Global R&D integration. The evidence that we provide indicates, notably that companies involved in acquisitions moved from an early focus

on assimilating existing technology, to a later focus on the creation of knowledge, which was subsequently retained and integrated into a wider global network of R&D activities over several stages dependent on the type of investments undertaken.

Limitations of the study and implications for further research

Our study has limitations. First, taking into account the challenges associated with accessing Chinese SOEs we consider ourselves fortunate to have been granted access to four technologically-intensive case study firms. The decision to focus on these firms enabled us to develop a deep and complex understanding of the investment behaviour of these MNEs. Our findings are not designed to serve as a basis for generalisation but to provide in-depth insights into the behaviour of Chinese MNEs in the specific UK context. To make generalisation possible, future researchers will need to gear their research design towards quantitative analysis. They could also explore the applicability of our findings to other advanced countries and industries, asking whether Chinese SOEs behave similarly or differently in these contexts.

Second, longitudinal methods could be used to find out whether and how Chinese SOEs' investment behaviours evolve over time, the fine-tuning of management practices that may be needed to maximise the benefits of technology acquisition, and the extent to which this can lead to better MNE performance. It would also be potentially valuable for future researchers to investigate the changing role that foreign subsidiaries play in Chinese-led global R&D networks.

6. CONCLUSIONS

Drawing on a multiple case study approach for gathering interpretive data from four technology-intensive SOEs from China, this paper has found that they can be motivated to undertake direct investment in the UK by a range of external and internal factors. China's national industrial policy can play a central part in encouraging these SOEs to venture abroad, although these companies' vision and ambition to achieve global leadership may also provide strong internal drivers. Our Chinese MNEs would seem also to be motivated to enter the UK by a drive to acquire new and more advanced strategic assets, technology and know-how. Their aim subsequently appears to be to leverage these strategic assets as a means of developing their international competitiveness, in pursuit of their global competitive ambitions.

Our study emphasises that there has been a shift in the strategic approach of Chinese SOEs and their OFDI in industrialised countries:

- 1) Challenge the Status Quo: These SOEs intend to challenge the status quo by their ambition to become world leaders, identifying a technology gap and tapping into technology acquisition by using skills, technology and personal networks.
- 2) Global R&D Network Integration: Their first step was using existing technology, developing new technology and setting up permanent residence in the UK to achieve global integrated networks. For now, what we can say is that their UK R&D centres are working closely with their counterparts in China in well-integrated global R&D networks. As long as their UK R&D centres keep themselves at the forefront of technology, the motivation to shift R&D eastwards will be weak.
- 3) Adaptable Mindset: Government influence at strategy level and divergent management practices are leading to an adaptable mindset for Chinese SOEs. This indicates that there can

be more management styles possible than the usual top-down style, through adaptation to different management practices.

Empirical Implications

In the first instance, our findings make an empirical contribution towards the development of scholarly knowledge and understanding of the reasons for investment in the UK by Chinese technology-intensive SOEs, together with the investment drivers and strategies that underpin their commitment to this location. As regards entry strategies, the findings reveal that Chinese strategic asset-seeking SOEs' investments are not restricted to M&As alone, because they may also institute greenfield projects with a view to accessing technology and knowledge. Furthermore, they also indicate that Chinese MNEs are utilising both M&As and greenfield projects to gain access to the advanced technology possessed by UK companies. Their acquisitions would seem to follow a two-stage process, beginning with an initial focus on acquiring existing technologies held by their new subsidiaries that they can use to launch new products following takeover. In the second stage, the focus appears to move to the creation of additional R&D capacity and the generation of new technologies, based on the use of advanced, subsidiary-based knowledge developed in conjunction with other external organisations' expertise. SOEs that invest in the UK via greenfield projects would also appear to be accessing UK companies' technology in a similar manner.

Theoretical Implications

In the second instance, the findings that we have taken from our study have theoretical implications. They would seem to bring the view that emerging market multinationals need to

have conventional firm-specific advantages as a precondition for internationalisation into question. Our findings offer new support for the contention that technology-intensive companies may carry out OFDI with a view to acquiring strategic assets that are in scarce supply at home. Based on this premise, it can thus perhaps be argued that our Chinese SOEs are exhibiting overseas investment behaviours that are characteristic of emerging economy MNEs. Their seeming interest in technology creation indicates, however, that they are in reality moving beyond accessing existing technologies in the UK, to the creation of new ones. While existing theories stress emerging economy MNEs' access to overseas strategic assets, they do not make reference to this second possibility. We would thus argue (following Child and Rodrigues (2005) that a need now exists for extant theories to be extended, in order to incorporate this new post-investment behaviour.

Policy implications

The Chinese government and MNEs' focus on technology has been perceived and understood by policy-makers in both the EU and US. They share mounting concerns that Chinese SOEs have been able to gain increasing access to advanced technologies resulting in a potential threat to the competitiveness of Western and Japanese MNEs, and eventually to the predominant role exercised by the EU and US in the global economy. EU member states have become increasingly concerned, for example about the recent wave of high technology acquisitions in Germany by Chinese SOEs, and for what these are revealing about the SOEs' investment and technology access strategies (Hanemann & Huatari, 2017). The US has also become particularly uneasy about these SOEs' activities from a national security point of view, taking what is generally considered to be a more cautious and reserved line towards Chinese OFDI than the EU (United States-China Economic and Security Review

Commission, 2017). The Committee on Foreign Investment in the United States is thus now actively monitoring investment from China (Hanemann et al., 2017) whilst the EU is considering taking comparable actions in future.

In the future, it is clear that policy-makers in all advanced economies will have the demanding task of weighting up the benefits from Chinese OFDI with the potential loss of control over advanced technology that this may entail. They will need to balance the benefits of keeping the door open to Chinese investment, in the spirit of economic liberalism, whilst moderating the associated loss of control over leading technologies and know-how.

The changing political environment in Europe following Brexit might have an impact on future Chinese SOE strategies since the door to the EU could be closed to them again.

Nevertheless, China as a country with a growing segment of middle class consumers will become increasingly attractive as a future consumer market while the emergence of globally integrated R&D networks will not only benefit China, but also those who are now recipients of OFDIs.

It is problematic to foresee exactly how Brexit may impact potential investors from China because the future economic relationship between the European Union and the UK is uncertain and constantly evolving. Questions surrounding Single Market access and regulatory alignment will certainly be at the forefront of potential UK investors' minds. If the UK loses access to the Single Market this may deter market-seeking investors as the country may not be a large enough market to warrant direct investment. However, for technology-seeking investors, who are primarily focused on the Chinese and non-European markets and are using the UK as an R&D base, access to the Single Market access may not matter quite so much. On the question of regulatory divergence, if the UK decides to go down the deregulation route, this may make the UK a more attractive investment environment for some

investors. Nevertheless, it is difficult to see how this would compensate for the loss of Single Market access for Chinese and other overseas investors.

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TABLES AND FIGURES

Table 1. Case study profiles – Greenfield and M&As

Company	C1	C2	C3	C4
Industry	Automotive	Semiconductors	Manufacturing	Automotive
Ownership	State	State	State	State
Investment year UK	2010	2008	2010	2008
Entry mode UK	Greenfield	Acquisition	Acquisition	Acquisition
No. of employees (2016)	50,000	7,569	11,217	171,395
Profit RMB '000 (2016)	139,637	1,225,189	506,199	29,793,790
Respondents:	1	5	3	7
Senior Managers SM Code	1 SM11	2 SM21; SM22	3 SM31; SM32; SM33	7 SM41; SM42; SM43; SM44; SM45 SM46; SM47
Senior Employees SE Code	0	3 SE21; SE22; SE23	0	0

Table 2: Respondents

	SOEs in the UK				External Respondents			
	C1	C2	C3	C4	O5	O6	O7	O8
Executive Level	Vice General Manager (SM11)	Director of R&D (SM21)	General Manager (SM31)	Head of Vehicle Programmes (SM41)	Group Sales Director (SM51)	Engineering Director (SM61)	Automotive industry expert (SE71)	Technology specialist (SE81)
Senior Manager Level		Assistant Director of Assembly Workshop (SM22)	Engineering Manager (SM32)	Director of Business Development (SM42)		Sales and Marketing Manager (SM62)		
Head Middle Manager			Head of import/export (SM33)	Head of Powertrain Integration (SM43) Head of Chassis Engineering (SM44) Head of IT and Quality (SM45) Head of Vehicle Trim Engineering (SM46) Head of Finance (SM47)		Principal Project Manager (SM63)		
Senior Employee		Chief Engineer (SE21) Design Engineer (SE22) R&D Coordinator (SE23)						

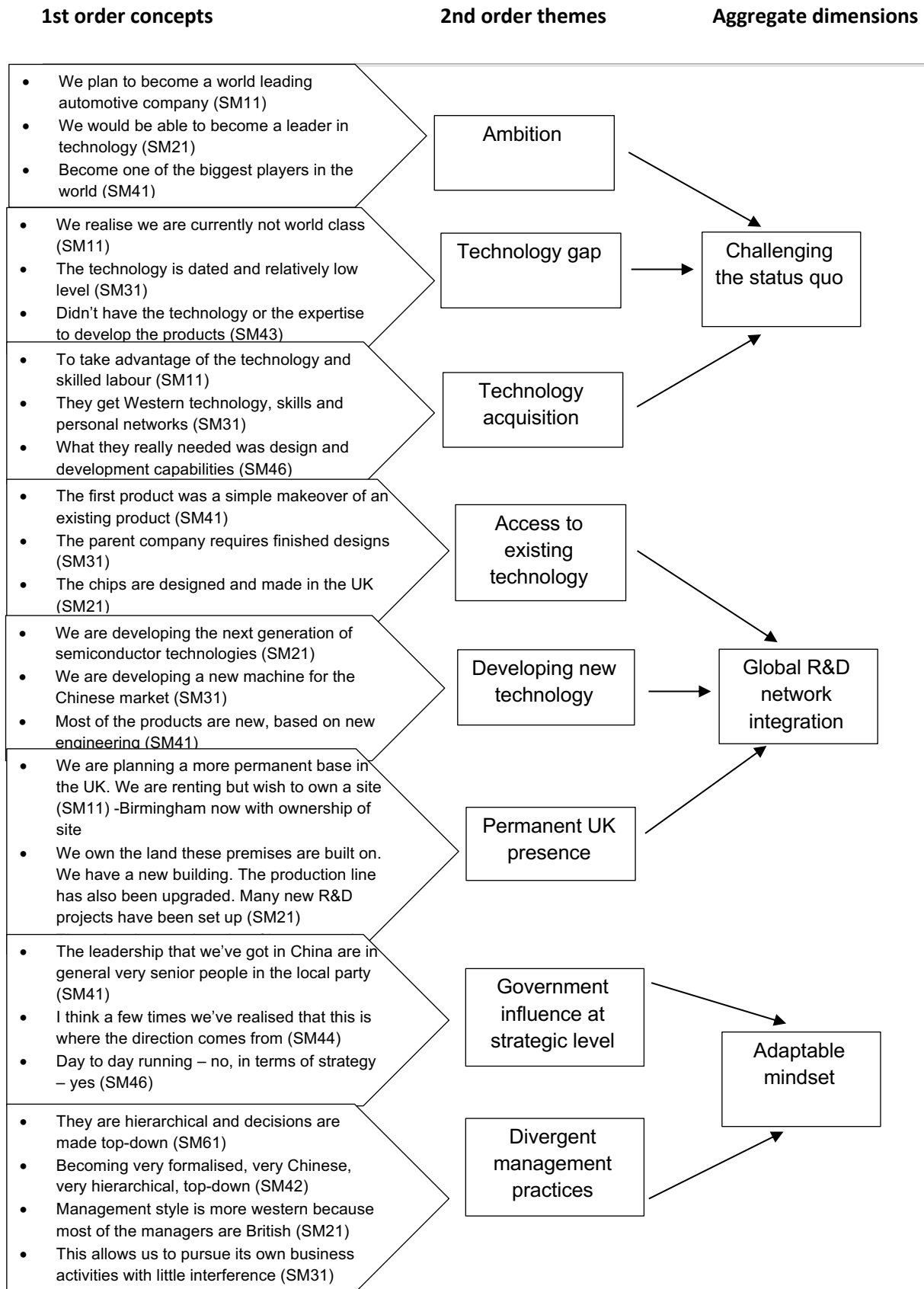


Figure 1: Three level data analysis

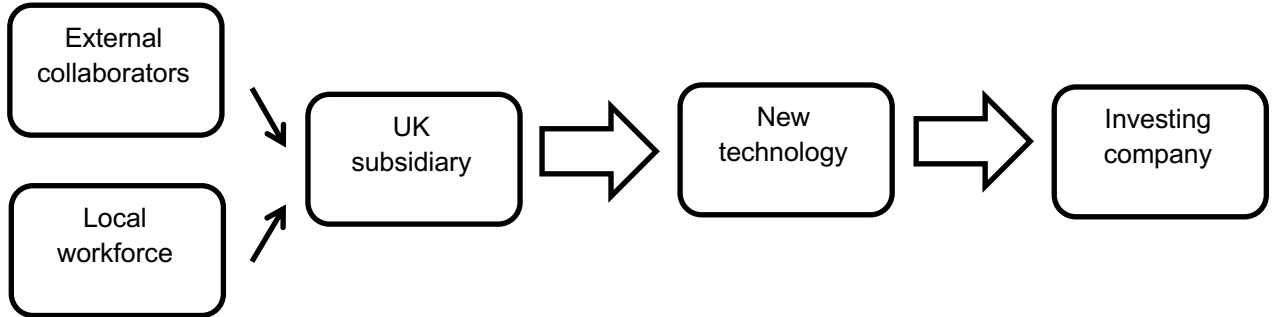
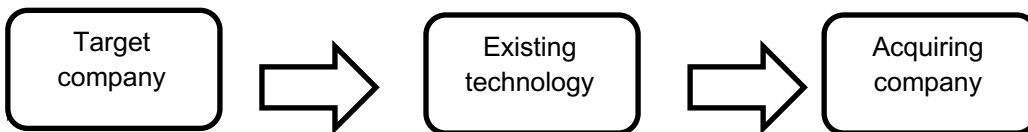


Figure 2: Greenfield project technology access and creation

Stage 1: Accessing existing technology



Stage 2: Developing new technology

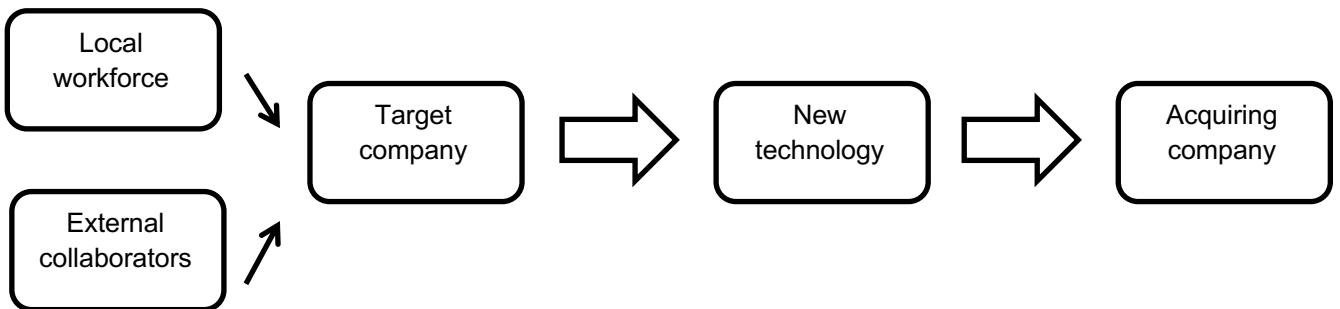


Figure 3: M&A-related technology access strategies