

# Playing Football in a Soccer Field: Value Chain Structures, Institutional Modularity and Success in Foreign Expansion

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**This paper suggests that an unrecognized determinant of global expansion is the *structure of the value chain*, which is both country- and sector-specific. Value chain structure evolves in a path-dependent, *country-specific* way. Differences in vertical structures between countries predict the extent to which firms in any segment can export their competitive advantage. For globalization to occur, firms must have an ‘institutionally modular’ product, which is not easy to achieve. Evidence from the mortgage banking industry suggests that increasing modularization and global convergence of value chain structures may be opening up new venues for globalization, especially in the service sector. Copyright © 2007 John Wiley & Sons, Ltd.**

## WHAT DETERMINES SUCCESS IN GLOBAL EXPANSION? BACKGROUND AND MOTIVATION

What determines success in global expansion? For some time we have known that a firm expanding in a foreign country faces a potentially hostile environment. Lack of access to local resources, imperfect knowledge of the local operating environment and potential difficulties in establishing a competitive position put the expanding firm at a disadvantage vis-à-vis its local competitors (Buckley and Casson, 1976; Dunning, 1979; Caves, 1981; Rugman, 1981). As Hymer (1976) observed in his seminal contribution, there *have* to exist some firm-specific advantages that outweigh any generic dis-advantages of expanding abroad, i.e. the ‘liability of foreignness’ (Zaheer, 1995; Zaheer

and Mosakowski, 1997). To put it in Hymer’s words, ‘there are as many kinds of advantages as there are functions in making and selling a product’, which form the basis of global expansion, because they are superior in absolute or in relative terms (Yip, 2003). Kindleberger (1969) and Dunning (1979) suggested that firms expanding abroad possess ‘monopolistic advantages’ or ‘ownership-specific advantages’ that account for their success; and Vernon (1979) suggested that firms expand their products as a function of their position in the life cycle. Buckley and Casson (1976) argued that comparative advantage, i.e. the superiority in terms of capabilities of firms in developed countries is what accounts for patterns of both trade and FDI activity. From the 1980s onwards, the development of the field of strategy established the concept of competitive, firm-specific advantages (Nelson, 1995), which has recently been more fully integrated in international economics as well (cf. Markusen, 2002; Henisz, 2003). Thus, one of the major drivers of global

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1 expansion is to 'export' the competitive advantage  
 2 of particular firms. Such an 'export' could, in  
 3 principle, be achieved through either some market-  
 4 based arrangement (e.g. by the licensing or  
 5 franchising of a superior product or service in a  
 6 foreign country); or, failing that option, through  
 7 Foreign Direct Investment (FDI), either via  
 8 Greenfield operations or Merger & Acquisition  
 9 in a host country.<sup>1</sup>

10 Global expansion, then, requires some advan-  
 11 tage a firm should be able to leverage internation-  
 12 ally, e.g. in terms of the product or service it  
 13 produces, potentially on the basis of superior,  
 14 'leveragable' knowledge (Buckley and Casson,  
 15 1976; Teece, 1977, 1981; Kogut and Zander,  
 16 1993).<sup>2</sup> The success in global expansion, though,  
 17 also depends on the attributes of the host  
 18 nation—not only in terms of the benefits of  
 19 locating abroad due to location-specific advan-  
 20 tages such as lower costs of labor and resources  
 21 (Dunning, 1979; Rugman, 1981), but also in terms  
 22 of the *drawbacks* of locating in a country which  
 23 differs from that of the host (Zaheer, 1995; Zaheer  
 24 and Mosakowski, 1997), e.g. in terms of potential  
 25 Cultural, Administrative, Geographical and Eco-  
 26 nomic differences between 'host' and 'receiving'  
 27 country (Ghemawat, 2001). Some good progress  
 28 has been made in understanding these drawbacks,  
 29 and in unpacking the 'problems of going abroad'.  
 30 As Guillen and Suarez (2005) note in their recent  
 31 survey article, countries differ in terms of culture  
 32 (Hofstede, 1980, 1991); comparative authority/  
 33 business systems (Hamilton and Biggart, 1988;  
 34 Whitley, 1992; Guillén, 1994; Djelic, 1998); poli-  
 35 tical economy/MNC-friendliness (Gereffi, 1989);  
 36 legal tradition (La Porta *et al.*, 1999); and political  
 37 risk (Henisz and Williamson 1999; Henisz, 2000).  
 38 Yet all this literature points to how particular  
 39 *countries* differ, and as a result, how difficult it is  
 40 for one firm to manage to export its advantages  
 41 from its own onto another national context.

42 Still, this received wisdom cannot account for  
 43 the substantial inter-industry differences in pat-  
 44 terns of globalization, and especially the lack of  
 45 global expansion in some service sectors. Patel and  
 46 Pavitt (1991) and Patel (1995), for instance,  
 47 identify sectors where strengths in one national  
 48 market did not lead to a successful expansion  
 49 abroad. So the question becomes, why is it that  
 50 only *some* industries are global? Or that there  
 51 would be global competition between specific  
 industries between particular groups of countries

1 and not others, which may be otherwise similar in  
 2 terms of their institutional environment? Why  
 3 would it be that *some* types of competitive  
 4 advantage in *some* types of industries would be  
 5 potentially 'internationally leverageable' (whether  
 6 through direct operations within a Multi-National  
 7 Corporation, or through licensing)<sup>3</sup> to the very  
 8 same countries and others would not?

9 The answer to these questions is partial at best.  
 10 The question on the extent of globalization has  
 11 been considered in terms of 'drivers of  
 12 globalization' (Yip and Coundouriotis, 1991),  
 13 such as globalization of customers, markets, and  
 14 support of regulators; yet the question still lingers  
 15 on what drives these drivers; that is, what makes  
 16 some industries have more global competitors.  
 17 Our understanding of this question, of when an  
 18 advantage is 'transferable' or 'translatable' (Yip,  
 19 2003, p. 66) is still limited. In a rare effort to  
 20 address this issue, Hu (1995), expanding Hymer's  
 21 approach, observed that not all sources of  
 22 competitive advantage are transferable on the  
 23 global level. Some advantages are only relevant  
 24 in specific countries and economies, and some  
 25 advantages are hardly transferable. Helpful as this  
 26 observation is, it begs the question of *why* these  
 27 differences exist.

28 This paper provides an alternative, complemen-  
 29 tary approach on the determinants of the pro-  
 30 spects of globalizing and exporting competitive  
 31 advantage. Specifically, I argue that 'institutional  
 32 modularity' at the level of the *sector*—that is,  
 33 compatibility in terms of the nature, structure and  
 34 operation of the value chain, i.e. the vertical  
 35 division of labor,<sup>4</sup> plays a significant role. I argue  
 36 that when such value chain structures are similar  
 37 between different countries, and, more to the  
 38 point, when particular parts of a production  
 39 structure are modular, then global expansion  
 40 may occur. But, more often than not, there are  
 41 substantial international differences in the way  
 42 that industries are organized and in the way labor  
 43 is divided between them.<sup>5</sup> This happens because  
 44 the structure of industries is not identical between  
 45 countries, simply determined by technology alone,  
 46 but rather is the result of path-dependent pro-  
 47 cesses, as has been noted by the 'varieties of  
 48 capitalism' and 'national business systems' litera-  
 49 ture (Whitley, 1992, 1999; Whitley and Kristensen,  
 50 1996; Hall and Soskice, 2001; Morgal *et al.*, 2004)  
 51 as well as sociological analyses of value chains  
 (Gereffi, 2004; Gereffi *et al.*, 2005). As a result, in

1 different countries, the value chain decomposes  
 3 onto different ‘vertical units’, i.e. different ecolog-  
 5 ies of vertically co-specialized participants; and of  
 7 course, in each setting, prevailing norms of  
 9 interaction between firms in general affect the  
 11 vertical division of labor (cf. Nishiguchi, 1994;  
 13 Lane, 1996). Or, to put it in terms of the  
 15 framework recently developed by Peteraf and  
 17 Shanley (1997) and Shanley and Peteraf (2004),  
 19 each industry in each country may be endowed  
 21 with different, and possibly inconsistent ‘vertical  
 23 groups’, through country-specific social generative  
 25 processes.

To substantiate this argument, I first provide  
 15 some evidence on the international differences of  
 17 the structure of the value chain and the role of  
 19 vertical co-specialization; then provide a frame-  
 21 work that explains when firms can or cannot  
 23 expand their competitive advantage abroad, as a  
 25 function of their sectors’ vertical structure at home  
 27 and abroad; and finally turn to an extended  
 29 example from the mortgage banking industry that  
 31 further illustrates these dynamics.

#### 27 THE DIVISION OF LABOR ACROSS 29 VERTICAL BOUNDARIES: PATH- 31 DEPENDENCY OF NATIONAL CONTEXTS

31 The first part of the argument, then, is that  
 33 different countries have different ways of ‘dividing  
 35 labor’ between firms; that is, that the structure of  
 37 the value chain and the resulting identity and  
 39 scope of the participating firms is not technologi-  
 41 cally determined, but rather shaped both by  
 43 differences in the initial conditions (the historical  
 45 ‘starting points’) and by a co-evolutionary process  
 47 that yields a substantial variety of ways to  
 49 organize industries. This leads to pronounced  
 51 differences in the structure of the value chain  
 between countries, even when the final good/  
 services are not too different. This is particularly  
 important as the firms’ capabilities depend on their  
 scope; and if scope differs between national  
 contexts, exporting a superior capability from  
 one setting into another will be a substantial  
 challenge, as it will simply not ‘fit’ the host system,  
 not for lack of broad cultural fit, or compatibility  
 with the legal system or administrative practices,  
 but rather because the nature of the capabilities  
 will be different.

To anchor the theoretical discussion on a  
 1 specific, easy-to-understand example, let us con-  
 3 sider the European construction sector, which, by  
 5 all accounts, serves a remarkably similar purpose  
 7 in all European countries, and which has only  
 9 limited product/service differentiation between  
 11 countries. Yet despite that, European countries  
 13 *differ markedly* in how they organize labor within  
 15 that sector—how the structure of their value chain  
 17 is set (cf. Winch, 1996, 2000; Cacciatori and  
 19 Jacobides, 2005, for a detailed discussion). This  
 21 international divergence of the value chain struc-  
 23 ture is best summarized by this quote that explains  
 25 that even players who, from a distance, seem to  
 27 cover the same spot in the value chain, are really  
 29 quite distinct species:

Although architecte, architect, arkitekt, archi-  
 17 tetto, and Architekt appear to mean the same  
 19 thing, they do so only in a limited sense. All are  
 21 designers of buildings, and all share a common  
 23 root in the Greek architekton, but the historical  
 25 evolution of the contracting systems means that  
 27 their social meanings are very diverse, and that  
 29 even their functional meanings are not coex-  
 31 tensive. The French architecte has a much more  
 33 constrained and limited role in the construction  
 35 process than the British architect; the German  
 37 Architekt has a state-derived role in obtaining  
 39 building permits which the British counterpart  
 41 does not, and so on. In the case of some actors  
 43 such as the German Prufstatiker, the British  
 45 quantity surveyor, and the French bureau de  
 47 controle, there is simply no close comparator in  
 49 other systems. (Winch, 2000, p. 90)

Despite the shared contractual and organizational  
 37 issues involved in procuring buildings, then,  
 39 different countries have different ways to break-  
 41 up activities between segments. Architects, for  
 43 instance, in France, are only involved in the  
 45 concept and design phase, whereas they are also  
 47 involved in detailing in the UK (see Winch, 1996,  
 49 p. 258). This is important not only because  
 51 architects in different European countries have a  
 different remit; but because their competencies are  
 developed to fit that remit, and as such are only  
 specific to their national context. Note that these  
 differences in the vertical organization of the sector  
 are *not* due to differences in the end-product or  
 end-service-buildings and final customer needs are  
 fairly similar. Likewise, needs do not differ much

1 between these countries. Furthermore, note that  
 2 the differences in scope and organization in the  
 3 construction industry are not related to the factors  
 4 that are most commonly investigated when inter-  
 5 national differences are examined: property rights,  
 6 the nature of the labor force, and other country-  
 7 level impacts did not bring about this remarkable  
 8 divergence of organization in European construc-  
 9 tion. Rather, such sector/value chain structure  
 10 differences reflect a path-dependent, co-evolutionary  
 11 process of divvying up the value chain.

12 As Kristensen notes (1996, p. 17), 'national  
 13 types of firms and their institutional context  
 14 change, but because the process of change happens  
 15 through and by nationally patterned relations and  
 16 interactions, nothing ensures convergence'. The  
 17 same also seem to hold for the nature and  
 18 *architecture* of the value chain. Even though there  
 19 do exist some technological or transactional  
 20 imperatives in the 'construction sector' in devel-  
 21 oped countries, which will lead to particular  
 22 'appropriate configurations' in an industry, much  
 23 of the detail and the way in which an industry will  
 24 be broken up in distinct vertical units is a function  
 25 of historical and socially situated processes (Jaco-  
 26 bides, 2005). The extent of these differences, and  
 27 the strong path dependencies that they lead, can be  
 28 seen in recent initiatives of the European Union.  
 29 Frustrated by the lack of inter-EU internationaliza-  
 30 tion of construction companies, the European  
 31 Commission has tried to encourage harmonization  
 32 that would lead to greater international activity.  
 33 Yet these active efforts to *subsidize* or at least  
 34 support global expansion have been stymied by the  
 35 national specificities of the division of labor  
 36 (Winch, 2000, p. 95).

37 The nature of this path-dependent process, more  
 38 fully developed in Jacobides (2005) and Jacobides  
 39 and Winter (2005), requires a brief description. In  
 40 summary, the structuring of a sector generally  
 41 looks as follows: first, the underlying conditions of  
 42 the industry (i.e. the similarity of the knowledge  
 43 bases along different parts of the value chain, and  
 44 the related latent gains from trade from the  
 45 emergence of vertical specialization) lead to a  
 46 process of intra-organizational separation and  
 47 inter-organizational learning which aims to divide  
 48 the structure of the value chain. The way in which  
 49 an industry is broken up, the way in which labor is  
 50 tentatively divided between industry participants,  
 51 is affected by the nation-wide 'business system'  
 (Whitley, 1992, 1999; Guillén, 1994; Djelic, 1998),

and the patterns of interaction in the society at  
 large (Whitley and Kristensen, 1996). Then, as the  
 options of dividing the value chain and instituting  
 new intermediate markets becomes clearer, as new  
 potential roles for the set of participants in the  
 industry are being shaped, there is substantial  
 jockeying for the different set of actors who try to  
 ensure that they get an 'attractive' part of the value  
 chain. Participants try to support regulation and  
 institutions that support, enhance and entrench a  
 division of labor that protects them (cf. Shell,  
 2003, Chapters 2–3), and as such tend to create a  
 substantial inertial force. It takes either a new  
 technology, or de novo entry of a different 'system'  
 of organizing the industry (domestically or glob-  
 ally) to make the industry structure shift.

The implication of this analysis is that the  
 specific way in which an industry is divided in  
 vertical segments, the identity of the participant  
 firms and the nature of capabilities of the firms in  
 each segment (and the resulting per-segment  
 profitability) is not determined exogenously, or  
*ex ante*. Rather, it is the result of an active effort of  
 industry participants to shape their own industry's  
 structure. As these 'contests' for divvying up the  
 industry happen at the level of a nation, and the  
 supporting institutions and regulations, as well as  
 the other participants of the business ecosystem  
 are largely in the same country, international  
 differences will persevere. Furthermore, after a  
 particular way to organize the different sets of  
 industry participants (in terms of scope, definition  
 of their role, etc.) is set, the nation-wide institu-  
 tional context begins to solidify, largely affected by  
 the interests of those who stand to gain the most  
 out of this structure, thus solidifying the structure  
 of the industry and creating inertial forces to keep  
 the industry structure set. In the construction  
 example, it was the Architects who 'won' the battle  
 for the division of labor in construction in the UK  
 (Ball, 1988); they managed to set the architect role  
 and scope in a way that allowed them, at least until  
 recently, to have the highest share of value added.  
 In France, by contrast, the engineers managed to  
 carve out a better position in the industry. The  
 success of architects in the UK is at least partly  
 due to their connections with the landed gentry,  
 and their ability (through the gentry and the  
 House of Lords) to promulgate regulations sup-  
 porting their role; while in France the tradition  
 of engineering evident from the time of the  
 French revolution, and the prominence of the

1 engineering-dominated *Grandes Ecoles* helped the  
 2 engineers, and created the context for the institu-  
 3 tionalization of this role. Both in the UK and in  
 4 France, the outcome was not pre-ordained, but  
 5 rather the result of a path-dependent process.  
 6 Thus, a combination of local historical factors,  
 7 and the relative success of different groups in  
 8 shaping their industry's structure led to markedly  
 9 different ways of dividing the labor in an industry,  
 10 to different scope, and, as a result of this different  
 11 scope, to different capabilities as well (Cacciatori  
 12 and Jacobides, 2005).

13 Thus, each country has a distinct evolutionary  
 14 trajectory in each industry where capabilities,  
 15 scope, and the institutional context interact and  
 16 shape the nature of the participants, leading to the  
 17 creation of fairly distinct 'vertical groups' (Shanley  
 18 and Peteraf, 2004) along the way. It is exactly these  
 19 inter-national differences in the nature of these  
 20 'vertical groups' in otherwise identical industries  
 21 that hamper the exportability of competitive  
 22 advantage. And it is these differences at *the*  
 23 *industry and value chain structure* which have not  
 24 received any real attention to date, and which are  
 25 the basis of this paper's contribution to the  
 26 literature.

### 29 CAPABILITIES, TRANSACTION COSTS AND 30 INSTITUTIONAL MODULARITY: SHAPING 31 GLOBALIZATION PROSPECTS

32 Let us recapitulate. So far, the argument is that the  
 33 way labor is divided in national contexts is not  
 34 only determined by technological imperatives.  
 35 Differences in the managerial structures along  
 36 different parts of the value chain do provide the  
 37 basic blueprint in terms of the scope of the  
 38 industry's boundaries; that is, differences or  
 39 similarities along the industry's value chain, or  
 40 set of activities do provide a set of likely  
 41 boundaries which 'make sense' in terms of effective  
 42 management and effective competency develop-  
 43 ment (Shanley and Peteraf, 2004; Jacobides and  
 44 Winter, 2005; also, see Jacobides, 2006). For  
 45 instance, the existence of an artistic component,  
 46 a measurement component, an engineering com-  
 47 ponent, and an economic study/feasibility and  
 48 follow up component suggest that the construction  
 49 industry would benefit from the existence of  
 50 different firms along the value chain. Yet the exact

1 nature of these firms, the places where the 'dotted  
 2 lines' that will cut the industry into inter-connected  
 3 pieces, are not given exogenously (Baldwin and  
 4 Clark, 2003). These emerge as a part of an  
 5 endogenous process, which, on the basis of the  
 6 local conditions, leads to the creation of particular  
 7 intermediate markets and vertical segments which  
 8 are vertically co-specialized (Jacobides, 2005). This  
 9 process happens by trying to reduce the potential  
 10 transaction costs (Williamson, 1985), through a  
 11 learning process (Argyres and Liebeskind, 1999;  
 12 Mayer and Argyres, 2004), in a way that supports  
 13 a particular industry structure. These processes  
 14 happen most often at the national level, with firms  
 15 trying to co-specialize and take advantage of each  
 16 others' productive capabilities (Jacobides and Hitt,  
 17 2005); they thus create templates, reinforced and  
 18 sanctioned by regulators, that lead to the country-  
 19 specific division of labor.

20 On the basis of the existing vertical segments  
 21 and co-specialized participants in the industry,  
 22 firms develop their own capabilities.<sup>6</sup> These  
 23 capabilities, though, are critically dependent on  
 24 this context, in two ways. First, scope prescribes  
 25 organization and also the nature of capabilities.  
 26 Take the architect example. In the UK, where  
 27 architects are active in detailing (i.e. translating  
 28 designs into specific guidance for buildings) in  
 29 addition to concept and design, their capabilities  
 30 develop in different ways than those in France,  
 31 where architects focus on concept and design only;  
 32 and it may be the case that UK architects cannot  
 33 work well in the French system because their  
 34 competencies in concept and design are insepar-  
 35 able from the ones in detailing. So it is not even the  
 36 case that a firm with a wider scope will be able to  
 37 fare well in a country where its remit will be more  
 38 limited; as in the other country the demands will  
 39 be *qualitatively different*.<sup>7</sup> So the scope of parti-  
 40 cular types of firms may make them implausible  
 41 candidates for global expansion, given the strong  
 42 correlation between capabilities and scope. Other-  
 43 wise put, if the capabilities along the value chain  
 44 are not *modular*, if they are integral, then there will  
 45 be a substantial compatibility problem. Only if the  
 46 capabilities in the value chain are truly modular,  
 47 will an architectural practice in the UK be able to  
 48 expand in France, by virtue of its mastering the  
 49 relevant sub-part of the value-adding activities.

50 In addition to the modularity in terms of the  
 51 productive capabilities along the value chain,  
 another major issue is co-specialization along the

value chain, and the fact that often the capabilities that firms have in one part of the value chain critically depends on the capabilities developed by the other, vertically co-specialized firms in the same sector and the same country. This point has received a fair share of research, albeit in the particular context of Japanese firms (mostly, automotive assemblers) expanding to the US. As Pil and MacDuffie (1999, p. 60) note, 'suffice it to say that the capabilities of a plant reside to some degree in the strengths of its relationships with the suppliers and in the abilities of those suppliers.' Kenney and Florida (1993), who carefully documented the expansion of Japanese firms to the US, noted that successful expansion abroad

combines the transfer of work and production organization within the plant with the simultaneous transfer of broader *interorganizational relationships* between plants and their parts suppliers. This is having a powerful effect in the broader environment and is creating a whole new and supportive environment for the Japanese system of production.

Toyota, broadly hailed as the most successful example of global expansion of a Japanese firm, spent a fair amount of time training its suppliers to interact with in the same way that the suppliers at

home did. This, in effect, suggests that even when the division of labor in a sector does not differ that markedly between countries (as is the case in automobiles), a fair amount of the competitive advantage a firm has resides in the way in which it interfaces with other participants in a sector, and also possibly with the exact nature and capabilities of the participants in that sector. Therefore, for global expansion to be successful a firm must either occupy an *institutionally modular* position in a specific sector's value chain, i.e. it must be neatly separated from the other industry participants in easy-to-replicate relations; *or*, alternatively, it must be able to reproduce the same (or substitute) structures along the host country's value chain, inasmuch as these structures drive its advantage.

These two simple but fundamental observations constitute the heart of the argument and the value-added of this paper. Figure 1 provides a  $2 \times 2$  matrix that examines the implications of modularity in terms of capabilities/areas along the value chain, and institutional modularity. More formally defined, modular capabilities exist whenever firms in an industry that span more than one stage of the production process can neatly separate the capabilities in each of the constituent parts of the production process. To return to the example of architects in the UK, modular capabilities would mean that the capabilities in design are separable

<p><b>Institutionally Modular</b></p> <p>No critical non-substitutable links within the sector</p>	<p><b>Need to "impose" scope or change</b></p> <p>Will require adaptation of hosts</p>	<p><b>Exportability straightforward</b></p> <p>given firm's module "fits"</p>
<p><b>Institutionally Non-Modular</b></p> <p>Dense linkages specific to the country and sector</p>	<p><b>Exportability problematic</b></p> <p>Calls for systemic adaptation / change</p>	<p><b>Need to replicate or substitute chain</b></p> <p>e.g. Japanese transplants</p>
	<p><b>Integral Capabilities</b></p> <p>Cannot separate &amp; choose part of sector</p>	<p><b>Modular Capabilities</b></p> <p>Can pick and choose where to expand</p>

**Figure 1.** A simple typology of sectors: identifying attributes that determine exportability of competitive advantage.

1 from the capabilities of detailing, in that a firm  
 3 with strong capabilities in both detailing and  
 5 design can replicate its advantage even if it focuses  
 7 only in design or only in retailing. This is  
 9 important, as it may well need to restrict its scope  
 11 to, say, expand to France, and the question is  
 13 whether its superiority is dependent on its entire  
 15 system, or, in contrast, if it can pick and choose a  
 17 segment, and replicate its capability in a stand-  
 19 alone, more focused (and appropriately calibrated)  
 21 unit. Institutional modularity, on the other hand,  
 23 examines the way in which a firm fits in the value  
 25 chain/sector of the country where it operates.<sup>8</sup> The  
 27 question here becomes, can a firm expand into a  
 29 different setting, or is its success so dependent on  
 31 local, non-modular, non-substitutable connections  
 33 that it needs to either replicate the entire system or  
 35 change the host structure to make it mirror its own  
 37 home structure? As we saw in the example of the  
 39 Japanese automobile assemblers, their advantage  
 41 was non-modular, in that to succeed, they needed  
 43 to replicate the same tight linkages with other  
 45 parts of the value chain, linkages that may well not  
 47 be the norm, or perhaps require complementary  
 49 inputs and services that are not available in the  
 51 host country.

On the basis of these two factors, then, we can  
 examine the impacts of modularity (in terms of  
 institutional/vertical structure of the value chain,  
 and in terms of different capabilities along that  
 chain). In the top right-hand corner, both cap-  
 abilities and institutional structure are modular: in  
 this case, global expansion would be most easy.  
 For this particular quadrant, the analysis of the  
 extant literature applies full force: success in global  
 expansion is determined by the balance between  
 the competencies/competitive advantage of the  
 firm that wants to expand, as judged against the  
 difficulties for adapting in the host country (in  
 terms of the overall institutional environment.)

In the upper left-hand quadrant, firms do not  
 critically depend on their local institutional en-  
 vironment, but their own capabilities are systemic.  
 This is a problem inasmuch as the scope of the  
 activities in the firm with an advantage is broader  
 than the relevant segment in the recipient/host  
 country. For instance, if the design advantage of  
 UK architects were to be dependent on their  
 detailing skills, and if detailing is undertaken there  
 by construction firms, there would be a problem,  
 as this would rule out the expansion on only the  
 design segment—if design is integrally linked to

1 detailing. The answer might be to expand on *all* of  
 3 the integrally related, non-modular parts of the  
 5 sector; but this poses a fresh set of problems. For  
 7 instance a UK practice might try to expand on  
 9 design *and* detailing, but it would face the  
 11 problems of creating a new, more integrated  
 13 offering. This would not find a ready set of co-  
 15 specialized construction firms that would willingly  
 17 give up part of the production process, nor of  
 19 buyers who would change their ascribed role for  
 21 architects in the building process (cf. Cacciatori  
 23 and Jacobides, 2005). This is not an insurmount-  
 25 able problem, but success in global expansion in  
 27 that case requires the re-organization in the local  
 29 industry structure and the creation of the appro-  
 31 priate and appropriately qualified (and willing) co-  
 33 specialized partners. So in this quadrant, success in  
 35 global expansion is more difficult, and critically  
 37 relies on securing support from the vertically  
 39 related segments, as well as educating the local  
 41 firms or buyers in applying this new ‘business  
 43 model’.

The lower right-hand quadrant represents the  
 inverse problem—namely, the situation whereby  
 firms do have modular structures, but where they  
 are not modular in terms of their relationships  
 along the value chain, or on their reliance of  
 particular, country-specific inputs or services. This  
 is the situation of the Japanese automobile  
 manufacturers, who require a particular way of  
 organizing their relationships along the value  
 chain to succeed, and also critically rely on the  
 capabilities of their key suppliers. This means that  
 in order to succeed in global expansion under these  
 constraints, a firm must work to ensure it can get  
 the same type of interactions along the value chain  
 (as Toyota did), or bring in the requisite com-  
 plementary goods and services<sup>9</sup>; or, alternatively, a  
 firm can try to modularize its position (Baldwin  
 and Clark, 2000, 2003), effectively moving to the  
 upper right-hand-side quadrant, by safeguarding  
 as much of its advantage as possible.

Finally, the lower left-hand-side corner repre-  
 sents the difficulties of both the previous cases, and  
 is a good example of a very tightly embedded  
 organization of production, which will be difficult  
 to expand—except if there can be a full, wholesale  
 replication of the structure.

Imperfect as any simple categorization scheme  
 might be, this 2 × 2 matrix has the benefit of  
 shifting attention to the structure of the industry/  
 sector, and of how this affects the prospects of

1 global expansion. Casual empiricism would sug- 1  
 2 gest that there are substantial differences in the 2  
 3 degree of globalization in different sectors, and the 3  
 4 extent of modularity as well as the international 4  
 5 consistency (or lack thereof) on the structure of 5  
 6 these industries may well account for a big part of 6  
 7 this. Otherwise put, whereas there are some sectors 7  
 8 which are organized in a similar way in different 8  
 9 countries, and sectors where both capabilities and 9  
 10 the institutional structure is more modular, this is 10  
 11 not the norm. And the extent to which such 11  
 12 modularity and inter-national value chain consis- 12  
 13 tency prevails may be a robust predictor of 13  
 14 globalization. This may indeed be the reason why 14  
 15 services, which can be 'sliced and diced' in many 15  
 16 different country-specific ways, have been con- 16  
 17 spicuously slower to globalize than product-based 17  
 18 industries (or even service-based but asset-inten- 18  
 19 sive services like telecommunications and energy). 19

20 The last part of the argument is that managers 20  
 21 tend to under-estimate systematically the impact 21  
 22 of the institutional and capability modularity. It 22  
 23 appears that compatibility and 'fit' with the host 23  
 24 country's own value chain is hard to detect *ex ante*, 24  
 25 and this leads to unexpected adaptation costs. I 25  
 26 illustrate such problems caused by managerial 26  
 27 myopia, as well as the problems caused by 27  
 28 differing vertical/value chain structures by con- 28  
 29 sidering an important service industry, mortgage 29  
 30 banking, and by examining the challenges in 30  
 31 global expansion in this sector. 31

### 32 33 34 35 **CO-SPECIALIZATION, FIT AND** 36 **MODULARITY: GLOBAL EXPANSION OF** 37 **US MORTGAGE FINANCE FIRMS**

38 Mortgage banking provides a convenient setting in 38  
 39 which to study global expansion. In the context of 39  
 40 a much broader analysis of the US mortgage 40  
 41 banking, which focused on understanding the 41  
 42 dynamics of value chain evolution and market 42  
 43 creation (Jacobides, 2005), I also examined the 43  
 44 challenges that US firms faced in expanding 44  
 45 abroad. This allowed us to engage in the in-depth 45  
 46 qualitative research that inspired the framework 46  
 47 discussed in this paper. 47

48 The selection of the industry was predicated 48  
 49 upon its importance, and the recent interest in of 49  
 50 industry participants and regulators in globaliza- 50  
 51 tion trends. Mortgage-related instruments repre- 51

1 sent one of the most important classes of financial 1  
 2 assets in the world. In the US, outstanding 2  
 3 mortgage loan pools exceeded \$4.6 trillion 1997, 3  
 4 which was almost equal to the value of all US 4  
 5 Government debentures (i.e. Treasury Bonds and 5  
 6 Bills—cf. Federal Board of Reserves, 1998; MBA/ 6  
 7 OFHEO, 1998). The Mortgage Banking (MB) 7  
 8 sector has also seen significant change in the last 8  
 9 few years, and, more importantly perhaps, inter- 9  
 10 national expansion of much acclaimed US-based 10  
 11 firms has started becoming a trend (MBA, 1997; 11  
 12 Erb, 1998).

13 Specifically, I entered into a two-level empirical 13  
 14 analysis, in order to understand the particularities 14  
 15 of global strategies and opportunities for expan- 15  
 16 sion of US-based firms. The first level was a 16  
 17 comparative international assessment of the struc- 17  
 18 ture of the industry, done in association with the 18  
 19 Mortgage Bankers Association of America, which 19  
 20 supported this work. The second level consisted of 20  
 21 taking a sample of highly visible moves of US 21  
 22 mortgage banking firms that were investing 22  
 23 abroad, including HomeSide, Irwin Finance, 23  
 24 Residential Finance Corporation (owned by 24  
 25 GM), EDS, and Fannie Mae. I then proceeded 25  
 26 to an in-depth investigation: to establish the 26  
 27 challenges and problems involved in successful 27  
 28 global expansion in that industry, three Research 28  
 29 Assistants interviewed executives from five ven- 29  
 30 tures, and collected semi-structured notes. These 30  
 31 were then reviewed by the author, who made 31  
 32 further contacts with executives involved in these 32  
 33 ventures. A thorough discussion of the sector 33  
 34 and the evidence can be found in Jacobides (2005); 34  
 35 here I selectively use some data for illustration and 35  
 36 not for support or proof of the theoretical 36  
 37 argument. 37

38 So let us consider this setting-mortgage finance, 38  
 39 as it evolved in the US, and the resulting 39  
 40 institutional structure of the sector. To begin with, 40  
 41 the final product/service: A mortgage is a loan 41  
 42 collateralized by real estate. To make such a loan 42  
 43 possible, a lender must be able to find a borrower 43  
 44 who needs a mortgage. Roughly speaking, to make 44  
 45 a mortgage possible, either one integrated firm or a 45  
 46 series of vertically co-specialized firms linked 46  
 47 though the market must ensure that the following 47  
 48 happens: (1) lenders with excess funds are found; 48  
 49 (2) borrowers willing to take a loan are found and 49  
 50 steered to the appropriate loan type; (3) borrowers 50  
 51 are analyzed for their credit-worthiness, the value 51  
 of their collateral, etc., and are guided through the

1 paperwork associated with the mortgage—ensur- 1  
 3 ing titles, deeds, and all other legal requirements 3  
 5 are taken care of; (4) the loan is closed, and the 5  
 7 transaction consummated and recorded; (5) the 7  
 9 loan is serviced for the duration of its length, 9  
 which means receiving payments from the bor-  
 11 rower and managing the account until it is paid off  
 13 or, alternatively, engaging in foreclosure if neces-  
 15 sary; and (6) payments are made to the lenders or  
 17 other providers of capital.

11 These six different functions were originally 11  
 13 performed in integrated institutions, in particular, 13  
 in retail banks, which maintained mortgage loans,  
 15 or savings and loan associations (S&Ls), which 15  
 17 focused more on mortgages. For both of these 17  
 19 integrated types of firms, liquidity was largely 19  
 21 provided by the short-term deposits of retail 21  
 23 customers. On the basis of the liquidity created 23  
 25 by deposits or through the corporate lending these 25  
 27 institutions would engage in, the loans would be 27  
 29 funded (Lederman, 1985; Fabozzi and Modigliani, 29  
 31 1992). Banks and S&Ls also sought out the 31  
 33 mortgage loan applicants; they would prepare 33  
 35 and process applications, and they would service 35  
 37 the loans until they expired. This was the earlier, 37  
 39 integrated version of the industry.

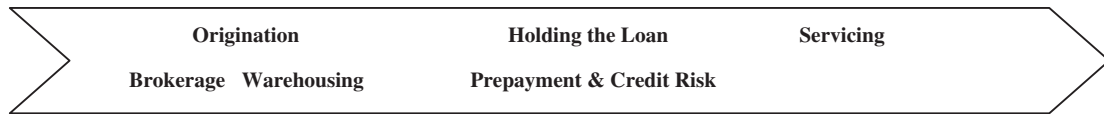
27 Mortgage banking, though, started vertically 27  
 29 dis-integrating, creating new markets, from the 29  
 31 early 1970s onwards. The same functions noted 31  
 33 above started being performed by specialized 33  
 35 institutions, each with a narrow vertical scope. 35  
 37 While the functions and the basic steps in the 37  
 39 production process of a loan did not change, the 39  
 41 vertical structure of the industry did. With it, the 41  
 43 types of industry participants and the nature of 43  
 45 competition also changed. By the mid-1990s, each 45  
 47 function could be performed by a vertical specia- 47  
 49 list: finding mortgage borrowers and steering them 49  
 51 to the appropriate loan was done by new 51  
 53 specialists, called mortgage brokers. Mortgage  
 55 banks, in turn, would focus on closing (finalizing)  
 57 loans, funding them, and then servicing them.  
 59 They held no deposits, nor did they seek funding  
 61 for the loans through the capital markets. Instead,  
 63 they would ‘warehouse’ the loan until they could  
 65 sell the underlying asset (the mortgage loan itself)  
 67 to new specialists, the ‘securitizers,’ who would  
 69 then take it upon themselves to find the lenders to  
 71 fund these loans. To fund the loans, mortgage  
 73 banks used lines of credit, i.e. working capital that  
 75 they obtained from commercial banks so as to  
 77 enable them to warehouse the loans until they were

1 sold to securitizers. Then, securitizers, having 1  
 3 purchased individual loans from several different 3  
 5 mortgage banks, would bundle loans together and 5  
 7 then turn them into securities (unbeknownst to the 7  
 9 borrowers whose loans were being securitized) and 9  
 11 sell these Mortgage-Backed Securities to the 11  
 13 capital markets, earning fees on the securities they 13  
 15 produced (Fabozzi and Modigliani, 1992). Later, 15  
 17 some specialized mortgage banks focused more on 17  
 19 servicing, others on originating loans. This break- 19  
 21 up of the value chain was specific to the US, and 21  
 23 led to the creation of particular boundaries, and 23  
 25 particular type of capabilities in the industry. 25  
 27 Figure 2 provides a view of the US sector.

15 Whereas there might have been some drivers 15  
 17 that can help explain why the industry dis- 17  
 19 integrated (see Jacobides, 2005), it is important 19  
 21 to note that there was no inevitability as to the 21  
 23 shape and structure of the industry. The evolu- 23  
 25 tionary process that led to the current structure 25  
 27 through the endogenous reduction of transaction 27  
 29 costs and the related inter-firm vertical co-specia- 29  
 31 lization could have led to a different way of 31  
 33 organizing labor in this sector. Indeed, by compar- 33  
 35 ing the US structure to that of other countries in a 35  
 37 similar level of development, it appears that this is 37  
 39 a very particular and unusual structure of the 39  
 41 industry. Even in the UK, which is similar to the 41  
 43 US in many dimensions, especially in its financial 43  
 45 system, mortgages are still provided in a much 45  
 47 more integrated way.<sup>10</sup> Finally, I should note that 47  
 49 the structure of the sector also has a strong bearing 49  
 51 on the capabilities that were developed in different 51  
 53 parts of the industry; and that while the sector  
 55 consisted of different vertical segments, there the  
 57 sector was not institutionally modular: rather,  
 59 these vertical specialists were co-dependent and co-  
 61 specialized.

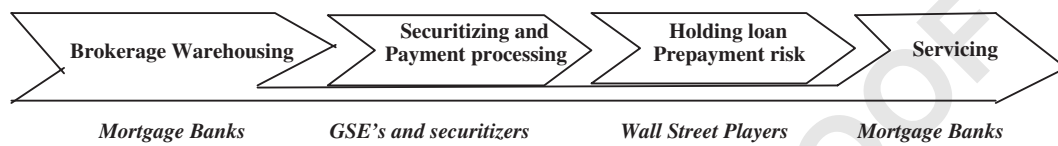
39 One last piece of evidence of the path depen- 39  
 41 dency of the value chain structure at the national 41  
 43 level, both with regards to firm scope and with 43  
 45 regards to the related capabilities in the industry 45  
 47 comes from the comparison of the US with other 47  
 49 systems that have taken the path of securitization. 49  
 51 While space precludes going into the technical 51  
 53 details, I should note that in Denmark and  
 55 Argentina, where secondary mortgage markets  
 57 have been (more or less recently) instituted,  
 59 practices, the structure of the value chain and the  
 61 nature of the players do not neatly map onto those  
 63 in the US (MBA, 1997). Whereas the financial  
 65 products—mortgage-backed securities and col-

Original Structure: Integrated Housing Finance Provision

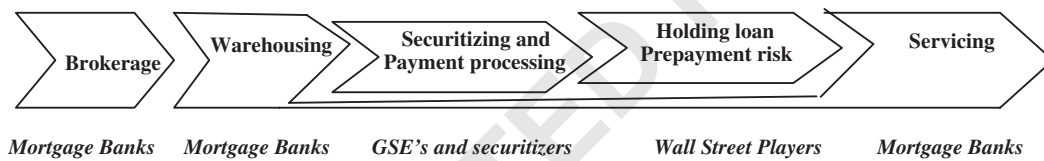


*Integrated Banks and Savings & Loans*

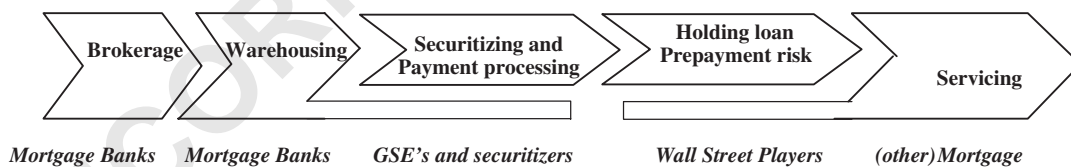
First Value Chain Change - Securitization and Secondary Market for Loans (1978=> 1988)



Second Value Chain Change: Creation of Broker Segment (1983=> 1987)



Third Value Chain Change – Creation of Market for Mortgage Servicing Rights (1989=>1993)



**Figure 2.** An illustration: the dis-integrating mortgage banking sector (from Jacobides, 2005).

lateralized mortgage obligations on the secondary market, and mortgage products on the primary market—are similar, the division of labor between different firms and the relations between them are not (Diamond and Lea, 1992; MBA, 1997; Erb, 1998).

Be that as it may, by the late 1990s it has become clear that the US mortgage system was very competitive, and that the vertically dis-integrated

system has produced substantial efficiencies. More to the point, US based mortgage banks measured themselves against the equivalent integrated firms in other countries and they became convinced they were superior in several parts of the mortgage process. Mortgage executives I met echoed the industry press by noting that: they were considerably faster; could make profits with much smaller spreads between cost of funds and interest

1 received; had lower fees for both origination and  
 3 servicing; and that even if one was to factor in the  
 5 inefficiencies related to infrastructure or regulatory  
 7 barriers in other countries, they did expect to be  
 9 more efficient and more profitable than local firms,  
 11 which they considered 'inefficient'. As such, several  
 13 participants in the industry predicted that global  
 15 expansion would happen as soon as the regulation  
 17 in potential host countries would enable the  
 19 function of such types of organizations (Diamond  
 21 and Lea, 1992; Erb, 1998). Simply put, industry  
 23 participants as well as analysts expected that US  
 25 companies would be leveraging their competence,  
 27 which was developed both as a result of the highly  
 29 competitive market, and the vertical breakup of  
 31 the sector, on an international basis (Lasko, 1998).  
 33 However, despite some expansion, no dramatic  
 35 changes have been witnessed yet (Erb, 1998); more  
 37 to the point, firms that have tried have largely  
 39 failed. What is more intriguing is that they did not  
 41 expect to fail quite as badly.

#### 25 PROBLEMS IN GLOBAL EXPANSION, 27 ILLUSTRATED: VALUE CHAIN FIT, 29 MODULARITY AND MANAGERIAL 31 MYOPIA

33 From this analysis of both some (few) relatively  
 35 successful moves of US firms abroad, and of the  
 37 more frequent horror stories (re-cast as stories of  
 39 strategic re-deployment or bad luck from some of  
 41 the managers I spoke to) a few general themes  
 43 emerged, which largely support (and partly in-  
 45 spired) the framework developed in the previous  
 47 section. In addition to showing the role of co-  
 49 specialization and lack of institutional modularity,  
 51 it also enabled us to refine our understanding of  
 the challenges of expanding abroad when value  
 chain structures do not neatly fit.

One of the most important predictors of failure  
 in efforts to expand globally was the role of co-  
 specialized industry participants in the host value  
 chains; in other words, it was the fact that, despite  
 the substantial degree of vertical specialization, the  
 US mortgage banking industry is not institution-  
 ally modular. Rather, it consists of a tightly inter-  
 dependent system of different types of institutions,  
 whose advantage is dependent on the function of  
 the system as a whole. What is even more  
 interesting, is that managers seemed to have been

surprised and taken aback by the role that this co-  
 specialization played; it was so deeply engrained in  
 their normal, home environment, that it generally  
 did not occur to them to wonder in advance which  
 of these co-specialized players would exist; and  
 also they did not expect that their advantage could  
 so easily be eroded by the problems in linking with  
 other parts of the value chain. Two examples—the  
 expansion of Irwin Mortgage in Mexico in the  
 mid-1990s and the acquisition of HomeSide  
 by National Australia Bank—illustrate these  
 dynamics.

By the early 1990s, Irwin, a major mortgage  
 bank, was in a solid growth path and decided to  
 try its hand at global expansion. It also thought it  
 had identified the major difficulty in terms of  
 global expansion vis-à-vis its local competitors,  
 which was the risks in identifying the credit  
 worthiness of the potential borrowers. Its solution  
 was simple: it decided it would follow, as it were,  
 the US and Canadian customers who wanted to  
 get loans for properties in Mexico. In this way, it  
 could operate even in an environment with strong,  
 non-modular links between the final customers  
 and the providers of a service.<sup>11</sup> However, some  
 additional links in assessing properties were not  
 established; there was no firm that could provide  
 adequate information in terms of the properties  
 that were mortgaged. For instance, Irwin drasti-  
 cally limited the market as it had to accept only the  
 customers that did not substantially under-report  
 property value to tax authorities. Given that in the  
 Mexican tax system, heavy taxes (as high as 10%)  
 are levied at the time of property transfer, it has  
 become common practice to mis-report property  
 values during transactions. As Irwin calculates its  
 Loan-To-Value (LTV) ratio on the basis of that  
 information, its loans become less than competi-  
 tive for those engaging in value/cost misrepresen-  
 tation.<sup>12</sup> When Irwin asked its clients to disclose  
 the property value in order for them to qualify for  
 their loan, it found out that few in Mexico would  
 state the actual transaction price for the purchase.  
 A host of other difficulties in terms of the use of  
 brokers also plagued Irwin, who realized that  
 operating in a different industry structure meant  
 that it would be very hard to reap any of the  
 efficiencies it could reap at home. There were no  
 other vertical specialists (e.g. appraisers) to sup-  
 port its operation, as there would be in the US.  
 The co-specialized providers that might otherwise  
 be relied on were not there, and neither could

1 Irwin link to customers in quite the way it was  
 2 used to.<sup>13</sup> Finally, it is important to note that these  
 3 were painful observations, and that experienced  
 4 mortgage bankers had not fully anticipated such  
 5 issues *ex ante*.

6 Another example comes from the acquisition of  
 7 HomeSide, a very successful US mortgage bank,  
 8 particularly capable on the servicing side of the  
 9 business, by the National Australia Bank (NAB),  
 10 which thus wanted to import HomeSide's cap-  
 11 abilities and improve the efficiency of the mortgage  
 12 operations of the bank. When NAB tried to  
 13 leverage HomeSide's competencies, capabilities  
 14 and systems in Australia, one of the key problems  
 15 was that credit reporting there was vastly different  
 16 from that in the US. In the US, credit rating  
 17 companies have developed jointly with the users of  
 18 these data; credit scoring agencies such as Fair  
 19 Isaac have emerged that allow for a seamless use  
 20 and evaluation of credit information. In Australia,  
 21 on the other hand, credit reporting was only used  
 22 for tracking down those who default; so there may  
 23 be good information for potential buyers of 'C' or  
 24 'D' mortgage/paper, but almost nothing on the  
 25 'A's', or 'A+'s, 'A-'s' or marginal 'B's'. Hence  
 26 the infrastructure that US companies have come to  
 27 depend on, all the specialized means they have for  
 28 interpreting credit information as a key criterion  
 29 for deciding their lending policies, were close to  
 30 irrelevant. Thus, the plan fell prey to the co-  
 31 specialization of HomeSide to the US system, and  
 32 the lack of an effective local institutional sub-  
 33 stitute.

34 Furthermore, there were concerns with the  
 35 structure of the productive capabilities of Home-  
 36 Side. Ironically enough, the very dissociation of  
 37 the origination/evaluation and underwriting pro-  
 38 cess, so commonplace in the US, is problematic in  
 39 the absence of reliable information about under-  
 40 lying risks, since it does not allow for the good  
 41 relaying of information on customer creditworthi-  
 42 ness on the basis of servicing experience. This also  
 43 made the systems used by HomeSide hard to apply  
 44 to Australia; the neat separation of the mortgage  
 45 process in the US was partly predicated on the  
 46 existence of good credit rating information. Thus,  
 47 the US-type modular productive capabilities in  
 48 servicing and in origination did not apply to the  
 49 Australian market; they were not appropriate in  
 50 the Australian context which was still in need of a  
 51 more integrated system that could transmit in-  
 formation internally from servicing to origination

1 and vice versa. Again, management had not  
 2 anticipated the problems caused by the fact that  
 3 the modular capabilities of HomeSide did not map  
 4 onto the integral system required in Australia, and  
 5 this surprise was one of the reasons for which this  
 6 very sizable acquisition was eventually deemed a  
 7 failure (see Tschoegl, 2000, on why NAB even-  
 8 tually sold HomeSide).

9 Generalizing across cases, we observe that co-  
 10 specialization in the value chain is important  
 11 particularly *because* we take it for granted;  
 12 business executives could not even conceive of  
 13 the nature of the problems they encountered. They  
 14 do not look at either the institutional modularity  
 15 (as in the case of Irwin); nor at the nature, scope,  
 16 or modularity of competencies (as in the case of  
 17 HomeSide/NAB). The business model in the US  
 18 runs so smoothly that executives did not quite  
 19 realize the impressive interweaving of services,  
 20 infrastructure and regulations that allows the  
 21 industry to be effective. Neither can they see the  
 22 impact of different capability structures; they just  
 23 assume that 'superior capabilities' is all that  
 24 matters.

25 This problem is further accentuated by the fact  
 26 that the costs (in real terms) for under-estimating  
 27 institutional or capability modularity, or lack of fit  
 28 between home and host value chain structure,  
 29 dramatic as they may be, are very hard to  
 30 quantify, whereas the potential gains or efficiency  
 31 differential between one country and another may  
 32 be misleadingly easy to measure. So executives  
 33 seemed to be lured by the prospects of real gains,  
 34 into countries they *did* know, culturally and  
 35 administratively. Yet, importantly, managers seem  
 36 to underestimate the role of institutional differ-  
 37 ences, as they unwittingly carry the conceptions of  
 38 their own countries and settings. And the more  
 39 superficially similar the settings appear, and as  
 40 such the greater the presumed benefits, the bigger  
 41 the surprise of the managers who try to adapt.

42 In a practical sense, then, looking at the nature  
 43 of the value chain takes us away from the  
 44 generalist preoccupation with macro-trends. In-  
 45 deed, in the discussions on global expansion, we  
 46 saw a strong interest in general macro-economic  
 47 and demographic trends, or perhaps product  
 48 structure (Armijo *et al.*, 1990), to the detriment  
 49 of the structural, value chain issues that often  
 50 proved more important. Mexico's high demand for  
 51 new housing, or its overall cultural fit with the US,  
 or administrative habits may be less important

1 than new regulation that allows institutional  
 3 investors in Mexico to invest in securitized  
 5 mortgages, for instance. This is not to downplay  
 7 the role of the country-level factors that have been  
 9 studied to date; rather, it is to stress that it is the  
 more specific, institutional structures, and the  
 degree of *fit*, *institutional* and *competence mod-*  
*ularity* that determine the exportability and  
 relevance of US mortgage banking skills.

11 Finally, some of the more successful global  
 13 moves were those that explicitly took into account  
 15 the importance of the value chain structure. Some,  
 17 such as General Motor's finance subsidiary  
 Residential Funding Corporation (RFC), tried to  
 blend in the local market by identifying how to  
 best integrate in the local value chain; this was  
 facilitated by local M&A (in RFCs case, the  
 purchase of Auritec SA).

19 Perhaps the most interesting strategy is one  
 21 followed by firms such as Electronic Data Systems  
 (EDS) or securitizers such as Fannie Mae and  
 Freddie Mac. These companies focus on their  
 23 ability to provide infrastructure to changing  
 25 markets, and predicated their strategy upon  
 27 ensuring that the *value chain itself* was shaped in  
 a way that will allow them to capitalize on their  
 efficiency. This strategy, which brings to mind  
 strategies of important infrastructure firms such as  
 29 Bechtel Corp. or Hutchinson, ensures that other  
 national structures become increasingly like the  
 31 ones in their home market, and this permits them  
 to export their expertise. In other words, these  
 33 firms, rather than adapting to their environment  
 (as RFC did) focus on trying, often through  
 35 lobbying and selective international alliances, to  
 ensure that the environment evolves in a way that  
 suits their interests. Firms such as EDS, Fannie  
 37 Mae and Freddie Mac have consulting arms that  
 link with regulators and governments, and whose  
 39 aims are to ensure that these firms and industries  
 evolve in a way which is beneficial to them. EDS  
 41 has had an agreement with the Belgian govern-  
 43 ment, for instance; and Fannie Mae has been  
 working with the government of South Africa and  
 45 Honk Kong to develop sister agencies. This  
 suggests that an important, and ill-understood  
 47 dimension of competition is the effort to shape  
 particular value chain structures in ways that are  
 49 advantageous to domestic or global players (cf.  
 Henisz, 2003; Cacciatori and Jacobides, 2005).  
 51 Such efforts, when done with a good under-  
 standing of value chain structures, can both yield

advantages for the firms undertaking them, and  
 can also change the layout of the competitive field  
 for all firms involved. Clearly, the battle for  
 shaping the nature and structure of the value  
 chain merits dedicated research, going well beyond  
 the confines of this paper.

#### DISCUSSION: VALUE CHAIN STRUCTURE AND COMPETENCY EXPORTABILITY IN GLOBAL EXPANSION

This paper set out to help us understand when  
 firms can capitalize on their competitive advantage  
 in expanding globally, and when they cannot: over  
 and beyond the challenges of a country's overall  
 cultural or institutional framework, the distance in  
 terms of administrative practices, Human Re-  
 source policies and habits, the *comparative struc-*  
*ture* of the value chain was shown to play a very  
 significant role in the potential of global expan-  
 sion. Given that value chains can be decomposed  
 in different ways, in different countries, diverse sets  
 of co-specialized units will emerge; and this is why  
 we need to understand the nature, structure and  
 capabilities of the vertical modules for the same  
 industry in different countries. To do so, I  
 proposed a simple framework that considers two  
 key aspects in an industry: the degree of compe-  
 tency modularity (and the resulting fit with the  
 potential host country's need) and the degree of  
 institutional modularity (and the ability of linking  
 with the host country's other co-specialized firms  
 in a way that preserves competitive advantage).

This angle of analysis can help explain not only  
 firm-specific opportunities for expansion, but also  
 aggregate patterns of globalization, by focusing on  
 the sector level. Specifically, it gives a gauge of the  
 degree of 'compatibility' between sectors (and the  
 extent of inter-national trade, FDI and MNC  
 activity) in different pairs of countries. Indeed,  
 aggregate, country-level factors would not be able  
 to explain why some groups of similar countries  
 have substantial global interaction in some sectors  
 and not in others; nor would it be able to explain  
 why in some sectors trade happens only between a  
 few countries which may not share many macro-  
 attributes in common. To wit, casual empiricism  
 would suggest that differences in value chain  
 structure such as those observed in construction  
 may explain why some sectors are more open to

1 others to global competition. Health care, financial  
 3 services, professional services and construction,  
 5 which together amount to a third or more of the  
 7 GDP in many developed countries, all have very  
 9 different value chain structures in different coun-  
 11 tries. The reason is not just direct regulatory  
 13 involvement—but rather, this reflects the fact that  
 15 in sectors where there is no ‘one best way’ to  
 17 organize, a path-dependent process takes hold:  
 19 when regulation is also involved, this path-  
 21 dependency ‘hardens’, leading to a set of inter-  
 23 nationally inconsistent and nationally inert  
 25 structures.

15 In that regard, it is important to note that the  
 17 growing harmonization of business practices,  
 19 either mandated by national and international  
 21 regulatory agencies, or brought about by the  
 23 institution of actual or presumed ‘best institutional  
 25 practices’ may lead toward greater isomorphism in  
 27 value chain ‘junctures’ and structures.<sup>14</sup> This  
 29 convergence is reinforced by global competitive  
 31 dynamics: as some very effective global competi-  
 33 tors emerge in particular parts of the value chain in  
 35 one country, they may force changes in the value  
 37 chains of other, host countries. Local firms in these  
 39 countries, in turn, try to accommodate and  
 41 capitalize on these global competitors’ capabilities  
 43 in their national setting, by finding more effective,  
 45 modular ways to link with them. As such the  
 47 structures of industries are endogenously changed,  
 49 with modularization of capabilities begetting  
 51 institutional modularization, begetting even more  
 pronounced benefits from being modularized, in a  
 process similar to that described by Jacobides and  
 Winter (2005). Thus, through competition, a  
 global convergence in terms of value chain  
 structures is often self-reinforcing, and this pro-  
 cess, when initiated, leads to increasing globaliza-  
 tion of previously insular sectors.

41 The prospect of globalization can also *shape* the  
 43 nature of the value chain. If a global competitor  
 45 can draw on one of the existing ‘ecosystems’ with  
 47 which the global competitors’ capabilities *do* fit,  
 49 then that type of vertical eco-system, linking one  
 51 or more global competitors can gradually out-  
 compete other variants; that is, the battle between  
 different ways of organizing the value chain in the  
 national context may be affected by global  
 competition, as global competitors will try to  
 ensure that their preferred structure will be  
 supported in the host country. As such, the  
 existence of even a limited set of potentially

1 ‘vertically co-specializable’ local firms may be the  
 3 thin edge of the wedge that will enable successful  
 5 global expansion. These competitive dynamics  
 7 play out at the level of institutional/value chain  
 9 structure as well as on the level of the product or  
 11 service. Indeed, the way in which global firms  
 13 affect the institutional layout of sectors in the  
 15 countries they operate or plan to do so, remains an  
 17 intriguing venue for research, especially consider-  
 19 ing the current rhetoric of firms such as Fannie  
 21 Mae that try to ‘illuminate’ other countries and  
 23 guide public policy in a way that will be convenient  
 25 to them (Shell, 2003; Chapters 2–3). This suggests  
 27 that we must be wary of blanket prescriptions on  
 29 ‘superior’ ways of organizing and setting up the  
 31 value chain—‘institutional monocropping’ has its  
 33 dangers both at the level of societal institutions  
 35 (Evans, 2004) and at the level of industry  
 37 structures. We should not forget that firms can  
 39 be relied upon to advocate what is most beneficial  
 41 for them, not for society as a whole, as the ‘Global  
 43 Value Chain’ literature also suggests (Gereffi *et al.*,  
 45 2005; Gibbon and Ponte, 2006).

25 This provides a fresh angle on the role of  
 27 technological standards, and, most importantly  
 29 perhaps, of global ways of defining and transmit-  
 31 ting information (such as the emerging XML  
 33 communication and information protocols); it  
 35 suggests that efforts to manipulate an ‘industry  
 37 architecture’ (see Jacobides *et al.*, 2006) can lead  
 39 to drastic changes in the nature of global competi-  
 41 tion. Changes in information technology might  
 43 affect strategy on the global and national level, by  
 45 virtue of their creating a homogenized, and  
 47 decomposable value chain (Evans and Wurster,  
 49 1997). Yet the extent to which either regulation or  
 51 Information Technology alone can lead to such  
 changes in the value chain structure is unclear.  
 Clearly, more attention to the strategic and  
 institutional impacts of IT and standards is  
 called for.

43 While the impact of Information Technology on  
 45 industry structure might not be quite as pervasive  
 47 as we once thought, the efforts to homogenize  
 49 value chains internationally do continue apace,  
 51 driven not only by regulators but also, and mainly,  
 by the firms that expect to profit from it. Our  
 empirical illustration suggested that firms such as  
 Fannie Mae or Bechtel Corp. or Hutchison  
 Industries are trying to benefit by advocating,  
 using heavy lobbying, structures in the value chain  
 where they can expand, or where the US and the

World Bank invests in. This provides a further strategic spin on Henisz's (2003) recent discussion on how firms succeed in global expansion through their capabilities to shape their institutional environment abroad.

On the practical level, the rapid growth of outsourcing and offshoring shows how firms such as Infosys or Capita try to develop modules that do fit in particular industries; they try to adapt or potentially change the value chain structure. This paper's angle, which combines the analysis of value chains with exportability of competitive advantage, can thus help shed some further light to the growing phenomena of outsourcing and offshoring, which surely merit more dedicated research.

#### Limitations

The analysis, of course, has several inherent limitations. For instance, it does not address the 'internalization' issue directly. To address it, we would need one more dimension to the  $2 \times 2$  modularity matrix, which would consider whether an advantage at any part of the production process can be 'traded' through licensing or franchising, or whether this requires direct expansion. The new dimension would be the 'advantage tradeability', that is, the extent to which a firm would be able to 'monetize' its advantage by creating a license or trading agreement for a particular area where a firm is strong. Another issue that has not been addressed is the choice of mode of global expansion (e.g. Greenfield vs Merger & Acquisition). While this analysis holds for both of these cases (inasmuch as global expansion rests on the desire to leverage some advantage abroad), we could speculate that entering through acquisition might mitigate some of the concerns of vertical co-specialization in the host country, inasmuch as there is a possibility of blending the home competitive advantage with the embeddedness in the local institutional context. Follow-on research could consider how the mode of entry relates to comparative value chain structure and the modularity in capabilities or institutions.

This framework also did not address another important question that relates to MNC's in particular, which consists of the benefits from global operation not in 'exporting' but in 'developing' competitive advantage in the first place. In the literature, there is a broad consensus

that a MNC is 'an international network that creates, accesses, integrates and applies knowledge in multiple locations' (Almeida *et al.*, 2002, p. 148). Consistent with this 'Differentiated Network' model of the MNC (Nohria and Ghoshal, 1997), we know that the MNC's distinctive feature is that it operates in multiple countries, each of which is characterized by a distinct task environment or organizational field (Ghoshal and Nohria, 1989; Westney, 1993), and that it draws on these differences to generate and leverage new knowledge (McKevily *et al.*, 2004; also, see Markides and Geroski, 2004). The specific question here becomes, how different should the value chain structures be, before 'requisite variety' that can generate new knowledge gets lost in an inchoate medley of different and incommensurate structures? The impression from the field is that modest differences in value chain structures might be of some help in the sense of maximizing learning and experience, but that growing differences are quick to take their toll on both the ability to leverage and the ability to learn from multiple settings. It may well be the case that such differentiated networks need to operate on the basis of a more or less similar structure of the industry so as to render learning feasible, let alone effective. The particular role of the comparative structure of the value chain in facilitating or hampering the knowledge in such 'differentiated networks', then, is a promising venue for future research.

#### CONCLUDING NOTE

As Meyer and Rowan (1977) noted, organizations encompass 'systems of coordinated and controlled activities that arise when work is embedded in complex networks and boundary spanning relations'. This paper provided one specific, new way of looking at the evolution of these networks. It looks at the structure and the dynamics of the institutional layout of sectors; at the nature of the value chain and the relationships of actors within it. This allows us to build on several useful institutional and evolutionary economics frameworks, including the synthesis recently attempted by Jacobides (2005) and Jacobides and Winter (2005). Also, this view is also consistent with Shanley and Peteraf's (2004) recent discussion of 'vertical groups', and extends their work by

1 suggesting that in different national contexts,  
 2 different types of groups emerge. As a result, in  
 3 dissimilar circumstances, global expansion may be  
 4 problematic *because* of the existence of incom-  
 5 mensurate groups with incommensurate  
 6 capabilities.

7 The new perspective offered in this paper helps  
 8 us revisit both the rationale for global expansion,  
 9 and the mode of expansion abroad; it helps explain  
 10 how and why competitive advantage can be  
 11 exported, and highlights a new level of analysis  
 12 that could be useful in the study of global  
 13 management issues for firms, sectors and coun-  
 14 tries. I thus hope that this analysis opens up the  
 15 way for more research, both on the theoretical and  
 16 on the empirical level. For all the limitations of  
 17 early-stage research, I hope that this paper will  
 18 lead to richer discussions and a better under-  
 19 standing of the exportability of competitive  
 20 advantage—and of the structure and evolution of  
 21 increasingly globalizing industries.

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### 39 NOTES

- 40 1. The choice of form of global expansion (i.e.  
 41 globalization through market transactions vs globa-  
 42 lization through internalization; and mode of  
 43 foreign entry) is the central question in much global  
 44 management research (see Buckley and Casson,  
 45 1976; Caves, 1996). We do not expressly address it  
 46 here; the basic argument holds, whichever the form  
 47 of the globalization. Still, we do return to both the  
 48 question of internalization and the question of mode  
 49 of global expansion, as they relate to the argument  
 50 in this paper, in the discussion section.
- 51 2. The structure of global corporations itself could give  
 rise to the very competitive advantage that can be  
 exported, through learning, creating and leveraging  
 knowledge globally (see Kogut and Zander, 1993;

1 Nohria and Ghoshal 1997; Bartlett and Ghoshal,  
 2 2000; McKeivily *et al.*, 2004). There also exist  
 3 benefits from globalization *per se*, which are based  
 4 on lower costs of operations through global  
 5 economies of scale or scope (Dunning, 1979; Teece,  
 6 1980; Bartlett and Ghoshal, 2000). In addition to  
 7 having an advantage it can leverage internationally,  
 8 a firms' ability to expand globally also depends on  
 9 how effective it is in the process of globalization  
 10 itself, and on having the appropriate organization  
 11 and processes (cf. Perlmutter, 1969; Stopford and  
 12 Wells, 1972; Ghoshal, 1987; Birkinshaw, 2000;  
 13 Vermeulen and Barkema, 2002).

3. Much progress has been made in terms of our  
 4 understanding of the conditions under which a firm  
 5 can 'export' its competitive advantage through  
 6 licensing its assets/types of products or services/  
 7 technology/superior way of producing, or whether it  
 8 has to operate in multiple countries in order to  
 9 capitalize on its advantage. The consensus in the  
 10 literature is that if the advantage is based on  
 11 knowledge or technology that can be licensed, a  
 12 firm would opt for this in order to avoid some of the  
 13 downsides of the liability of foreignness. When  
 14 considering the 'exportability' of competitive ad-  
 15 vantage we consider the extent to which a firm can  
 16 leverage its advantage *regardless* of the mode of  
 17 global operation. We revisit this issue of internatiza-  
 18 tion (Buckley and Casson, 1976; Teece, 1981; Caves,  
 19 1996) in the discussion, after having laid out the  
 20 theoretical framework.

4. The term 'value chain' and 'value chain structure' is  
 5 used in many different ways in the literature. While  
 6 'value chain structure' initially referred to the set of  
 7 primary and support activities a firm undertakes  
 8 (see Porter, 1985), it has recently come to signify the  
 9 set of activities that are involved in turning inputs  
 10 into outputs, and more particularly the degree to  
 11 which an industry is integrated or consists of  
 12 vertically co-specialized units (Cacciatori and Jaco-  
 13 bides, 2005; Gereffi *et al.*, 2005; Jacobides, 2005).  
 14 We adopt this latter meaning of 'value chain  
 15 structure' for the purposes of this paper.

5. This complements the research undertaken in the  
 6 emerging 'Global Value Chain' tradition (see  
 7 Gereffi, 1994; Gereffi *et al.*, 2005; Gibbon and  
 8 Ponte, 2006), which considers the dynamics within  
 9 globalized value chain structures. That research  
 10 considers how the international division of labor,  
 11 often driven by powerful upstream or downstream  
 12 actors, affects global patterns of development.  
 13 Instead, here we focus on *inter-national differences*  
 14 in the way labor is divided, and consider the  
 15 implications for success in global expansion.

6. The structure of the value chain affects both the  
 7 immediate exportability of competitive advantage  
 8 (that is, the extent to which specific firms can  
 9 leverage their advantages from one setting onto the  
 10 next); and it drives *productive capabilities* along an  
 11 industry themselves. As Jacobides and Winter  
 12 (2005) recently suggested, the way labor is divided  
 13 in a sector affects the processes of knowledge

1 accumulation; the identity, references, and compar- 1  
 2 ison points, as well as capability development 2  
 3 process of the participating firms. So international 3  
 4 differences in both the way labor is divided and in 4  
 5 the connections between the firms along the 5  
 6 industry's value chain affects the patterns of 5  
 7 exportability of advantage as it also shapes the 7  
 8 *magnitude and type* of the capability advantage over 7  
 9 time, in addition to shaping the degree to which it is 9  
 10 institutionally modular.

- 11 7. It is obvious that French architects would find it 11  
 12 very hard to expand in the UK, as they lack the 12  
 13 capability of detailing. Yet, if the capabilities were 13  
 14 modular, i.e. if the capabilities along this value chain 14  
 15 were not intrinsically linked, then this problem 15  
 16 might be resolved if there existed a vertical specialist 16  
 17 capable in detailing. Likewise, if capabilities were 17  
 18 modular, then the UK architects would be able to 18  
 19 expand in France by selectively 'exporting' *only* 19  
 20 their capabilities in design. So if capabilities are 20  
 21 modular, then the 'fit' in terms of vertical scope can 21  
 22 be resolved inasmuch as (a) the 'exporting' company 22  
 23 goes to a country which requires a span as large or 23  
 24 narrower than its own scope; or (b) if the 'exporting' 24  
 25 company goes to a country which requires a broader 25  
 26 span, which can be partly covered by itself and 26  
 27 partly covered by another vertical specialist. Of 27  
 28 course, case (b) (e.g. the French's entry in UK 28  
 29 architecture) would be more difficult, as it may be 29  
 30 easier to drop a capability than find someone else to 30  
 31 'cover' for a capability that does not exist. Yet if 31  
 32 capabilities are integral, non-modular along the 32  
 33 value chain, that is, if firms can only transfer their 33  
 34 superiority in an 'all or nothing' package, *neither* the 34  
 35 firm with a narrower scope *nor* the firm with a 35  
 36 broader scope will be able to expand globally with 36  
 37 success. Thus, it is the lack modularity of capabil- 37  
 38 ities that shapes prospects of global expansion, and 38  
 39 makes the problem of 'fit' in terms of scope to 39  
 40 become binding.
- 41 8. Note that the term 'institutional' in the context of 41  
 42 'institutional modularity' is not used to denote non- 42  
 43 firm institutions and their nature in an economy. 43  
 44 Rather, we use the term 'institutional' in the sense 44  
 45 used by Coase (1937, 1992), who, in his analysis of 45  
 46 the 'institutional structure of production', considers 46  
 47 the division of labor between different types of firms 47  
 48 in an industry. For a detailed discussion, see 48  
 49 Madhok (2002) or Jacobides and Winter (2005).
- 50 9. Indeed, Japanese transplants in the US tried to 50  
 51 maintain same type of interactions along the value 51  
 chain by spending substantial amounts of time, energy and funds in the almost altruistic effort to train their suppliers in JIT and lean techniques; see MacDuffie and Helper (1999) for a detailed discussion.
10. Recently (2003/2004), Gordon Brown, the UK's Chancellor to the Exchequer, initiated a large-scale study to consider emulating the US model; but as the report suggested, this would not lead to much benefit to the UK right now, as its mortgage system, even with a very different and less dis-integrated

1 structure, with minimal securitization, is also 1  
 2 efficient. It has simply developed along different 2  
 3 lines, yielding institutions that differ markedly from 3  
 4 the ones in the UK. And it cannot be made more 4  
 5 efficient by the institution of one or two innovations; 5  
 6 it would require a more substantial re-organization 6  
 7 that would not fit the structure of the sector. This 7  
 8 strongly supports the thesis that industry structures 8  
 9 are idiosyncratic, path-dependent, and not only 9  
 10 technologically determined.

- 11 11. Note that the embeddedness of service firms in 11  
 12 networks of buyers (cf. Stuart and Podolny, 1996), 12  
 13 which cannot be transferred from one setting onto 13  
 14 the next, is an important impediment to globaliza- 14  
 15 tion, especially in services. This may explain why in 15  
 16 the construction sector, the few firms that have 16  
 17 globalized, are engineering, architectural or cost 17  
 18 consultancies who have globalized by *following their* 18  
 19 *clients*, as such ensuring the maintain some of their 19  
 20 institutional links and embeddedness. See Baark 20  
 21 (1999) for an extended discussion of how globaliza- 21  
 22 tion is driven by customers who globalize, thus 22  
 23 enabling service providers to globalize as well. 23  
 24 12. The LTV ratio is the ratio of the mortgage 24  
 25 amount divided by the value of the collateralized 25  
 26 property. Obviously, MB firms want a reasonably 26  
 27 modest LTV (US practice is to have an LTV of 27  
 28 roughly 80%, even though under-collateralized 28  
 29 loans of 125% LTV do exist) whereas customers 29  
 30 prefer high LTVs. Not being able to offer an 30  
 31 adequately high LTV may be a significant competi- 31  
 32 tive drawback. 32  
 33 13. Note that these findings are partly consistent with, 33  
 34 yet clearly distinct, from recent research of Khanna 34  
 35 and Palepu (1997, 1999, 2000). Khanna and Palepu 35  
 36 argue that in less developed countries, the lack of 36  
 37 institutional development in general (in terms of 37  
 38 capital markets, or even in terms of intermediate 38  
 39 markets) leads to greater integration. To corollary is 39  
 40 that such integration will give way to specialization 40  
 41 as the level of institutional infrastructure improves. 41  
 42 This would also suggest that the expansion of a 42  
 43 vertical specialist in a country which has only 43  
 44 integrated providers may be fraught with problems; 44  
 45 with this we agree. On the other hand, though, we 45  
 46 argue that there is no 'ordinal ranking' of better or 46  
 47 worse/sophisticated vs non-sophisticated countries 47  
 48 in terms of their vertical structure. What matters is 48  
 49 the existence of *exact* vertical complements for a 49  
 50 firm expanding abroad; it is a question of *fit*, rather 50  
 51 than a question of 'institutional maturity' or 51  
 sophistication. So even expansion in a developed country might face the same problems of lack of vertically co-specialized providers, if that country's vertical modules do not fit those of the expanding firm. So rather than consider the problems of expansion of Irwin to Mexico as an illustration of the generic problems caused by the lack of institutional development, we would argue that it is equally plausible to suggest that the failings were due to 'poor fit'. The fact that US firms have faced remarkably similar problems when expanding to the

1 UK (CountryWide CCR being the best example)  
 lends credence to this interpretation.  
 3 14. For instance, Herrigel and Wittke (2005) in their  
 study of automobile production systems, found that  
 5 in different countries vertical dis-integration took on  
 a different form, yet convergence was increasingly  
 7 plausible, whether domestically (i.e. vertical co-  
 specialization between different local participants  
 9 being isomorphic) or internationally (i.e. vertical  
 specialization happening so as to accommodate  
 11 particular global competitors onto the local setting);  
 similarly, Helper and Sako (1995) also found some  
 convergence on how parts of the value chain are  
 connected.

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