

The Strategic Nexus of Offshoring and Outsourcing Decisions

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ABSTRACT One important effect of the increasing integration of the world economy is the rising importance of possibilities to offshore and outsource value-creating activities. In many industries, firms are able to disaggregate their value chains into smaller parts. This process allows for a less path-dependent approach to the firm's ideal location profile (through offshoring and relocation) and control strategies (through outsourcing). This article argues that optimal decisions regarding individual processes recognize the linkages of these processes with the firm's entire value chain. The article explores the magnitude, sequence, and dynamics of interdependent decisions regarding the location and control of various parts of the value chain. By using case illustrations from the mobile handset and financial services industries, this article provides a novel perspective on the disintegration, mobility, and reintegration of value chain activities in a global context.

INTRODUCTION

Offshoring is one of the most hotly debated topics in international business. It is loosely defined in the popular press as the 'relocation of business processes to foreign countries to take advantage of a supply of skilled but relatively cheap labour'.^[1] In recent academic literature, offshoring has been defined as 'the transnational relocation or dispersion of . . . activities' (Doh et al., 2009). However, the term has also been used to refer to a multitude of different control situations, ranging from international sourcing and purchasing (Kotabe, 1990) to the operation of wholly owned, offshore re-export platforms (Nachum and Zaheer, 2005). One stream of academic literature shares the popular perspective that the primary objective of offshoring is cost minimization through the relocation of business processes to low-wage locations (Bock, 2008; Farrell, 2005; Grote and Täube, 2007). Another stream of literature views offshoring as a more general location strategy that incorporates cost minimization and knowledge seeking (Demirbag and Glaister, 2010; Kedia and Lahiri, 2007; Lewin et al., 2009; Maskell et al., 2007).

In this paper, we argue that offshoring decisions are closely linked to outsourcing strategies, which are concerned with finding the optimal level of control for the firm's

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activities. This paper is not so much about decisions on the location and ownership of individual activities, but about competing business models in which offshoring and outsourcing are strategies used to orchestrate the firm's overall value chain. Furthermore, we stress the importance of control rather than ownership, a distinction we view as crucial given recent literature on economic property rights (Foss and Foss, 2005).

Using transaction cost theory (Coase, 1937; Williamson, 1975), we argue that the firm disaggregates the value proposition and selects the components over which to maintain control. One implication of this analysis is that the firm should retain control over the components or processes that enable it to create and appropriate the most value. Conversely, operations through which the firm can create and appropriate less value should be outsourced (Ricketts, 2002).^[2] Buckley and Casson's (1976) seminal work applies this reasoning to the geographical context, providing a theoretical rationale for the existence and organization of multinational enterprises (MNEs). The logic of transaction cost analysis pushes some firms towards a high level of control over resources and the concentration of these resources on specific process components, while they have a strong tendency to outsource other components (Calantone and Stanko, 2007; Piachaud, 2005). Other firms tend to exercise greater control over the entire value chain and have much less outsourcing. In the terminology of industrial organization, these strategies correspond to greater and lesser degrees of vertical integration.^[3]

Offshoring and outsourcing are best analysed as aspects of the global disaggregation of the value chain and as attempts by firms to combine the *comparative advantages* of geographic locations with their own resources and competencies to maximize their *competitive advantage*. The interplay of comparative and competitive advantages determines the optimal location of value chain components (offshoring decisions) as well as the boundaries of the firm and the control strategy (outsourcing decisions).

Despite the robust body of literature dealing with outsourcing and the growing literature on offshoring, the two seldom intersect. The lack of research on the interdependencies of geography and control is surprising, considering that firms operating in international markets face these decisions simultaneously (Dunning, 1996). Making these decisions independent of each other leads to tactical sub-goal optimization. The strategic integration of these decisions can result in significant firm-level performance improvements (Banker et al., 1984). Most of the offshoring literature takes control decisions as a given. Similarly, the mainstream literature on outsourcing usually fails to explore the location decision. This article therefore focuses on the interdependency of offshoring and outsourcing decisions. We study the magnitude, sequence, and dynamics of the interdependent decisions regarding control and location of the various parts of the value chain, as captured in three separate but related research questions.

The first research question concerns the *magnitude* of value-chain disaggregation. In other words, to what extent does it make economic sense to 'fine slice' value chain activities, to delegate them to third parties, and/or to undertake them in cost-effective or knowledge-enhancing (often remote) locations? We are particularly interested in the types of activities that are often the subject of location mobility and/or changed control structure.

The second research question focuses on the *sequence* of offshoring and outsourcing decisions. What comes first? Should one dimension dominate the other? What are the

factors that determine the sequence of decision making? The influential work by management scholars on the core competence of the corporation (Hamel and Prahalad, 1990) triggered a thought process in many organizations regarding the activities that should be kept inside the firm and those that should be undertaken by external partners, a process that resulted in an outsourcing wave. At that time, offshoring was a less dominant theme in the management literature, as globalization was not as advanced as it is today. As a result, most academic work on the link between outsourcing and offshoring assumes that decisions on the boundaries of the firm precede decisions on where to locate certain activities (Graf and Mudambi, 2005; Hätonen and Eriksson, 2009). We take issue with this position, arguing that optimal sequence of outsourcing and offshoring decisions depends on which one is more closely related to the firm's strategic objectives.

The third research question examined in this article concerns the *dynamics* of offshoring and outsourcing decisions. Firms attempt to maximize their value creation potential. However, the distribution of value creation among individual value chain activities is not static. Value creation 'travels' in terms of location and control. As a result, firms need to frequently re-evaluate and adapt their offshoring and outsourcing decisions. Captive offshoring may not pay in the long run if markets are too dynamic. Offshore outsourcing models may not be beneficial in the long run if too much value creation potential is delegated to a supplier (Grimpe and Kaiser, 2010). In other words, '... the specialization implied by the large-scale outsourcing of knowledge-intensive activities could "hollow out" the competencies of the sourcing firm' (Kotabe and Mudambi, 2009, p. 122).

The literature on international strategy has helped us understand that the optimal MNE strategy achieves cost as well as differentiation advantages by leveraging the diverse capabilities of constituent subsidiaries (Mudambi and Navarra, 2004; Nohria and Ghoshal, 1994). Combining our three research questions, we contend that an integrated analysis of outsourcing and offshoring leads to the insight that subsidiaries are not monolithic entities, but units that control sets of activities. Optimal MNE strategy is increasingly composed of control and location decisions implemented at the *activity* level, rather than the subsidiary level.

The paper is organized as follows: the next section reviews theory regarding the magnitude, sequence, and dynamics of offshoring and outsourcing decisions. The third section further explores those concepts within the context of two industries: a manufacturing industry (the mobile handset industry) and a service industry (financial services). A discussion of results and conclusions follows.

MAGNITUDE, SEQUENCE, AND DYNAMICS OF OFFSHORING AND OUTSOURCING DECISIONS

The Magnitude of Offshoring and Outsourcing Decisions

The possibility of making deliberate decisions regarding the location and control of value-creating activities depends on opportunities to isolate single activities. Manufacturing firms started to specialize and outsource activities in the late 1950s but the concept

was only picked up by mainstream academic literature 20 years later (Hätönen and Eriksson, 2009). Initially, most outsourcing was done locally. However, because the globalization of markets and the increased digitalization of value-creating activities have reduced the difficulties associated with managing distant operations, firms have made greater use of captive and offshore outsourcing (Cantwell and Santangelo, 1999).

Transaction cost analysis may be used to understand the potential in fine-slicing, mobilizing, and re-integrating specific value chain activities (Coase, 1937; Williamson, 1975). The firm disaggregates the value proposition of each activity. It should retain control over the components or processes through which it can create and appropriate the most value. Conversely, operations through which the firm can create and appropriate less value should be outsourced. In a geographical context, this reasoning provides a theoretical rationale for the existence and organization of MNEs (Buckley and Casson, 1976) as well as for the link between internationalization and performance (Contractor et al., 2003, 2007). For example, weak local institutions can raise transaction costs, thereby increasing the likelihood that wholly controlled foreign subsidiaries are the best entry mode (Delios et al., 2008).

For some firms, the logic of transaction cost analysis pushes them towards exercising high control over resources and concentrating on specific process components, while they have a prominent tendency to outsource other components (Calantone and Stanko, 2007; Piachaud, 2005). Other firms tend to exercise greater control over the entire value chain and have much less outsourcing. Such differences across firms tend to persist for extended periods of time. Furthermore, firms pursuing different levels of vertical integration often do not differ systematically in terms of performance. The persistence of these differences, along with the lack of a systematic link to firm performance, suggests that such differences are not disequilibrium phenomena. This argument is illustrated by the widely differing levels of vertical integration in many global industries, such as automobiles (Mudambi and Helper, 1998; Rubenstein, 2001), shoes (Pyndt and Pedersen, 2006), and apparel (Smakman, 2003). In this paper, the mobile handset and financial services industries are used to illustrate and analyse the complexities underlying this empirical regularity.

One direct implication of these observations is that transaction costs have significant firm-level components. These give rise to differences among firms within a single industry in terms of the control of activities that underlie the firms' value propositions. Of course, industry-level components can be evident as well. These drive firms in one industry to differ in terms of organization from those in another industry.

Dibiaggio (2007) shows how firms in the semiconductor industry increasingly engage in 'collaborative outsourcing' in the design of application-specific integrated circuits. Information communication technologies paired with the effectiveness of intellectual property rights have amplified the trend towards a disintegration of the value chain. While the semiconductor industry is still dominated by system integrators, specialist firms are gaining market share. Such specialists build their competitive advantage on strong component knowledge. However, outsourcing models that delegate knowledge-intensive activities seem to work only if the partner firms engage in a long-term relationship.

A similar trend can be observed for offshoring activities. The existence of opportunities to disaggregate value-chain activities, together with significant country-level differences in production factors (i.e. comparative advantages), has lead firms to make use of offshoring strategies (Farrell, 2005; Kohler, 2003). The debate on whether the world is flat (Friedman, 2005) or semi-globalized (Ghemawat, 2003; Rugman, 2000) continues. However, in either case, country differences create possibilities for gainful arbitrage. For international companies, arbitrage involves the exploitation of differences between national or regional markets, typically by locating parts of the supply chain in different places.

In the increasingly competitive global arena, firms in all industries are using the geographical dispersion of their value chain activities as a means to create and maintain competitive advantage. The offshoring of value chain activities is the natural outcome of such enhanced competitive pressures. The cost-based advantages of offshoring to emerging markets and developing countries has been recognized in the literature and highlighted in the popular press. However, the leveraging of competence-based advantages by offshoring activities to global centres of excellence, often in advanced market economies, might be a more important aspect of offshoring. While this second form of offshoring has been identified in the academic literature (Doh, 2005; Kedia and Lahiri, 2007; Lewin et al., 2009; Maskell et al., 2007), it has received less attention in the mainstream media.

There is considerable evidence that knowledge plays a key role in the relationships among location, control, and value creation (Mudambi, 2008; Pyndt and Pedersen, 2006; Shin et al., 2009). R&D, or discovery-driven knowledge, generates high value through activities such as research, design, development, and strategic planning, and it is frequently located at the upstream end of the firm's value proposition. Similarly, marketing or user-driven knowledge generates high value-added through activities such as advertising, after-sales support, and market research, and this type of knowledge is commonly found at the downstream end. Components in the middle of the value chain comprise manufacturing, standardized service delivery, and other routine processes in which commercialized prototypes are implemented on a mass scale. Knowledge-intensive activities are often concentrated at the two ends when the value proposition of the individual business firm is disaggregated.

In the firm, these knowledge-intensive activities are crystallized in the form of intangible assets. They typically appear as patents, copyrights, and brands. They can also take the form of superior returns generated by inimitable organizational structures and inter-organizational relationships (Foss, 2003; Winter, 2003). However, they are assets in that they generate a stream of legally defensible future rents. In all cases, the firm controlling the intangible asset is able to generate higher returns, *ceteris paribus*, than a competing firm that does not control the asset. However, the value of intangible assets is less precise and less certain than the value of tangible assets, especially since intangibles are less visible, more embedded, more tacit, and less separable from the rest of the firm (Contractor et al., 2003; Mudambi, 2007, 2008). This inseparability implies that 'their values are not verifiable. In liquidation many intangible assets are likely to have a value of zero' (Holthausen and Watts, 2001, p. 36).

The Sequence of Offshoring and Outsourcing Decisions

To the best of our knowledge, there is little evidence that outsourcing decisions precede offshoring decisions or vice versa. Much of the mainstream literature on the location decisions of MNEs treats the control decisions as a given (Doh et al., 2009; Kotabe, 1990). Similarly, the literature on MNE entry modes typically focuses on ownership rather than control. Furthermore, in the literature, it is usually assumed that a certain market has been chosen, so that the location decision itself is not explored (Brouthers and Hennart, 2007). In fact, these assumptions are contradicted by recent evidence that managers view location as part of the overall process of strategy making (Buckley et al., 2007).

Only a few articles discuss the temporal sequence of outsourcing and offshoring decisions. For example, Graf and Mudambi (2005, p. 254; emphasis added) suggest that:

For each business process, companies *first* decide how to source, that is, whether to manage the business process in-house, or to outsource it. Once the firm decides to outsource a business process, it must select its business partner, and set the terms and nature of this business relationship. The firm must also decide the location of the business process operations. The location and business partner selection decisions are closely related.

Similarly, Hätönen and Eriksson (2009, p. 63) affirm that an outsourcing decision generally precedes an offshoring decision, but acknowledge in a footnote that the two decisions might be parallel and interrelated.

Recent research indicates that practising managers use such multi-dimensional optimization exercises to support their strategic decision making (Buckley et al., 2007). Even so, the data and information requirements for such simultaneous optimization are significant. It is possible to limit the options to be evaluated to a manageable number only when these data requirements are met, for example in consolidated and stable industries. In such cases, simultaneous decisions are often possible and desirable, as they allow firms to identify (and reach) the first-best offshoring/outsourcing choice (Banker et al., 1984).

However, in more fluid situations the data requirements for simultaneous optimization are so enormous that a sequential decision-making approach is likely to be superior. We argue that the optimal sequence is not universal, but depends on the extent to which the firm's strategic objectives are location-bound (Rugman and Verbeke, 2001). When these are not location-bound, as when the MNE leverages in-house knowledge to enter new markets, control is the primary decision (taken first) and the location (offshoring) decision is conditional on and subservient to it. Conversely, when the MNE's objectives are location-bound, as when it enters a technology cluster to access local knowledge (that is not available elsewhere), location becomes the primary decision.

The Dynamics of Offshoring and Outsourcing Decisions

Offshoring and outsourcing decisions are not static. Since firms aim to maximize the value they create for their stakeholders, they need to adapt their location and control

strategies as the market landscape and firm conditions change. We identify two main reasons for adapting offshoring and outsourcing decisions: firm level dynamics and external dynamics stemming from the competitive environment.

Firm level dynamics – spillovers and ‘catch-up’. Firms in advanced market economies have strong incentives to increase the efficiency and effectiveness of the high value creating process components under their control. Modularization enables these firms to lift standardized activities out of the R&D and marketing activities and relocate these activities to emerging market economies. These offshored activities may be wholly owned (captive offshoring) or outsourced (Mudambi, 2008). For instance, as advanced economy pharmaceutical firms move standardized R&D processes, such as clinical trials, to sites in emerging market economies, they improve the cost efficiency of their overall R&D operations. These operations often evolve to undertake more specialized activities and some of their knowledge ‘spills over’ into the local economy^[4] (Mansfield, 1985).

Firms from emerging economies that are initially commissioned to perform a standardized (low value added) activity have incentives to acquire resources and competencies that will enable them to control higher value creating components (Wilkinson et al., 2001; Yuan et al., 2010). They strive to develop their own brands and marketing expertise in advanced economies (Khanna and Palepu, 2006). Locating their R&D and marketing operations in advanced market economies also enables these firms to increase their absorptive capacity (Zahra and George, 2002). They attempt to develop capabilities to ‘catch-up’ with rivals based in advanced market economies. These efforts often generate negative cash flow in the short run, as resources are withdrawn from low-margin contract manufacturing and assembly, and moved to R&D and marketing, areas in which the firm has little experience. Haier, the Chinese appliance producer, is an archetypical case: it began as a private label manufacturer before launching its own brand. This required it to set up expensive R&D and design facilities in the USA, Canada, Japan, France, and the Netherlands to source knowledge (Liu and Li, 2002).

The reciprocal spillover and catch-up processes generate a Red Queen type effect on advanced economy MNEs (Barnett, 2008), whereby they must continually increase their rate of innovation as knowledge diffusion rates rise. Therefore the dynamics of outsourcing and offshoring is part and parcel of the increasingly competitive nature of the global economy and the more rapid emergence of new industries from R&D (e.g. biotech, nanotech) and marketing (e.g. e-tailing, online auctions) innovations.

External dynamics – the competitive environment. The comparative advantages various nations hold change over time. Decisions about the location and control of value-creating activities therefore need to be based on a profound understanding of the dynamics of international competitiveness.

Many factors determine the competitiveness of a nation, and hence its comparative advantage. One approach is to aggregate these factors to generate rankings, such as the World Competitiveness Index (IMD, 2009). This report demonstrates that it is not unusual for nations as a whole to gain (or lose) up to ten positions in one year. In 2009, Greece dropped from position 42 to 52; Finland rose from position 15 to 9. Alternatively, if we take labour costs as an indicator of comparative advantage, we see that in 1996, the

average hourly compensation cost for an employee in manufacturing in the Czech Republic was USD 3.42 compared to USD 22.11 in the United States (US Department of Labor, <http://www.bls.gov>). Eleven years later, in 2007, the figures were USD 30.56 in the United States (a 38.22 per cent increase) and USD 9.67 in the Czech Republic (a 282.75 per cent increase). These substantial changes in national competitiveness would likely be felt at the industry level and clearly show that location decisions need to be revised continually.

EMPIRICAL SETTING AND METHOD

We develop two case studies to use as templates for illustrating the nexus between outsourcing and offshoring decisions. We select a manufacturing industry (mobile handsets) and a service industry (banking and financial services) to highlight commonalities and differences across sectors with regard to the strategic nexus of offshoring and outsourcing strategies. The research methodology used in this study is qualitative, exploratory, and holistic (Eisenhardt, 1989; Yin, 1994). We draw from a broad, diverse empirical base that comprises primary data (interviews with senior managers, company documents) and secondary sources (case studies, newspaper articles, consulting reports, white papers). For both the mobile handset and financial services cases, company websites were a valuable source of information with investor relations material, annual reports, and 10K filings. In addition, we obtained specific data from a focused process of data collection from publicly available secondary sources – publications, consulting reports, and white papers. These include Interbrand, Reuters, Bloomberg, Bancscope, Thomson, Forbes.com, and *The Banker*. Interviews with managers from several banks and operators in the mobile handset market refined our insights from secondary data. We achieved triangulation of data through iterated inquiries with interviewees, comparison with secondary data, and discussions with industry experts from consulting and investment banking. Our comparative case data is detailed and extensive and helps us to illustrate and refine the core concepts presented in this paper. We are looking for *prima facie* evidence regarding the importance of the activity level (as opposed to the firm or industry level) in the magnitude, sequence, and dynamics of location and control decisions in manufacturing as well as services.

Manufacturing: The Mobile Handset Industry

The mobile handset industry provides a particularly useful setting to examine our research questions in the context of manufacturing. It has global importance – shipments exceeded 1.2 billion units in 2008 (Gartner, 2009). However, volume and revenue growth in 2008 and 2009 were modest, reflecting the increasing intensity of competition, as discussed above, and the global recession. Markets in emerging economies, such as China and India, continue to expand rapidly as the penetration rate of mobile devices rises. China and India are now the largest and fourth-largest markets, respectively, in terms of mobile subscribers. At the same time, markets in most advanced market economies have matured. In all markets, consumers are becoming more design con-

scious and resistant to standardized offerings. In addition, some Asian players are acquiring the skills and competencies necessary to compete against the established firms, serving as exemplars of catch-up processes.

The industry's value proposition may be approximated by a linear sequence of value-creating processes that differ systematically in terms of the extent of value added. High value-added activities appear at the ends of the value chain. Firms from emerging market economies, like Huawei of China, began as electronics manufacturing service companies. They originally competed on the basis of low costs and supplied private-label products to brand-owning firms from advanced market economies. However, these firms are building marketing competencies to develop and support their own brands. Over time, their brands are likely to become more valuable. This puts pressure on manufacturers in advanced market economies, such as Nokia, Motorola, Apple, and Sony-Ericsson, to continually innovate to maintain the high level of value added. These established players' innovations are increasingly design driven in recognition of the highly variegated needs of individual markets. All of these design strategies are aimed at buttressing and enhancing the value of the brands.

Firms from recently developed countries, such as Samsung and LG of Korea, find themselves pushed to differentiate themselves from their competitors from emerging market economies. This poses a significant challenge, since these firms often remain dependent on suppliers from advanced market economies for their core technologies. For example, Samsung depends on Qualcomm for its CDMA base-band chips. It has accelerated its R&D efforts to develop its own chipsets in order to minimize this dependency. In addition to efforts in manufacturing, Samsung is implementing a design-driven strategy with design centres in London, Milan, Tokyo, and the Silicon Valley.

Therefore, a convergence in the location strategies of all firms in the industry is evident (McCann and Mudambi, 2005). In the short run, these strategies increase the concentration of high value-added activities in advanced market economies. However, local demands in emerging market economies are already imposing demands on the design capabilities of firms from advanced market economies (Meyer et al., forthcoming). Nokia Design, a unit comprising 250 people worldwide, has implemented design projects in locations as diverse as Uganda and India. The unit involves psychologists, industrial designers, materials experts, and anthropologists, and leverages human-behavioural research to deliver location-focused product design.

Along with the convergence in location strategies, we observe a divergence in control strategies. Nokia at the high-value end and Samsung at the low-cost end of the industry remain vertically integrated, while Apple, Motorola, and Ericsson have largely outsourced the middle of the value chain. Both strategies are responses to the same pressures being exerted by mobile service providers like Vodafone and AT&T. As market competition escalates, service providers are increasingly using the unique software and features (different menus, features, branding, languages, etc.) built into the phones they offer to generate competitive advantage. They want that software to be installed by phone makers before the handsets leave the factory.

Mobile handset manufacturers have responded by dividing production into two distinct processes. In the first, they build the innards of the handset, the so-called 'engine'. These are generic devices that can be customized to take on different jobs. In the second

process, the raw engines are customized to the requirements of different service providers and markets. Vertically integrated manufacturers retain control over both processes, while so-called 'semi-integrated' players retain the design and customization processes while they outsource the actual manufacturing. This organizational divergence can be explored by comparing Nokia and Apple.

Nokia is an engineering-driven company with a focus on manufacturing excellence and it is the largest firm in the mobile handset industry by far. In 2006, Nokia shipped more than 300 million units – twice as many as it had shipped just four years earlier. To do so, it handled more than 100 billion parts in its ten factories scattered around the world. These plants are located in advanced market economies, such as Finland, Germany, and the UK, and in emerging market economies, such as Brazil, India, and China. The challenges of handling such huge volumes are enormous but over the past 15 years Nokia has turned high-tech manufacturing and logistics into one of its core competencies.

Nokia's control of manufacturing enables it to execute the second process of customization extremely rapidly – the company can transform raw engines into hundreds of thousands of built-to-order phones in a matter of days. The need to control this complex process with the highest precision and quality is the reason Nokia retained a high level of control over its manufacturing.^[5] Indeed, Nokia sees its manufacturing expertise as a key means of enhancing its design skills and leveraging external knowledge resources like open source communities (Stuermer et al., 2009). Reciprocally, the huge volume and customization requirements put pressure on the company's design capabilities. In short, Nokia is a firm with high levels of linkage economies (Mudambi, 2008).

Apple, on the other hand, is a recent entrant into the mobile handset industry, with its iPhone debuting in 2007. The company focuses on the intangible aspects of its product offering. From its earliest days, Apple recognized that style and ease of use are as important as substance in terms of developing a brand (Cusumano, 2008). This strategic approach implies that it is crucial to control the fundamental building blocks that support the brand, i.e. design and marketing. On the other hand, manufacturing is less important for such a firm. In the mobile handset industry, Apple's well-known iPhone provides an apt illustration of the implementation of this strategy (Cusumano, 2008). Apple controls R&D-intensive activities on the upstream end of the value chain and marketing-intensive activities associated with brand management on the downstream end. However, the manufacturing and application-oriented activities in the middle of the value chain are outsourced. These activities are more closely connected to the tangible aspects of the iPhone and less linked to the intangible aspects. Apple has successfully decoupled the tangible and intangible aspects of its business.

Apple outsources higher value-added activities to developed countries, such as the UK or Germany. These activities are controlled by firms like ARM Holdings (chip design) and Balda AG (touchscreens). Marketing support activities on the downstream end are located in the USA and controlled by firms like TBWA/Chiat/Day. Routine manufacturing and assembly are undertaken in Taiwan by firms like Inventec and Hon Hai Precision Industry. Relatively complex items, such as chips, are manufactured to design specifications by Samsung in Korea and NXP Semiconductor in the Netherlands. The sub-assemblies subsumed within the iPhone could be subjected to a similar analysis. For

example, a systematic disaggregation of value creation in terms of the value chain of Balda's touchscreens could be undertaken. Value chains are nested inside one another, like Russian matryoshka dolls.

The differences between Nokia's vertical integration strategy and Apple's specialization strategy illustrate some fundamental differences in the approaches to generating knowledge, innovation, and value in creative industries. The stark differences between the two are evident in their approaches to the nexus of control. Apple implements a high degree of outsourcing, while Nokia is highly vertically integrated.

Although both Nokia and Apple have geographically dispersed value chain activities, their strategic decisions regarding control affect their location patterns. Nokia maintains manufacturing facilities in Salo, Finland as well as in Germany and the UK, in addition to facilities in emerging market economies like China, India, Brazil, and Mexico. The location of Apple's outsourced manufacturing is more flexible, since it can simply choose the best partner or supplier for the components that it designs.

Finally, Apple's R&D is focused on specific activities in the value chain. It does not need to spend its R&D budget on activities that are outsourced. Therefore, it is able to piggyback on and profit from the R&D expenditures of its suppliers. Nokia is obliged to spread its R&D budget over the entire value chain. The two control strategies therefore have direct implications with regard to innovation performance. Apple's focused R&D has produced significantly better financial performance in recent years. Apple's R&D to sales ratio was 3.8 per cent in 2005, compared to Nokia's 11 per cent, and Apple outperformed Nokia on a wide range of financial performance measures from 2001 to 2005, reflecting the former's greater leverage on R&D spending.^[6]

The evidence from the mobile handset industry seems to support our basic position regarding the increasing importance of the activity level of analysis. Managers have increasing flexibility in setting firm boundaries as technology makes it possible to exercise control over finer and finer slices of the value chain. Concomitantly, an increasing range of locations are viable for undertaking even sophisticated activities. The magnitude of offshoring appears to be increasing for all firms. However, the magnitude of outsourcing is not uniform. Some firms take advantage of technological possibilities to increase outsourcing, others do not. Firms implementing both strategies exhibit positive performance. This finding raises interesting research questions regarding the underlying firm level competencies that support each of these strategies.

The sequence of decision making in this industry seems to be based on the primacy of control, with location being secondary. The dynamics seem to favour increased geographical dispersion of value creation and increased emphasis on adaptation to local requirements both in technology and design (Meyer et al., forthcoming).

Services: The Banking Industry

Many theories in international business strategy were first developed within the context of manufacturing industries. To discern the applicability of the ideas presented in this paper to services industries at their very inception, the banking industry might serve as an appropriate example. Banking accounts for 5 per cent of the world's GDP, a figure that is expected to rise to 10 per cent by 2020. The global financial crisis that began in

2008 illustrated the centrality of this industry to the world economy. A new breed of multinational banks is gradually emerging. They are creating value by serving new markets and by disintegrating the value-creating activities of the financial services value proposition to allocate them within the network of globally dispersed operating units (Venzin, 2009).

The international exposure of banks has substantially increased in recent years. Among the banks with the highest level of internationalization are HSBC and Citigroup, which started to serve international markets decades ago. With a history of almost 200 years, Citigroup is present in 100 countries and has around 300,000 employees in the various units of an interactive subsidiary network. With over 98 per cent of its employees being local, Citigroup aims to cope with cultural diversity. The company serves more than 200 million client accounts with a full range of financial services products. Recently, Citigroup transferred 20,000 jobs from the USA to India, most of them in the higher value-added areas of investment banking (e.g. stock market analysis).

Even before it became a major casualty of the financial services meltdown of 2008, Citigroup was overtaken in terms of market capitalization by the Industrial and Commercial Bank of China (ICBC). This emerging economy bank had a market capitalization of over USD 340 billion in September 2007 and has been moving aggressively to increase its international presence. In October 2007, ICBC acquired 20 per cent of South Africa's Standard Bank for USD 5.46 billion, a move that should help to lift international revenues from 3 per cent to about 10 per cent. Since Standard Bank is one of the world's most knowledgeable banks in terms of banking in emerging economies, ICBC has secured access to valuable know-how in addition to a larger international banking network with which to service Chinese corporate clients abroad.

These and other stories about internationalizing banks show that cross-border activities have become increasingly important for many larger players from mature and emerging economies. This trend is not only evident in investment, private, and corporate banking, but also in the retail distribution of financial services products.

However, banks are special – they do business with each other. In other industries, firms love to see a competitor tumble, but banks fear the collapse of their peers. Their value propositions are naturally interlinked and many of their processes are relatively easy to disaggregate due to the high degree of digitalization. Higher levels of disaggregation lead to increased complexity which in turn makes it difficult to represent all banking activities in the form of a linear sequential value chain. Most business processes are highly intangible and do not require physical resources. The branch network and the IT backbone may be the only significant tangibles required in the retail banking business. Most other service components have a large digital component. Therefore, activities in the value chain with high intangible components are often standardized and not necessarily associated with higher value creation. However, heavy investments in tangibles tend to depress value creation; retail banking has significantly higher tangible elements (e.g. the branch office network) than investment banking or private banking, and it also has a lower average profitability.

However, the digital character of banking services facilitates the decomposition of the value chain and the execution of even tiny parts of it in remote places (Jacobides, 2005). As a result, many banks have attempted to offshore value-creating activities. Several of

the high value creating activities (or less-standardized processes), such as the securitization of loans, are undertaken in financial services hubs (i.e. London, New York). Highly standardized, low value-added processes are often located in emerging countries that offer lower labour costs. Increasingly, financial services firms from developed economies create competence centres in emerging countries because they find the skilled human resources and process capabilities they need in the companies they acquire in these countries.

One example of the separation of high and low value creating processes appears in investment banking. Large financial services firms, such as Citigroup, JP Morgan, or HSBC, use equity research business process outsourcing (BPO) or knowledge process outsourcing (KPO) (Mudambi and Tallman, 2010). Suppliers of these services – firms that specialize in offshore investment research, such as OfficeTiger (recently acquired by RR Donnelley) and Irevna – are located in India. This shows that even in knowledge-intensive service industries, it is possible to identify value chain activities that can be standardized and offshored. However, this is a recent trend. Lower value creating equity research processes that can be offshored are library functions, and generate very structured company and industry reports. To some extent, even the blending and packaging of various data on a given subject can be offshored, e.g. analysis of earnings estimates for a biotech company based on a valuation model. However, the higher value creating activities of investment banking, such as raising money by issuing and selling securities in the primary market, assisting public and private corporations in raising funds in the capital markets, and providing strategic advisory services for mergers and acquisitions, are still located in the advanced market economies.

Italy's Unicredit Group serves as another example. The retail bank has emerged as a large multinational in less than five years through its aggressive internationalization process. With its 170,000 employees and over 9000 branches, the bank aspires to be the first truly Pan-European financial service firm. Unicredit had multiple motives to aggressively pursue international expansion (i.e. level of free cash flow, superior capabilities in banking and post-merger integration processes, a desire to remain autonomous). However, Unicredit soon realized that it could generate value by accessing resources and capabilities that could be transferred back to the whole network. To leverage competences across the group, the bank created global product divisions (i.e. Markets & Investment Banking; Private Banking & Asset Management; Corporate Banking; Retail Banking) and a Global Banking Services Division. Only Poland and the Central and Eastern Europe (CEE) countries are organized as regional divisions. However, the bank intends to integrate them with the product divisions in the near future. This divisional structure built the foundations for an advanced offshoring (or near-shoring) strategy. Global factories located in diverse places within the Unicredit network provide group-wide, best-in-class services and products by leveraging on local skills, market conditions, and scale effects. In 2007, Unicredit had nine ICT competence centres and six back-office competence centres (see Tables I and II).

These examples show that backbone processes in most banks are highly digitized and geographical distance is rarely a major concern. The intangible, knowledge-intensive nature of front-end activities makes the delegation of activities to suppliers more difficult. The offshoring of high value creating backbone processes to centres of excellence is

Table I. Unicredit's ICT competence centres

<i>Location</i>	<i>Activity</i>
Czech Republic	EUROSIG support
Hungary	CEE core banking
Poland	B2E, treasury
Turkey	Cards
Austria	iSeries, international network
Germany	Investment banking, Basel II, open systems
Ireland	Asset management
Italy	EUROSIG, mainframe

Table II. Unicredit's back office competence centres

<i>Location</i>	<i>Activity</i>
Czech Republic	Payments
Germany	Finance and treasury
Austria	Loans and mortgages
Turkey	Cards
Italy	Core banking
Romania	Near-shoring strategic site (mainly) for all operational lines

Source: Presentation, Robert Zadrazil, COO Bank Austria Creditanstalt, 19 September 2007.

therefore a growing phenomenon in financial services segments, even in retail banking. To successfully compete in investment banking, for example, many banks decide to establish competence centres in the banking clusters of London and New York (Maskell and Lorenzen, 2004). Geneva is an attractive location in which to establish a competence centre for wealth management and private banking. The emergence of these hubs boosts international integration and coordination between subsidiaries, which benefits from the arbitrage of local resources and capabilities (Venzin, 2009).

In regions where cultural, administrative, geographic, and economic (CAGE) differences are few, financial services firms have more possibilities to implement aggregation strategies to achieve economies of scale (Lihong and Delios, 2008). On the other hand, when administrative differences are high, it is often difficult to identify best practices, and standardizing processes becomes much more challenging. If, for example, a wealth management firm wants to assess the profitability of its global clients, it must compare local customer data at a central point but many countries do not permit the transfer of sensitive customer data outside the home country. On the other hand, peripheral (mostly backbone) business activities, such as the development of software, the operation of call centres, or the processing of administrative data, can be effectively outsourced.

Like many other banks, the British HBOS (Halifax Bank of Scotland) tries to reduce the complexity of administrative processes by following the 'one-and-done principle'

(Kershaw, 2008). The goal is to avoid having too many papers moving around – bank clerks in the retail branch verify the customers' requests and then make the changes themselves, if possible. This not only drives down costs but also increases the service level. Customers can get an approval for a credit card application or a mortgage loan in real time. The essential leverage for cost efficiency is therefore to design administrative processes in a way that fewer employees and layers are involved. This leads to high responsiveness and fast execution. For example, when customer data need to be changed, an employee directly arranges changes with the client in the system instead of triggering a long bureaucratic chain. This obviously reduces the potential for offshoring and outsourcing.

Compared to manufacturing firms, offshoring has not been a major driver of internationalization for financial services firms. For the latter, offshoring has mostly involved IT, back-office processing, and call centre operations. Nevertheless, the pace of offshoring has increased rapidly. Deloitte & Touche estimated that financial services companies increased their numbers of overseas employees 18-fold from 2003 to 2006, with the majority of the financial institutions surveyed experiencing cost savings of more than 40 per cent for each business process offshored (Deloitte & Touche, 2007).

Offshoring has also been driven by a global quest for knowledge. The search for high-level software development skills, e.g. for the development of sophisticated automated trading models and derivative valuation models, has led the investment banks to seek expert quantitative skills wherever they are available, especially in Russia, Taiwan, Israel, and Singapore. There is also a need for trading and research activities to be conducted close to the sources of market information and specialist expertise. Leading investment and wholesale banks have found it necessary to be located in all of the world's major financial centres in order to be where the action is. One remarkable feature of the hedge fund industry is that, despite its intensive use of location-independent information technology, it is one of the world's most geographically concentrated industries. Favoured locations include Greenwich, Connecticut, a small area between Manhattan's midtown and the upper east side, St James's Square in London, and Telok Ayer Street in Singapore (Gross, 2007).

Financial services companies also arbitrage between more highly developed and less highly developed financial services markets. For banks and insurance companies, one additional attraction of emerging market countries is the possibility to transfer products that were developed in advanced market economies. An example of 'undifferentiated arbitrage' comes in the form of wealth management firms that use their representative offices to attract local demand to investment products designed for their home markets (Venzin, 2009).

Financial services firms are no exception to the strategies aimed at promoting 'catch-up'. As noted above, ICBC bought a 20 per cent stake in South African Standard Bank. China Investment Corporation (CIC), the Chinese state investment company, was set up with an initial capital of USD 200 billion from the country's enormous foreign exchange reserves. In June 2007, it invested USD 3 billion to buy a 9.9 per cent stake the US private equity firm Blackstone. In October 2008, it raised its stake to 12.5 per cent as Blackstone's share price plummeted in the global financial services meltdown. On 19 December 2007, CIC invested USD 5.6 billion to buy nearly 10 per cent of Morgan

Stanley. CIC has also been aggressively recruiting top financial services managerial talent. These are only a few examples of recent moves by emerging market financial institutions to develop the competencies to catch up with advanced economy firms and compete in high-value activities.

The global credit crisis at the end of 2007 opened many sealed doors for mostly passive investors from emerging economies. The state investment fund of Singapore injected USD 9.75 billion into UBS in December 2007. In the same deal, the state investment fund of Oman injected another USD 1.7 billion. The state investment fund of Abu Dhabi injected USD 7.5 billion into Citigroup in November 2007 to acquire a 4.9 per cent stake and become the bank's largest single shareholder. Given the falling value of these investments, even the passive sovereign wealth funds are beginning to consider a more active role in these financial services firms in advanced economies.

The phenomenon of 'catching up' happens quickly and forces financial services firms from advanced market economies to not only constantly search for sources of competitive advantages to defend their home markets but also to carefully select the foreign markets at which they wish to take aim. The times when financial services firms could easily find countries with lucrative takeover targets and a free avenue to increased market share are probably a thing of the past. As a result, market selection and the subsequent definition of entry strategies have to be addressed more carefully.

The importance of analysis at the activity level also appears in our analysis of financial services. Firms are able to make strategic decisions with regard to control and location on finer slices of the value chain (Jacobides, 2005). However, the geographical dispersion of value creation appears to be less pronounced than in the case of mobile handsets. This is counter-intuitive, given that the industry is asset light, with predominantly intangible outputs. This may be because the high value and low value components of the value proposition are based on different and distinct resources and competencies.

DISCUSSION

The comparative case evidence (summarized in Table III) indicates that outsourcing and offshoring seem to be increasing and involving progressively more knowledge-intensive processes. The mobile handset industry is fairly advanced in the use of offshoring and outsourcing strategies, while the financial services industry is less prone to both strategies. Although the output of many financial services processes can be digitalized and sent around the world, the administrative differences among nations often prevent firms from making use of aggregation strategies. Another reason for the lower *magnitude* of offshoring and outsourcing of financial services is that value-creating processes of financial services are more complex than they are for manufacturing. The many processes involved in the delivery of services do not follow a simple sequence or dependency (Stabell and Fjeldstad, 1998). Furthermore, the cross-border strategies of financial services firms have been primarily driven by market-seeking motives rather than an attempt to tap into interesting input markets.

Our findings suggest that the geographic dispersion of value chain activities is observed in most leading firms of the two focal industries, but it appears that there are two fundamentally different strategies in terms of how the value proposition is controlled,

Table III. Case evidence

Research issue: 'We study the magnitude, sequence, and dynamics of the interdependent decisions regarding control and location of the various parts of the value chain, as captured in three separate but related research questions'	<i>Evidence from the mobile handset industry</i>	<i>Evidence from the financial services industry</i>
<p><i>Research questions</i></p> <p>Research question 1 (magnitude): To what extent does it make economic sense to 'fine slice' value chain activities, to delegate them to third parties, and/or to undertake them in cost-effective or knowledge-enhancing (often remote) locations?</p> <p>Research question 2 (sequence): What is the sequence of decision making?</p> <p>Research question 3 (dynamics): How dynamic are offshoring and outsourcing decisions?</p>	<p><i>Evidence from the mobile handset industry</i></p> <ul style="list-style-type: none"> • Substantial differences in levels of control exist. • New industry players (such as Apple) seem to prefer a more flexible model of outsourcing activities paired with tight supplier control. • We observed a convergence in location strategies among industry players. • Increasingly complex processes are offshored. • Firms tend to define their business model first (i.e. what value creating processes to control) and decide then where to locate the value creating processes. • The number of potential outsourcing/offshoring combinations is too high and the transaction cost/benefit ratio is too difficult to calculate for all options. Simultaneous evaluation of all available options is difficult or impossible. In these cases, firms aim to limit the spectrum of choices by setting strategic guidelines that prioritize location or control. • Changes in the distribution of the competitive advantages of firms (through spillovers, catch-up, and innovation) as well as the comparative advantages of nations force firms to frequently adapt their offshoring and outsourcing decisions. • The entrance of a new player from a mature economy (Apple) as well as catch-up strategies pursued by firms located in emerging economies require established firms to adapt their location and control decisions. 	<p><i>Evidence from the financial services industry</i></p> <ul style="list-style-type: none"> • The level of fragmentation of the financial services value chain has certainly increased in the past. • Substantial cross-border M&A activities into emerging markets have caused firms to in-source activities. • The level of offshoring has increased but is for many segments below the levels of manufacturing firms. • Many offshoring cases of high value added activities can be found, but it is not yet an established practice (at least in retail banking). • Most financial services firms have a clear view on what core processes to control. • Beyond, these core processes (e.g. risk management, sales, etc.), peripheral processes are evaluated based on firm as well as market factors. For such processes, no general sequence of decision making can be found and are often opportunity driven. • The cross-border aggregation has been driven by intensive M&A activities. As a result, the location and control decisions are often dependent on the specific competences of the local target firm. • Both offshoring as well as outsourcing decisions are frequently reviewed, especially when banks pursue aggressive market expansion plans. • When locating activities in smaller economies, cost levels of the performed processes seem to raise quickly. • Advanced economy firms in service industries have fewer concerns about knowledge spillovers from the offshoring of low-value service activities, because many of these activities are not integral to the value proposition.

especially by firms in advanced market economies. One strategy is based on vertical integration, i.e. maintaining control over the tangible and intangible aspects of the firm's value proposition. Such a strategy is likely to appeal to firms that have relatively strong competencies in manufacturing or standardized service delivery, as well as the ability to link these competencies to more knowledge-intensive activities in R&D, design, and marketing.

An alternative strategy is based on specialization, i.e. focusing on controlling the activities in the value chain that require the highest levels of commercial creativity and generate the highest levels of value. Such a strategy is likely to appeal to companies that have relatively weak competencies in linking standardized and specialized activities, but strong dynamic competencies in orchestrating internal knowledge-intensive activities with standardized activities outsourced to other firms (Winter, 2003; Zollo and Winter, 2002).

However, underlying both of these strategies is the recognition that high value creation emanates from control over highly knowledge-intensive activities in the value chain (Mudambi, 2008; Teece, 1998). It is unclear whether either strategy dominates the other. Both are knowledge-based strategies that generate value on the basis of creative endeavours. However, the specialization strategy is likely to generate greater flexibility, but it demands a high level of firm competency in terms of value chain orchestration. This competency is likely to differ across firms in an industry – those with lower levels of orchestration competency will face higher risks of becoming 'hollowed out', of value chain disruptions, and of supplier and buyer opportunism (Kotabe and Mudambi, 2009).

The *sequence* of offshoring and outsourcing decisions is often influenced by contextual factors. Most of the international expansion of banks, for example, has been executed through intensive M&A activities. As a result, the location and control decisions have often been dependent on the specific competences and resources of the local target firm. Similarly, in the mobile handset industry the business models and the outsourcing schemes seem to dominate offshoring decisions. Although the recipes are different, the offshoring decision seems to follow a decision on which activities to control. Some established players, such as Nokia and Samsung, seem to prefer controlling the entire value chain, while newcomers such as Apple rely heavily on outsourcing of more standardized activities.

For most firms, the number of potential outsourcing/offshoring combinations is too high and the transaction cost/benefit ratio is too difficult to calculate for all options. Simultaneous evaluation of all available options is difficult or impossible. In these cases, firms aim to limit the spectrum of choices by setting strategic guidelines that prioritize location or control.

The location decision may come before the control decision if the comparative advantage of the home country for the specific activity has vanished. There is evidence that Belgian firms have increased their probability of survival by offshoring activities to non-European Union countries (Coucke and Sleuwaegen, 2008). This study shows that domestic industry can be forced to rethink the current structure when faced with imports originating from low-wage countries. The performance differences (cost of production in this case) between countries are much higher than the differences among domestic suppliers of this activity.

The control decision may come before the location decision if the firm has clearly lost a competitive edge in performing an activity or if an activity has been identified as a core competence that defines its business model (Hamel and Prahalad, 1990). If the focal activity is not a source of sustainable competitive advantage – in other words, others are performing this activity at a lower cost and/or with lower quality – then it makes sense to outsource it. If, however, the activity is considered to be a central part of the value proposition, a firm might make use of transformational outsourcing (Linder, 2004). In this case, the activity is outsourced with a clear intention to learn from the outsourcing partner and internalize the activity back later. However, as is the case with many other strategic decisions, firms might make their decisions based on competitive moves of others (imitation approach), the application of strategies that have worked in the past (naïve approach), or the availability of a specific opportunity (opportunistic approach).

The evidence from both industries analysed in this paper seems to support existing literature on the *dynamics* of offshoring and outsourcing. Changes in the distribution of the competitive advantages of firms (through spillovers, catch-up, and innovation) as well as the comparative advantages of nations force firms to frequently adapt their offshoring and outsourcing decisions. Even high value-added activities are offshored to low-cost locations, especially in times of economic pressure, such as those that we are currently experiencing. There are static and dynamic aspects to our model on value chain location and control. The static analysis recognizes that the cost and competency dimensions of offshoring lead to a systematic pattern of activity location. Low-value activities are typically offshored to emerging markets and developing economies, while high value activities are typically undertaken in (and offshored to) advanced market economies. The static analysis also recognizes that the nature of operations in emerging market economies covers a diversity of organizational forms ranging from wholly owned subsidiaries (captive offshoring) to independent emerging market firms working as partners of advanced market firms (offshore outsourcing). The former corresponds to the vertical integration strategy, while the latter relates to the specialization strategy.

The dynamic analysis recognizes that the low-value activities performed in emerging market economies will change over time through two complementary processes: spillover and catch-up. The spillover process is driven by advanced market economy firms moving more sophisticated activities to emerging market economies. Consider for example, the operations of Japanese firms in China (Delios et al., 2009). This process is accelerated as the local capabilities increase and as technology allows for more fine-slicing of the value chain, i.e. the stripping out of standardized components from the most sophisticated activities. The catch-up process is driven by emerging economy firms. This process speeds up as these firms undertake more sophisticated tasks as outsourcers to advanced economy firms and learn from them through technology spillovers (mobility of personnel, observation of business practices, etc.) (Mansfield, 1985).

All of these considerations apply to the manufacturing and service industries. However, our case studies highlight some fundamental differences. In manufacturing, there is often a path from assembly to component manufacture and, eventually, to design. This is because offshored activities in manufacturing, such as assembly, are usually ‘integral’ to the value proposition for two reasons. First, over time firms undertaking low value activities develop an understanding of the entire value proposition.

Second, the final customers often explicitly perceive the outcome of the low-value activity, e.g. a component of an athletic shoe.

However, in service industries like banking, the separation between high-value and low-value activities is often more pronounced, e.g. the distinction between front office and back office functions. This distinction is based on two characteristics of low-value offshored activities. First, offshored activities, such as call centres and back office functions, are often not an integral part of the focal firm's value proposition. Firms undertaking a low-value activity like a back office IT function rarely perceive the entire value proposition of a banking operation. Furthermore, these activities are typically transparent to the eventual customer. Second, such activities are often general-purpose activities that are not highly specialized to the value proposition of the specific industry.

This means that advanced economy firms in service industries have fewer concerns about knowledge spillovers from the offshoring of low-value service activities, because many of these activities are not integral to the value proposition. By the same token, since spillover knowledge flows are small, emerging economy firms find that they must invest in advanced economy locations, often through acquisitions, to implement catch-up strategies. The mutually reinforcing effects of spillover and catch-up processes that we observe in manufacturing are less evident in service industries.

CONCLUSION

In this paper we explore the magnitude, sequence, and dynamics of the interdependent decisions regarding the control and location of various parts of the value chain. Using case illustrations from the mobile handset and the financial services industries, this article has attempted to provide a fresh perspective on the disintegration, mobility, and reintegration of value chain activities in a global context. The relevant considerations with regard to the effects of offshoring appear to be the extent to which the activity is an integral part of the value proposition, and whether it is general purpose or specialized. The distinction between service and manufacturing industries is only relevant to the extent that offshoring in service industries tends to be more concentrated in activities that are non-core and general purpose activities. Our findings have implications for managers and for policy makers. Managers must carefully consider the connection of offshored value chain activities to their core value proposition, as well as the extent to which those activities are specialized to their specific industry. Closely connected and specialized offshored activities will generate more significant spillover processes that aid emerging market firms in their efforts to implement catch-up strategies. This does not imply that advanced market firms should not offshore these activities, but that in such cases managers must be particularly vigilant in anticipating and preparing for stronger future competition from emerging market firms.

Finally, the dynamic spillover and catch-up processes spur advanced market economy firms to innovate and, in many cases, create new industries. Policy makers should recognize that these processes increase the churn in firm populations in both advanced market and emerging market economies. On the highest level, offshoring spawns forces that hasten the demise of weaker firms while increasing the rents available to firms that

maintain and enhance their dynamic capabilities through vertical integration or orchestration.

NOTES

- [1] BNET Business Dictionary, <http://dictionary.bnet.com/definition/Offshoring.html>
- [2] We recognize that outsourcing decisions are relative in that they are subject to the availability of effective suppliers. Effective suppliers are defined by the dictates of opportunity costs. In other words, a firm's resources must deliver higher returns in internal operations than they would in outsourced operations.
- [3] Attempts to develop internal hybrids by introducing market forces within the firm have been dogged by severe problems. It is difficult for managers to make it clear to workers that they will consistently allow internal market forces to work. Hence, the motivational benefits of internal markets are seldom realized and almost never sustained (see Foss, 2003).
- [4] For example, the IBM India Research Laboratory (IRL) was established in April 1998 with the objective of undertaking 'commodity' R&D tasks for IBM's seven other globally integrated research labs. Since its inception, it has grown significantly in technical leadership, accomplishments, and size. Today it has two locations (New Delhi and Bangalore) and its track record makes it one of the top research labs in India. Within IBM, it holds global technical ownership of key products, solutions, and services, and has driven a global agenda (Buderi, 2000) that is the essence of a competence-creating mandate (Cantwell and Mudambi, 2005).
- [5] Nokia does use contractors for a small number of handsets, mainly older models that do not require customization or rapid delivery.
- [6] These data were drawn from annual reports from Apple and Nokia, and other public sources. Financial performance was measured in terms of sales growth, gross margin percentage, gross profit growth, operating margin percentage, operating income growth, total shareholder returns, and market capitalization growth. Ironically, Nokia's brand was judged to be considerably more valuable than Apple's in 2009 (USD 34.9 billion vs. USD 15.4 billion) by the marketing consulting company Interbrand.

REFERENCES

- Banker, R. D., Charnes, R. F. and Cooper, W. W. (1984). 'Some models for estimating technical and scale inefficiencies in data envelopment analysis'. *Management Science*, **30**, 1078–92.
- Barnett, W. (2008). *The Red Queen among Organizations: How Competitiveness Evolves*. Princeton, NJ: Princeton University Press.
- Bock, S. (2008). 'Supporting offshoring and nearshoring decisions for mass customization manufacturing processes'. *European Journal of Operational Research*, **184**, 490–508.
- Brouthers, K. D. and Hennart, J.-F. (2007). 'Boundaries of the firm: insights from international entry mode research'. *Journal of Management*, **33**, 395–425.
- Buckley, P. J. and Casson, M. C. (1976). *The Future of Multinational Enterprise*. London: Macmillan.
- Buckley, P. J., Devinney, T. M. and Louviere, J. J. (2007). 'Do managers behave the way theory suggests? A choice-theoretic examination of foreign direct investment location decision-making'. *Journal of International Business Studies*, **38**, 1069–94.
- Buderi, R. (2000). 'Funding central research'. *Research-Technology Management*, **43**, 18–25.
- Calantone, R. J. and Stanko, M. A. (2007). 'Drivers of outsourced innovation: an exploratory study'. *Journal of Product Innovation Management*, **24**, 230–41.
- Cantwell, J. A. and Mudambi, R. (2005). 'MNE competence-creating subsidiary mandates'. *Strategic Management Journal*, **26**, 1109–28.
- Cantwell, J. A. and Santangelo, G. D. (1999). 'The frontier of international technology networks: sourcing abroad the most highly tacit capabilities'. *Information Economics & Policy*, **11**, 101–23.
- Coase, R. H. (1937). 'The nature of the firm'. *Economica New Series*, **4**, 386–405.
- Contractor, F. J., Kundu, S. K. and Hsu, C.-C. (2003). 'A three-stage theory of international expansion: the link between multinationality and performance in the service sector'. *Journal of International Business Studies*, **34**, 5–18.

- Contractor, F. J., Kumar, V. and Kundu, S. K. (2007). 'Nature of the relationship between international expansion and performance: the case of emerging market firms'. *Journal of World Business*, **42**, 401–17.
- Coucke, K. and Sleuwaegen, L. (2008). 'Offshoring as a survival strategy: evidence from manufacturing firms in Belgium'. *Journal of International Business Studies*, **39**, 1261–77.
- Cusumano, M. (2008). 'Technology, strategy and management: the puzzle of Apple'. *Communications of the ACM*, **51**, 22–4.
- Delios, A., Xu, D. and Beamish, P. W. (2008). 'Within-country product diversification and foreign subsidiary performance'. *Journal of International Business Studies*, **39**, 706–24.
- Delios, A., Beamish, P. and Zhao, X. (2009). 'The evolution of Japanese investment in China: from toys to textiles to business process outsourcing'. *Asia Pacific Business Review*, **15**, 323–45.
- Deloitte & Touche (2007). *Global Financial Services Offshoring Report*. New York: Deloitte & Touche.
- Demirbag, M. and Glaister, K. W. (2010). 'Factors determining offshore location choice for R&D projects: a comparative study of developed and emerging regions'. *Journal of Management Studies*, doi: 10.1111/j.1467-6486.2010.00948.x.
- Dibiaggio, L. (2007). 'Design complexity, vertical disintegration and knowledge organization in the semiconductor industry'. *Industrial and Corporate Change*, **16**, 239–67.
- Doh, J. P. (2005). 'Offshore outsourcing: implications for international business and strategic management theory and practice'. *Journal of Management Studies*, **42**, 695–704.
- Doh, J. P., Bunyaratavej, K. and Hahn, E. (2009). 'Separable but not equal: the location determinants of discrete services offshoring activities'. *Journal of International Business Studies*, **40**, 926–43.
- Dunning, J. H. (1996). 'The geographical sources of the competitiveness of firms: some results of a new survey'. *Transnational Corporations*, **5**, 1–29.
- Eisenhardt, K. M. (1989). 'Building theories from case study research'. *Academy of Management Review*, **14**, 532–50.
- Farrell, D. (2005). 'Offshoring: value creation through economic change'. *Journal of Management Studies*, **42**, 675–83.
- Foss, K. and Foss, N. J. (2005). 'Resources and transaction costs: how property rights economics furthers the resource-based view'. *Strategic Management Journal*, **26**, 541–53.
- Foss, N. J. (2003). 'Selective intervention and internal hybrids: interpreting and learning from the rise and decline of the Oticon Spaghetti Organization'. *Organization Science*, **14**, 331–49.
- Friedman, T. (2005). *The World Is Flat*. New York: Farrar, Straus & Giroux.
- Gartner, I. (2009). *Dataquest Insight: Market Share for Mobile Devices*. Stamford, CT: Gartner.
- Ghemawat, P. (2003). 'Semiglobalization and international business strategy'. *Journal of International Business Studies*, **34**, 138–52.
- Graf, M. and Mudambi, S. M. (2005). 'The outsourcing of IT-enabled business processes: a conceptual model of the location decision'. *Journal of International Management*, **11**, 253–68.
- Grimpe, C. and Kaiser, U. (2010). 'Balancing internal and external knowledge acquisition: the gains and pains from R&D outsourcing'. *Journal of Management Studies*, doi: 10.1111/j.1467-6486.2010.00946.x.
- Gross, D. (2007). 'The Kingdom of Hedgistan: why hedge funds cluster in the world's most expensive habitats'. *New York Magazine*, 9 April. Available at: <http://nymag.com/nymag/11793/> (accessed 17 May 2010).
- Grote, M. H. and Täube, F. A. (2007). 'When outsourcing is not an option: international relocation of investment bank research – or isn't it?'. *Journal of International Management*, **13**, 57–77.
- Hamel, G. and Prahalad, C. K. (1990). 'The core competence of the corporation'. *Harvard Business Review*, **68**, 79–93.
- Hätönen, J. and Eriksson, T. (2009). '30+ years of research and practice of outsourcing – exploring the past and anticipating the future'. *Journal of International Management*, **15**, 142–55.
- Holthausen, R. W. and Watts, R. L. (2001). 'The relevance of value-relevance literature for financial accounting standard setting'. *Journal of Accounting & Economics*, **31**, 3–75.
- IMD (2009). *World Competitiveness Yearbook*. Lausanne: World Competitiveness Center.
- Jacobides, M. (2005). 'Industry change through vertical disintegration: how and why markets emerged in mortgage banking'. *Academy of Management Journal*, **48**, 465–98.
- Kedia, B. and Lahiri, S. (2007). 'International outsourcing of services: a partnership model'. *Journal of International Management*, **13**, 22–37.
- Kershaw, P. (2008). *Personal interview with operations director for HBOS International*. 17 March.
- Khanna, T. and Palepu, K. G. (2006). 'Emerging giants'. *Harvard Business Review*, **84**, 60–9.
- Kohler, W. (2003). 'The distributional effects of international fragmentation'. *German Economic Review*, **4**, 89–120.

- Kotabe, M. (1990). 'The relationship between offshore sourcing and innovativeness of US multinational firms – an empirical investigation'. *Journal of International Business Studies*, **21**, 623–38.
- Kotabe, M. and Mudambi, R. (2009). 'Global sourcing and value creation: opportunities and challenges'. *Journal of International Management*, **15**, 121–5.
- Lewin, A. Y., Massini, S. and Peeters, C. (2009). 'Why are companies offshoring innovation? The emerging global race for talent'. *Journal of International Business Studies*, **40**, 901–25.
- Lihong, Q. and Delios, A. (2008). 'Internalization and experience: Japanese banks' international expansion, 1980–1998'. *Journal of International Business Studies*, **39**, 231–48.
- Linder, J. C. (2004). 'Outsourcing as a strategy for driving transformation'. *Strategy & Leadership*, **32**, 26–31.
- Liu, H. and Li, K. (2002). 'The strategic implications of emerging Chinese multinationals: the Haier case study'. *European Management Journal*, **20**, 699–706.
- Mansfield, E. (1985). 'How rapidly does new industrial technology leak out?'. *Journal of Industrial Economics*, **34**, 217–23.
- Maskell, P. and Lorenzen, M. (2004). 'The cluster as market organization'. *Urban Studies*, **41**, 991–1009.
- Maskell, P., Pedersen, T., Petersen, B. and Dick-Nielsen, J. (2007). 'Learning paths to offshore outsourcing: from cost reduction to knowledge seeking'. *Industry & Innovation*, **14**, 239–57.
- McCann, P. and Mudambi, R. (2005). 'Analytical differences in the economics of geography: the case of the multinational firm'. *Environment and Planning A*, **37**, 1857–76.
- Meyer, K. E., Mudambi, R. and Narula, R. (forthcoming). 'Multinational enterprise and local contexts: the opportunities and challenges of multiple-embeddedness'. *Journal of Management Studies*, forthcoming.
- Mudambi, R. (2007). 'Offshoring: economic geography and the multinational firm'. *Journal of International Business Studies*, **38**, 206–10.
- Mudambi, R. (2008). 'Location, control and innovation in knowledge-intensive industries'. *Journal of Economic Geography*, **8**, 699–725.
- Mudambi, R. and Helper, S. (1998). 'The "close but adversarial" model of supplier relations in the U.S. auto industry'. *Strategic Management Journal*, **19**, 775–92.
- Mudambi, R. and Navarra, P. (2004). 'Is knowledge power? Knowledge flows, subsidiary power and rent-seeking within MNCs'. *Journal of International Business Studies*, **35**, 385–406.
- Mudambi, S. M. and Tallman, S. (2010). 'Make, buy or ally? Theoretical perspectives on knowledge process outsourcing through alliances'. *Journal of Management Studies*, doi: 10.1111/j.1467-6486.2010.00944.x.
- Nachum, L. and Zaheer, S. (2005). 'The persistence of distance? The impact of technology on MNE motivations for foreign investment'. *Strategic Management Journal*, **26**, 747–67.
- Nohria, N. and Ghoshal, S. (1994). 'Differentiated fit and shared values: alternatives for managing headquarters-subsidiary relations'. *Strategic Management Journal*, **15**, 491–502.
- Piachaud, B. (2005). 'Outsourcing technology'. *Research Technology Management*, **48**, 40–6.
- Pyndt, J. and Pedersen, T. (2006). *Managing Global Offshoring Strategies: A Case Approach*. Copenhagen: Copenhagen Business School Press.
- Ricketts, M. J. (2002). *The Economics of Business Enterprise*. Cheltenham: Edward Elgar.
- Rubenstein, J. M. (2001). *Making and Selling Cars: Innovation and Change in the U.S. Automotive Industry*. Baltimore, MD: Johns Hopkins University Press.
- Rugman, A. (2000). *The End of Globalization*. New York: Random House.
- Rugman, A. and Verbeke, A. (2001). 'Subsidiary-specific advantages in multinational enterprises'. *Strategic Management Journal*, **22**, 237–50.
- Shin, N., Kraemer, K. L. and Dedrick, J. (2009). 'R&D, value chain location and firm performance in the global electronics industry'. *Industry and Innovation*, **16**, 315–30.
- Smakman, F. (2003). *Local Industry in Global Networks: Changing Competitiveness, Corporate Strategies and Pathways of Development in Singapore and Malaysia's Garment Industry*. PhD dissertation, Utrecht University. Utrecht: Rozenberg Publishers.
- Stabell, C. B. and Fjeldstad, Ø. D. (1998). 'Configuring value for competitive advantage: on chains, shops, and networks'. *Strategic Management Journal*, **19**, 413–37.
- Stuermer, M., Spaeth, S. and von Krogh, G. (2009). 'Extending private-collective innovation: a case study'. *R&D Management*, **39**, 170–91.
- Teece, D. (1998). 'Capturing value from knowledge assets: the new economy, markets for know-how and intangible assets'. *California Management Review*, **40**, 55–79.
- Venzin, M. (2009). *Building an International Financial Services Firm: How Successful Firms Design and Execute Cross-Border Strategies*. London: Oxford University Press.

- Wilkinson, B., Gamble, J., Humphrey, J., Morris, J. and Anthony, D. (2001). 'The new international division of labor in Asian electronics: work organization and human resources in Japan and Malaysia'. *Journal of Management Studies*, **38**, 675–95.
- Williamson, O. E. (1975). *Markets and Hierarchies: Analysis and Antitrust Implications. A Study in the Economics of Internal Organization*. New York: The Free Press.
- Winter, S. (2003). 'Understanding dynamic capabilities'. *Strategic Management Journal*, **24**, 991–5.
- Yin, R. K. (1994). *Case Study Research: Design and Methods*, 2nd edition. Thousand Oaks, CA: Sage.
- Yuan, L., Zelong, W. and Yi, L. (2010). 'Strategic orientations, knowledge acquisition, and firm performance: the perspective of the vendor in cross-border outsourcing'. *Journal of Management Studies*, doi: 10.1111/j.1467-6486.2010.00949.x.
- Zahra, S. A. and George, G. (2002). 'Absorptive capacity: a review, reconceptualization and extension'. *Academy of Management Review*, **27**, 185–203.
- Zollo, M. and Winter, S. G. (2002). 'Deliberate learning and the evolution of dynamic capabilities'. *Organization Science*, **13**, 339–51.