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# The transition to internationally traded services and Ireland's emergence as a 'successful' European region

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Seamus Grimes, Mark White<sup>¶</sup>

Centre for Innovation and Structural Change, National University of Ireland, Galway, Ireland;  
e-mail: [Seamus.Grimes@nuigalway.ie](mailto:Seamus.Grimes@nuigalway.ie)

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**Abstract.** The authors explore Ireland's growing involvement in the world economy. For many years, Ireland's foreign-direct-investment-led (FDI-led) development policy was associated heavily with low-skill, dependent branch plants. However, over the past fifteen years the shift towards internationally traded services notably improved the quality of this investment. This transition allows Ireland an opportunity to alter its position within the world economy. The authors use corporate case studies to demonstrate the extent to which Irish-based affiliates of information and communication technology multinationals now assume more significant positions within their wider corporate networks. In addition, it considers the role of the emerging cadre of Irish managers in enhancing the sustainability of Ireland's FDI-led development model.

## 1 Introduction

In this paper we explore how Ireland's recent inward investment in internationally traded services allows for deeper integration into the world economy. Although academic researchers have long debated the economic development consequences of foreign direct investment (FDI) (for example, Dicken et al, 1994; Turok, 1993; Young et al, 1994), these debates focus overwhelmingly on FDI associated with large-scale manufacturing and until recently overlooked service-based FDI (Gripaios et al, 1997). Given the growing prominence of services, this represents a significant oversight (Daniels, 2000; Miozzo and Miles, 2003). As corporate organisational forms become more complex and diverse, there is a greater need to understand both the growing array of activities and the ways in which regional economies become entwined within the organisational structures of global firms. The multiscale perspective of global production networks (GPNs) contributes to this understanding not only by conceptualising better the relationships between corporate networks and territorial economies but also by its considering the service activities that mediate the entire production process (Henderson et al, 2002).

These issues are particularly relevant to Ireland, which for the past forty years has implemented FDI-led regional development policies. Rural, low-value-added manufacturing once dominated Ireland's inward investment profile (O'Malley, 1994), but internationally traded services now assume a much more prominent position (Grimes, 2003). The shift to services is evident through the many information and communication technology (ICT) companies such as IBM, Hewlett Packard (HP), Microsoft, and Dell that elected to locate important service functions in Ireland. This enhanced role places Irish affiliates in more advantageous positions from which to seek more extensive and sophisticated corporate mandates. As a result, Ireland remains better equipped to manage the changing demands of the world economy than during the period dominated by branch-plant manufacturing.

Internationally traded services are by no means restricted to the technology sector in Ireland, as, for example, Dublin's International Financial Services Centre accounts

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<sup>¶</sup>Current address: Center for Regional Economic Competitiveness, PO Box 407, Arlington, VA 22210, USA; e-mail: [mwhite@accra.org](mailto:mwhite@accra.org)

for approximately 10 000 jobs (Forfás, 2004b). Ireland's technology sector nevertheless represents one of the country's most significant and prominent engines of growth. In 2002 the Irish ICT sector comprised over 1300 companies, employing 81 000 people, and generated sales of over €51 billion in 2001 (Forfás, 2004a). More broadly, almost four fifths of the net additional employment of 531 000 in Ireland over the period 1994–2002 occurred in service activities, with almost three quarters in private sector services. During the 1990s service exports more than tripled and by 2002 reached €23.8 billion in value, with foreign-owned firms accounting for the majority of these service exports (Forfás, 2004b). Consequently, in this paper we focus predominantly on affiliates associated with the technology sector because of the overall significance of this sector to the economy.

This paper is organised as follows. In the section 2 we discuss the need for a better understanding of the development opportunities associated with FDI, particularly as the activities of firms focus increasingly around providing services. In section 3 we give a brief overview of the data utilised in this paper. In section 4 we provide an overview of Ireland's shift from manufacturing-oriented activities towards more service-oriented activities. In particular, we examine the processes driving this transition, principally in light of Ireland's diminishing cost competitiveness. In section 5 we use a number of corporate case studies to demonstrate how internationally traded services allow Irish-based affiliates to assume more significant positions within their corporate networks. In section 6 we then investigate how these developments contributed to the emergence of a cadre of Irish managers who are now better able than before to take advantage of the opportunities created by the world economy's changing dynamics. Finally, in section 7 we offer some conclusions about the long-term sustainability of Ireland's FDI-led development model.

## **2 Service-based foreign direct investment in peripheral regions**

### **2.1 Transnational corporation organisation and regional development opportunities**

As many policymakers attempt to exploit the opportunities presented by economic globalisation, FDI has achieved a prominent role in regional development policies. Although, FDI-led development policies are not without their critics (for example, Lovering, 1999; O'Hearn, 1998), places such as central Scotland and Ireland achieved some level of success by importing capital and knowledge through FDI. In contrast to earlier studies that compared the beneficial and detrimental aspects of FDI (for example, Turok, 1993), researchers now adopt more evolutionary approaches toward contextualising the role of transnational corporation (TNC) affiliates within the global economy. These approaches provide newer insights for understanding the fluidity involved in the process of 'strategic coupling' of regional assets and the demands of focal firms in GPN (Henderson et al, 2002).

Although the growing scale and scope of TNC activities make this process more complex it nevertheless creates more opportunities for places to become increasingly integrated within the world economy. The manner in which TNCs reorganise their operations globally often determines the nature and extent of this involvement (Dicken and Malmberg, 2001). ICT development facilitates the management and coordination of TNC operations over a greater distance and therefore creates more opportunities for further internationalisation. They further allow for more complex sourcing arrangements and greater information flows. As a result, ICTs may create the necessary conditions for regions such as Ireland to become more integrated into the core of the world economy. Regions that access the new opportunities created by changing firm demands do so by 'learning to learn' in that they display the ability to adapt to volatile international markets (Hudson, 1999). This ability to adapt significantly influences the

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decisions made by TNCs about what activities to outsource and what to keep in-house (Zysman, 2002). The diversity of firm practices and regional capabilities makes the regional development outcomes created by the interaction of firms and territories highly variable in nature and contingent over time (Dicken and Malmberg, 2001). Building on Schoenberger's (1999) argument, Dicken and Malmberg (2001, page 360) suggest that "business strategy and development are the outcome of complex actions and interactions that unfold over time as different parts of the firm, organisationally and territorially, develop their own identities, ways of thinking and doing things."

Zanfei (2000), however, highlights several ways in which individual affiliate behaviour can influence a firm's overall innovative capacity. Individual affiliate behaviour is often the product of the local networks in which the affiliates are enmeshed. These networks can provide unique sources of tacit knowledge capable of enhancing a firm's overall innovative capacity. Therefore many foreign affiliates are not just listening posts but also portals through which TNCs may access unique pools of knowledge. Consequently, connections both to local interfirm networks and to wider intrafirm networks allow for the possibility that the locus of firm coordination moves both vertically and horizontally over time. This is significant because the bargaining power of different affiliates changes in accordance with their performance and recognised competence (Zanfei, 2000). Just as changes in local capabilities have consequences for affiliate bargaining power, so too do changes in affiliate bargaining power have consequences for regional development as they affect considerably decisions related to repeat investments and affiliate upgrades (Phelps et al, 2003).

The diminishing number of greenfield investments worldwide (UNCTAD, 2002) enhances the importance of repeat investments and makes intracorporate competition, rather than 'locational tournaments' (Mytelka, 2000b), the key process through which many places now secure new sources of investment (Phelps and Fuller, 2000). Although performance and competence are necessary conditions for redefining an affiliate's position within its wider corporate network, they are not sufficient conditions (Birkinshaw and Fry, 1998). TNCs are not impersonal entities adhering closely to the dictates of capital but rather are collections of interests and agendas that are simultaneously in competition and collaboration with one another (Schoenberger, 1997).

Affiliate evolution often requires substantial initiative both from the local affiliate management and from other local stakeholders to expand and defend their corporate mandate (Birkinshaw, 2000). This initiative involves entrepreneurial and sometimes subversive behaviour on the part of the local affiliate managers to actively improve the status of the affiliate within its corporate network (Molloy and Delany, 1998). The extent to which firms can move into different activities depends on the type of internal market in which they are competing. For instance, the internal markets for capabilities or mandates that depend on specific types of knowledge or skills are less open to competition than are the internal market for more cost-driven intermediate services (Birkinshaw, 2000). As a result these latter market areas are the most open to intracorporate competition, with more established affiliates frequently at an advantage (Phelps and Fuller, 2000). The growing recognition of the importance of intracorporate competition demonstrates the diffuse nature of corporate power throughout GPNs (Jones, 2002).

## **2.2 Opportunity through service-based foreign direct investment**

Much as TNCs decentralised their manufacturing operations to lower cost regions such as the Far East and Eastern Europe, so too are they now relocating software and service activities to similar locations (*The Economist* 2003). The worldwide amount of service-based FDI exceeds that of manufacturing-based FDI (Dicken, 2003;

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UNCTAD, 2004) and services now provide additional opportunities for places to reposition themselves in corporate networks. In spite of this trend, the literature examining the relationship between inward investment and regional development still possesses a greater bias toward large-scale manufacturing operations and does not give adequate attention to the role of services (Daniels, 2000; Miozzo and Miles, 2003).

The most recent world investment report, *World Investment Report 2004—The Shift Towards Services* (UNCTAD, 2004), however, makes an important contribution to the emerging literature, seeking to provide a more innovative conceptualisation of the internationalisation of services. Chapter 4 of the report examines the offshoring of corporate service functions and argues that FDI plays an important role in offshoring through captive offshoring (which is important in Dublin's International Financial Services Centre) and also when foreign affiliates establish specialist centres to serve foreign clients. The report suggests four key categories of offshoring activities: back-office services (shared service centres), front-office functions (call centres and contact centres), regional headquarters (RHQs), and information technology (IT) services (including software development). In 2002–03, the report pointed out that over half of all export-oriented FDI service projects went to India, Ireland remaining the leading location within the developed world for this investment. Most of the projects being attracted to Ireland involved finance and IT companies, and Ireland was the preferred location for pan-European shared service centres (UNCTAD, 2004).

Although many commonly outsourced or offshored service activities are of the back-office variety, they nevertheless play important roles in organising and facilitating the expansion of TNC activities. Moreover, many of the largest ICT companies such as IBM and HP are being defined increasingly by their growing involvement in services (Balgobin and Pandit, 2001). Whereas many of the international business literature models examining the growing significance of services emphasise the national or global scales, Coe (2002, page 133) suggests that emphasis should instead be placed on examining “the extent to which economic activity is functionally integrated across different geographical scales”. This provides a more useful starting point because service activities are more often coordinated and organised at the intermediate regional scales than between the national and the global scales.

Within this context, the TNC units of growing importance are RHQs that organise and coordinate firm activities in all of the major triadic markets of Europe, Asia, and the Americas. For instance, Yeung et al (2001) note that many global corporations establish such RHQs to penetrate emerging markets that are too geographically distant for the global headquarters (HQs) to coordinate and manage. These RHQs can play either an entrepreneurial role or an integrative role. They play such vital roles in allowing firms to be at once globally integrated and locally responsive to changing market conditions and demands. In a sense, they serve as ‘windows of influence’ between local stakeholders and key corporate decisionmakers (Yeung et al, 2001).

Given the growing role of RHQs as intermediaries between host regions and TNC HQs, the acquisition of these important corporate functions creates new opportunities for places to improve their standing within GPNs. It allows places alternative paths to development beyond the linear models that focus heavily on the movement into research and development (R&D). Coe (2002), for instance, demonstrates how the service activities undertaken and organised by Singaporean-based RHQs made Singapore a strategic hub of corporate activity in Asia. These RHQs deliver key functions such as sales, marketing and technical support for a variety of software and service activities and in doing so have developed a “fluid system of project-based teams of staff characterised by considerable mobility both between projects and between national territories within the

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region" (Coe, 2002, page 128). In the rest of this paper we illustrate how a similar shift to service-oriented activities has resulted in Ireland's changing role within the world economy.

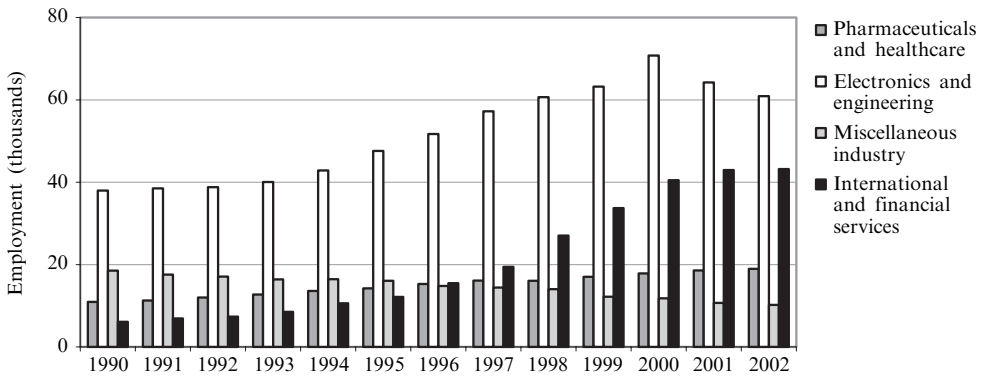
### 3 Data sources

We draw upon a number of different data sources in order to produce several corporate case studies. Although case studies are not always easily generalisable (Markusen, 1998) they can nevertheless prove effective when conducted in a critical and thorough manner (Flyvbjerg, 2001). In order to construct these case studies, we use a combination of published data and semistructured corporate interviews. Government reports produced by Industrial Development Agency Ireland (IDA Ireland) and Forfás (the agency responsible for enterprise, trade, science, technology, and innovation policy) provided aggregate data related to general industry and investment patterns. As a result they were the sources of data such as firm numbers, origins, activities, employment data, and the volume and type of investment flows. Company websites served as a vehicle for mapping the corporate networks of TNCs and to begin placing Irish-based affiliates within those networks. Media sources, and particularly *The Irish Times*, were used as an important source of information on TNC activity in Ireland. Consequently, they offer a source of information on new investments, expansions, layoffs, and closures. Even though these sources are not comprehensive they nevertheless provide important contextual information.

Whereas the above sources add breadth and context to the study, semistructured corporate interviews provide depth (Schoenberger, 1991). This study involved approximately fifteen semistructured interviews with managers in Irish-based technology multinationals, as well as several interviews with policymakers in IDA Ireland and Forfás. These interviews were designed to gain an understanding of the processes driving the patterns shown by the data sources described above. As a result, these interviews revealed information such as the nature of firm activities, the evolution of affiliate competences over time, and intrafirm relationships and their consequences. The firms were selected because they were all prominent firms within the technology sector and are representative of many firms within the sector. In spite of the relatively small sample size, the combination of corporate interviews and published data therefore allow for a greater understanding of the changing patterns of inward investment in Ireland and the processes underlying those changes.

### 4 Transition in Ireland

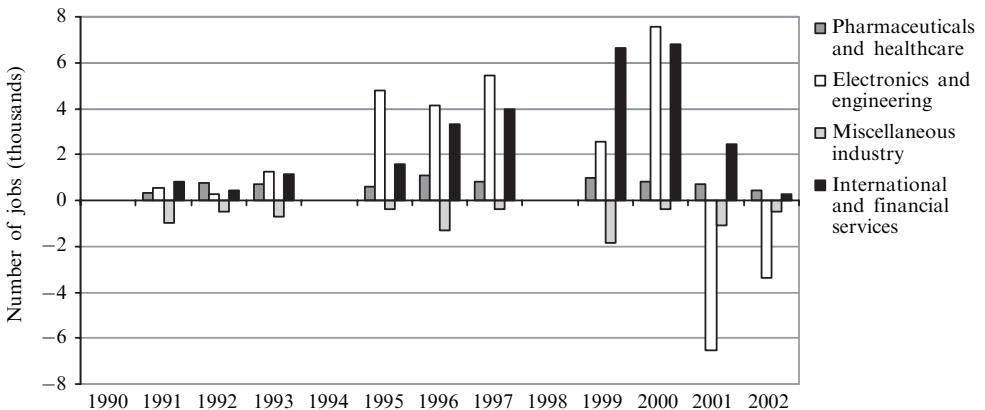
In Ireland branch-plant manufacturing dominated earlier periods of inward investment, but during the 1990s internationally traded services such as software, teleservices, shared services and financial services assumed greater prominence. This represented wider trends in the nature of TNC activities, and the Irish government further supported these trends by extending the corporate tax regime (now 12.5%) beyond manufacturing to include all internationally traded service activities. Employment data from IDA Ireland (figure 1, over) illustrate the growing prominence of service-related activities. Electronics and engineering still account for the largest segment of the Irish-based TNC work force but, following the recent period of global economic restructuring, many TNCs have begun to relocate these activities to Eastern Europe and the Far East (Forfás, 2004a). As an outcome of this restructuring, many Irish-based TNC affiliates have begun a range of service functions such as R&D, technical support, software development, and financial services. However, for many existing firms these functions only partially compensate for the loss of their manufacturing functions, and the general trend is that individual firm employment numbers are decreasing.



**Figure 1.** Total employment in companies assisted by Industrial Development Agency Ireland (IDA Ireland; sources: IDA Ireland, various years).

From figure 1 one can track further the growing significance of internationally traded service-based activities in many TNC affiliates. From 1997 to 2002 employment in activities such as software, financial services, teleservices, and shared services more than doubled. Although both sectors remain significant arenas for growth, these figures only tell part of the story as these industries remain constantly in flux. Although most offshored work involves relatively low-skilled manufacturing, the closure in 2002 of the Shannon-based affiliate of the US telecommunications company Tellabs, which employed 400 in R&D activity, demonstrates that high-skill activities were not immune from these global forces (Tellabs, interview, April 2004). In other cases, Irish-based affiliates shifted their focus toward greater value-added activities, but in so doing decreased dramatically the size of their work force. For instance, as Nortel Networks offshored and outsourced much of its Irish manufacturing operations to instead focus on R&D activities its Irish employment dropped from over 1050 to around 310 (Nortel Networks, interview, July 2003).

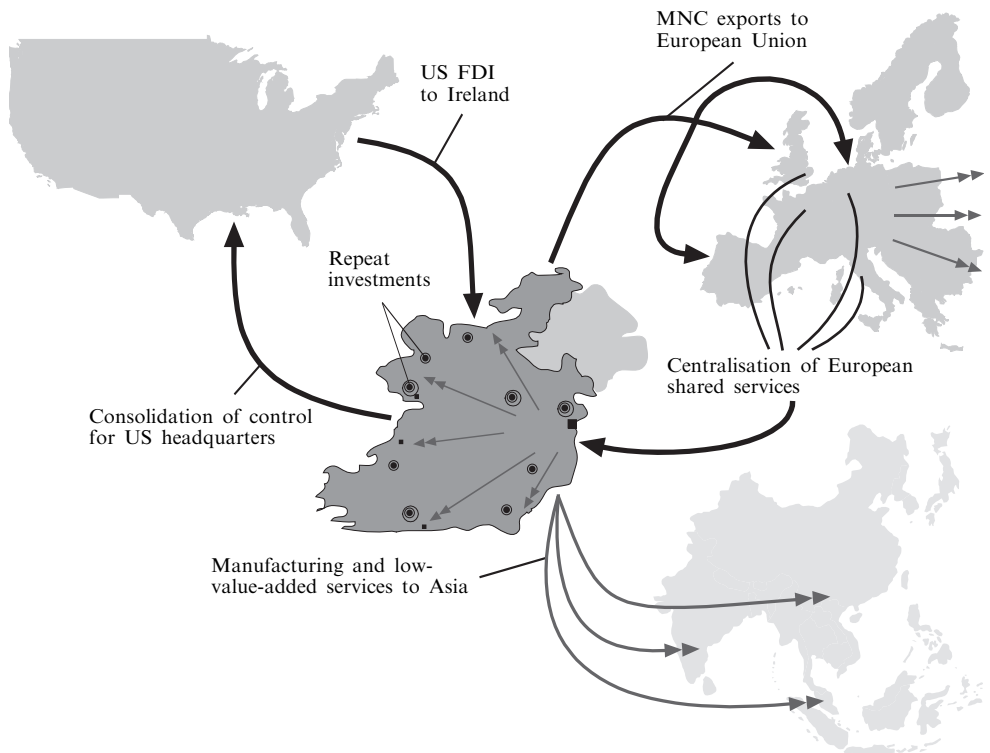
Net changes (figure 2) in employment growth further illustrate the fluidity of these activities. Most notably they demonstrate Ireland's diminishing cost competitiveness in activities such as electronics and PC manufacturing (Bradley, 2002). For example, Ireland's multinational electronics sector lost over 6000 jobs in 2001—a sum representing almost 10% of the total (IDA Ireland, 2002).



**Figure 2.** Net new jobs by sector in companies assisted by Industrial Development Agency Ireland (IDA Ireland; sources: IDA Ireland, various years).

From figure 2 one can also see that employment growth in internationally traded services slowed but remained a net positive. This, however, masks the fact that, although services represented the leading source of new jobs in foreign-owned enterprises with the creation of 5700 jobs in 2002, the same sector also lost 5500 jobs in the same year (IDA Ireland, 2002). A certain degree of upskilling is partially responsible for this turbulence, particularly as lower end activities such as basic data processing and teleservice functions are increasingly outsourced to lower-cost locations such as Eastern Europe and India.

In figure 3 we show the centralisation and decentralisation processes driving the evolution of IT internationally traded service-based sector in Ireland. Much inward investment results from US firms using Ireland as a beachhead from which to export to the European Union and to service their affiliates throughout the region (Breathnach, 1998). As Ireland becomes less competitive in manufacturing and low-value-added service activities many of these activities are being relocated increasingly to lower cost locations in Eastern Europe and Asia. However, these processes do not involve simply the cascading of activities from the USA to Ireland and then to lower cost locations. Ireland also succeeds in providing a competitive location for TNCs to centralise key corporate support functions within Europe, the Middle East, and Africa (EMEA). Reducing costs drives many firms to centralise activities such as shared services, corporate treasury and many pan-European call centres into one centralised European location. These savings result from lower overhead costs and from exploiting economies of scale. Moreover, for activities not requiring a direct market presence, the coordination and control of these activities from one location makes for further



**Figure 3.** Processes of centralisation and decentralisation in Ireland. Note: FDI, foreign direct investment; MNC, multinational corporation.

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efficiency gains compared with the older model that involved coordinating a dispersed network of individual national offices (Economist Corporate Network, 2003).

Given the cost-driven nature of these activities it is important to note that Ireland presents itself as an attractive location largely because of a collection of general assets and not any unique skill sets embedded within the Irish labour force. These general assets include Ireland's relatively skilled, English-speaking labour force and the favourable corporation tax regime. Ireland's neoliberal state therefore makes it more attractive than locations in continental Europe. Although Ireland remains an attractive site for many activities it still finds itself in a 'small country squeeze' (Kotler et al, 1997), as it faces competition from core and peripheral countries. Small countries in this situation face price competition in mature technologies from low-cost countries yet are also excluded effectively from the markets for more sophisticated products based on new technologies by the more advanced economies (Kotler et al, 1997). To illustrate this squeeze, consider that although Ireland's average hourly wage in 2000 stood below the EU average of €22.70 at €17.34 it was still over three times that of the acceding countries, which averaged €4.21 (Eurostat, 2003).

As a result of these competitive pressures Ireland must now pursue strategies that allow it to compete on high productivity and quality rather than cost. Ireland's small size generally precludes it from competing in anything other than highly selective niche sectors, but to maintain competitiveness these niche sectors must also be involved actively with TNCs (Bradley, 2002). Recent changes in the Irish tax regime were implemented in order to attract a higher share of mobile R&D investment. These policy objectives were further supported by the recent €500 million investment in Science Foundation Ireland, the remit of which is to attract world class researchers to Ireland (IDCSTI, 2004). The tax regime has also been adapted recently to facilitate IDA Ireland to attract a greater number of TNC RHQs to Ireland. All of these measures reflect policymaker concerns that the Irish development model makes the transition from 'catching up' to 'keeping up' (Mytelka, 2000a). Although catching up often occurs through cost-based competition, keeping up requires competing in more knowledge-intensive activities. In doing so, Irish-based affiliates find themselves in more direct competition with home-country affiliates that undertake the most sophisticated activities. Consequently, the competition becomes more intense given the reluctance of many TNCs to offshore their most sophisticated activities (Doremus et al, 1998). In the next section we demonstrate how many Irish-based affiliates are responding to the changing international environment and look at the potential consequences of this for Ireland's FDI-led development model.

## **5 Greater involvement in corporate networks**

As the character of Ireland's inward investment profile changes and services gain greater prominence so too does Ireland's position within GPNs change. These changes are associated with the centralisation of several key activities in Ireland. In some instances this involves the establishment of an R&D centre, as in the case of Nortel Networks or IBM, but, as noted in section 4, this more often involves a centralisation of key corporate support functions. Similar to the situation in Singapore, with the emerging role of Singapore as a centre for organising corporate activities throughout Southeast Asia (Coe 2002; Yeung et al, 2001), Irish affiliates are becoming key centres for organising activities throughout EMEA. These centres are beginning to assume greater responsibility for many key organisational operations in Europe, and in some cases becoming the EMEA RHQs.

In table 1 we display several prominent examples where TNCs centralised specific EMEA operations in Ireland. These operations vary in their corporate significance.



**Table 1.** Operations oriented towards Europe, Middle East, and Africa (EMEA) of select Irish affiliates of transnational corporations (TNCs).

Firm	Year established	Employment (Ireland, 2003)	Core business	EMEA activities	Other main locations
Dell	1990	4600	Hardware manufacturing, sales and distribution, and computer services	EMEA Manufacturing EMEA Expert Centre European Data Centre EMEA Application Solution Centre	Austin, TX, USA (HQ); Bracknell, England (EMEA); Singapore (Asia Pacific)
Microsoft	1985	1700	Software manufacturing, localisation, distribution, sales, and support	Microsoft European Operations Centre European Product Development Centre	Redmond, USA (HQ); Singapore (Asia Pacific)
Oracle	1987	1000	Software manufacturing, localisation, distribution, sales and support, and shared services	Oracle EMEA Internet Sales Division European Development and Technology Center Worldwide Product and Translation Group International E-business Centre	Redwood Shores, CA, USA (HQ); Geneva Switzerland (European HQ); Singapore (Asia Pacific)
Intel	1990	3300	Hardware manufacturing, sales, and distribution; the R&D arm of Intel's Network Processing Division	Intel Ireland campus Intel Communications Europe	Santa Clara, CA, USA (HQ)
Hewlett Packard	1990	4000	Software development, hardware manufacturing (printers), sales, distribution, and support	European Software Centre European Media Manufacturing and Customisation Centre	Palo Alto, USA (HQ); Miami (Latin America); Geneva, Switzerland (EMEA); Hong Kong People's Republic of China (Asia Pacific HQ)
Xerox	1998	500	Hardware manufacturing, colour toner, shared services, and customer support	Pan-European Shared Services Pan-European Customer Support	Stamford, CT USA (HQ); Uxbridge, England (EMEA)
IBM	1991	4000	Software development and manufacturing, online sales, marketing and technical support corporate treasury, R&D, and IT consultancy	IBM Global Services (IT consultancy for Europe) IBM Product Distribution Online sales, marketing, and technical support	Armonk, NY USA (HQ); Paris, France (EMEA)
EDS	1989	400	IT consultancy, and systems engineering services	Ireland Solutions Centre (provide services for EDS's European units or accounts)	Hong Kong People's Republic of China (Asia Pacific); Plano, TX, USA (HQ); Middlesex, England (EMEA); São Paulo, Brazil (Latin America)

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For many companies involved in software and PC manufacturing, Microsoft and Dell, for instance, Irish affiliates play key roles in manufacturing and localising their products for the EMEA market (Bradley, 2002). Other Irish affiliates play important logistical roles by managing relationships with distributors, handling customer support functions, or providing shared services. For example, Siebel Systems originally located in Ireland to act as a shared service centre and to manage the company's relationships with its localisation vendors, but it has subsequently added other functions such as web-based technical support and technical writing (Siebel Systems, Interview, 30 April 2004). Although these are the most prevalent EMEA-related activities, there are also instances where internal technical support functions have also been located in Ireland. For instance, EDS's Ireland Solutions Centre provides software engineering services for EDS's European units and clients (*The Irish Times* 2003a).

In table 2 we illustrate the changes that occurred within nine significant technology TNCs during the recent downturn in the global economy. From table 2 one can see that the global turbulence led to a variety of local consequences for these firms' Irish affiliates. For instance, IBM shed 15 600 jobs worldwide, mainly in its global services division (CNNMoney, 2002) but its Irish operations did not experience a net loss in jobs. Intel's Irish operations fared similarly well, although the construction and opening of its Fab 24 plant had been postponed until 2004. Fab 24-1 has now been completed and Intel are seeking planning for Fab 24-2, a €2 billion extension. Conversely, other affiliates such as Nortel Networks and Lucent Technologies in the telecommunications sector underwent significant reductions in the size of their Irish workforces. This was often the product of manufacturing operations being relocated to lower cost locations such as Eastern Europe and Asia or of activities being outsourced to contract manufacturers within their respective sectors. With the exception of those affiliates heavily involved in manufacturing, Irish-based affiliates fared well relative to the company worldwide. Nevertheless, this restructuring transformed many Irish-based affiliates, making them smaller in size. However, and perhaps more importantly, this restructuring reoriented the corporate mandates of these Irish affiliates toward the provision of internationally traded services. This reorientation therefore presents new challenges and opportunities for the continued development of internationally traded services in Ireland.

The expansion of Oracle's Irish-based operations illustrates how Irish operations may alter their place within the wider corporate network. Oracle's initial investment in 1987 involved a local sales and consultancy office but, similar to other software TNCs, Oracle later, in the early 1990s, located a software manufacturing operation and then localisation operations. During the mid-1990s Oracle consolidated many key support services worldwide. As a result, Oracle's Irish-based operations gained an Internet sales function and shared service functions that are responsible for the EMEA region. Against competition from the United Kingdom and the Netherlands, in 2000 Oracle selected Dublin to be the European HQ for its Internet company, Salesforce.com (*The Irish Times* 2003b). The locational assets that motivated Oracle's earlier investments—the favourable tax regime, a relatively affordable English-speaking, skilled, labour force, and a good technology infrastructure—also motivated these more recent investments. Although these different divisions are generally unrelated to one another, Oracle has enjoyed a track record of success in Ireland, thereby conferring Ireland with an additional advantage over other locations (White, 2004).

Following the consolidation of these key corporate support services Oracle Ireland now occupies a much more significant position within its wider corporate network. Rather than just performing stand-alone tasks such as software manufacturing or intermediate services such as software localisation Oracle Ireland is now much more

**Table 2.** Global corporate restructuring and the consequences for Irish operations (sources: *The Irish Times* 2001–2003, various issues).

Firm	Irish employment (mid-2003)	Year	Global action	Local consequence
Dell <sup>a</sup>	4300	2004	Reduction of 4000 staff worldwide (8.7%)	200 redundancies at manufacturing operations in Limerick 125 redundancies at call centre operations in Bray and Cherrywood
Microsoft <sup>b</sup>	1217	2004	Centralisation of some localisation activities in USA Shift some US jobs to Bangalore to cut costs and to run an 18-hour cycle	167 job cuts in the European Product Development Centre
IBM <sup>c</sup>	3700	2004	15 600 jobs cut in USA in 2002	No net loss of jobs in Irish affiliates
Intel	3200	2004	Announced 4000 layoffs in USA in 2002	1000 new jobs will be created in Leixlip; construction of Fab 24 plant postponed until 2004
Lucent Technologies	600	2004	Global restructuring, reduction of global workforce from 106 000 in January 2001, to 45 000–30 000 by the end of 2003	260 layoffs and redundancies in Dublin and Cork
Nortel Networks <sup>d</sup>	310	2004	Global restructuring: from 94 000 in 2001, to 36 960 in 2002	700 redundancies in Galway and in Belfast; focus of Irish operations is shifting from manufacturing to R&D
Hewlett Packard <sup>e</sup>	3000	2004	After the merger with Compaq, HP's European operations experienced a 12% reduction in the work force	80 layoffs and redundancies; Irish layoffs represent only 2% of Irish total staff
EDS <sup>f</sup>	400	2004	5000 layoffs in USA in 2003; to cut 20 000 over next two years	150 new jobs in Dublin operation
SAP	420	2004	Restructuring of call centre organisation in US operations	42 new jobs in Dublin facility

<sup>a</sup> Source: *The Daily Texan* 16 February 2001.<sup>b</sup> Source: Silicon Valley.com, 1 July 2003.<sup>c</sup> Source: CNNMoney.com, 2002; Industry Week.com, 10 January 2004.<sup>d</sup> Source: Job Bank USA.com, 20 August 2004; Looksmart.com, 16 July 2001.<sup>e</sup> Source: *Sacramento Business Journal* 6 October 2003.<sup>f</sup> Source: CNet News.com, 9 September 2004.

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involved in managing vendor and customer relationships. These relationships are increasingly important given the growing importance of supply chain management (Zysman, 2002). Nonetheless, most activities, with the possible exception of software localisation, are cost-driven activities and are not reliant on any kind of tacit knowledge inherent to the Irish labour force. By way of illustration, the changing international environment and Ireland's diminished cost competitiveness led the current managing director of Oracle Ireland to state that if Oracle were looking to locate many of its EMEA-related activities today it would instead opt for Eastern Europe where labour costs are lower and where rapid progress has been made in education and infrastructure (*The Irish Times* 2003b).

Although many of these corporate support services are generally considered routine back-office tasks, they nevertheless provide opportunities for Irish-based affiliates to gain control over a number of different lines of business. Whereas manufacturing activities gave Ireland an entrance to GPNs, service activities allow Irish affiliates to develop relationships not just with other parts of the corporation but also with key clients and customers. This is particularly relevant for firms involved in services that provide 'solutions' for large corporate and government clients. Rather than simply releasing a product into the market, firms must provide their clients with customised and constant service. Therefore the future of the business depends upon the relationships developed between the service provider and the client.

The development of these relationships can have important consequences for individual affiliate development. By way of illustration, HP's Galway affiliate benefited enormously from its transition from manufacturing and into service provision. Digital Equipment Corporation (DEC) initially launched the Galway affiliate as a manufacturing unit in 1971. DEC, however, eliminated the manufacturing component in 1994, leaving behind a smaller service operation (Green et al, 2001). Rather than threatening the survival of the affiliate, this move proved crucial in the affiliate's long-term development. When Compaq purchased DEC in 1998, many of DEC's worldwide manufacturing activities were eliminated or outsourced in the ensuing restructuring. However, the Galway affiliate had been rebranded internally as a service operation and, as it no longer competed internally with other manufacturing operations, this service designation contributed to its survival. In 2002 the merger with HP moved the Galway affiliate into software deployment services, further making it an important point of contact with large customers (O'Connor, 2003).

This access to customers places the Galway affiliate in a strategic position within the company. First and foremost, the establishment of strong relationships with key customers provides an important source of 'influence without authority' within the company (O'Connor, 2003). A recent example of a major contract won by HP Services and that will be managed from Ireland and Colorado involves the handling of technical support calls from 61 000 Microsoft employees, vendors, and contractors in 68 countries (Brier, 2002). If key clients insist on working with the people from HP's Galway affiliate then that bodes well for the affiliate. It also demonstrates that corporate power is not only diffuse within TNCs (Jones, 2002) but that this power is not limited to the boundaries of the firm. Second, access to customers gives the affiliate access to external sources of innovation. Third, it allows the affiliate to build stronger relationships with other units in the corporate network. For example, HP's Galway affiliate collaborates with an HP R&D centre in Bristol. Its work with the Bristol unit enhances the Galway affiliate's innovative capacity, and the Bristol unit benefits from the Galway affiliate's customer database. Moreover, this relationship provides another way to build the affiliate's internal credibility with key corporate decisionmakers (O'Connor, 2003).

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These relationships become increasingly important given the growing migration of ICT-related activities towards lower cost locations such as India and China (*The Economist* 2003). The expansion of ICT infrastructure and the growing numbers of skilled workers contribute to this global reorganisation of the IT industry. Although ICT facilitates communication it cannot replace the amount of direct contact necessary to establish relationships (Miozzo and Miles, 2003). The metaphor offered by Leamer and Storper (2001) is that ICT can sustain a conversation but it cannot replicate a handshake. As a result, ICT may maintain preexisting relationships but it cannot establish deep and complex contacts. Yet again, this raises doubts about whether ICT incorporates peripheral locations into the international division of labour in a meaningful way or merely reinforces existing patterns of uneven development and dependency.

As technical skills become increasingly ubiquitous these relationships therefore become more important, particularly for once-peripheral locations such as Ireland. Offshoring in the IT industry is not so much the product of labour arbitrage but rather about constructing a more efficient supply chain (Zysman, 2002). For several Irish affiliates, the offshoring of certain tasks or activities is less a threat to affiliate survival than an opportunity to gain greater control over the supply chain. For instance, in recognition that some of its activities are ultimately unsustainable in Ireland the Ballina-based Veritest affiliate sought to establish an office in Beijing and is planning to open a further office, in India. Although the Asian offices will assume some of the Irish affiliate's activities, these activities will be managed and controlled from Ireland (Lionbridge Technologies, interview, 22 July 2003). Similarly, the HP affiliate in Galway offshored specific tasks and projects to the company's Indian facilities yet continued to maintain managerial control over these projects. However, not all activities can be outsourced to lower-cost locations. In this instance, a market presence is vital for project management and therefore must remain in a European location.

## **6 The development of an Irish management cadre**

The greater involvement of Irish-based affiliates in their corporate networks was not just the product of superior performance or the maintenance of relative cost competitiveness; it was also very much influenced by the entrepreneurial behaviour of Irish managers. The development of an Irish management cadre represents one of the key dynamic benefits arising from Ireland's involvement with FDI. More so than during the period dominated by branch-plant manufacturing many Irish managers are now better equipped to operate within a global environment and are capable of meeting and adjusting to global standards and expectations. The development of these managerial skills therefore has enormous consequences for the sustainability of Ireland's economic development model. These skills constitute a general asset that facilitates the ability of places to adapt to changing economic conditions and therefore alter their position in the international division of labour. As noted by Lagendijk (1999), the development of these general assets presents a more appropriate strategy for economic development in peripheral places than do efforts to create 'unique relational assets', as emphasised by many advocates of institutional approaches (Amin, 1999; Cooke and Morgan, 1998).

TNCs do not always follow rigidly the logic of capital, and this becomes clearly evident if one examines managerial influence in intrafirm networks on firm development (Schoenberger, 1997). Given that the nationality of managers often influences affiliate development, the enhancement of managerial skills allows Ireland to challenge further its place within the international division of labour. Foreign managers are unlikely to make the host country their permanent home and tend consequently to emphasise short-term and medium-term performance, more so than the affiliate's

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long-term development. Conversely, native managers, with more vested interests in their affiliate's long-term development, are more apt to take an entrepreneurial approach and not settle merely on fulfilling their basic mandate (Birkinshaw, 1997). Previous research on affiliate evolution in Ireland revealed that Ireland's cadre of managers was more entrepreneurial than managers in other peripheral locations (Amin et al, 1994). O'Riain (1997) presented similar findings, showing that managers in Ireland's multinational software industry lobbied their parent actively for more sophisticated work and in so doing saw themselves as contributing to a programme of national economic development.

The consequences of Ireland's developing pool of managerial skills are reflected in several ways. At the most basic level, Ireland's FDI-led development strategy led to knowledge transmission from multinational firms to indigenous industry. For instance, many Irish software entrepreneurs gained important experience working in software multinationals based in Ireland. Almost a quarter of entrepreneurs starting their own software companies came directly from working in foreign-owned firms (HotOrigin, 2003), and two thirds of Irish software engineers have gained experience in a foreign-owned software company at some point in their career (O'Gorman et al, 1997). Previous experience in producing for international markets is an obvious benefit to indigenous software firms seeking either to penetrate export markets or to produce for the more demanding TNCs based in Ireland.

Within this process of knowledge transmission key focal firms play important roles as incubators for industry niches. For instance, many significant players in the localisation industry at one time worked for Lotus. Lotus, along with Microsoft, was one of the first software TNCs to locate in Ireland. As a result, Lotus was an industry leader and trendsetter in Ireland. As employees left Lotus they took their knowledge and experience either to manage other TNCs or to start their own companies. This shared experience leads many former Lotus employees to claim that they attended 'Lotus University'. This network of people therefore laid the foundation for Dublin to become the world centre for the software localisation industry (White, 2004). A similar phenomenon emerged in the technology sector in Galway following the closure of DEC's manufacturing facility in 1993. This closure was seen as a disaster for the IT sector in western Ireland, but it released into the local labour pool people with the experience and skills developed from DEC. What resulted was an increased availability of skilled labour for subsequent investors such as Siebel Systems or existing investors such as Nortel Networks. Moreover, a number of former DEC managers and staff subsequently started their own companies (Green et al, 2001). This case illustrates that, for some more advanced activities, even when flagship TNCs disinvest they leave behind a pool of skills that was not present at their arrival.

For many Irish managers these managerial skills were gained not just by working in Irish-based TNCs but also by working abroad. According to a survey by O'Gorman et al (1997), almost half of Irish software entrepreneurs worked abroad in software or another related sector before starting their company in Ireland. For example, banking software represents an important niche in the indigenous software industry, and many entrepreneurs involved in this niche gained experience by working in the City of London (Enterprise Ireland, Interview, 14 July 2003). These experiences not only imbued Irish managers with knowledge of global standards and practices but also provided useful contacts and insight into the future development of key markets.

Overseas management experience proved critical to the development of Veritest (a division of Lionbridge Technologies) in Ballina, County Mayo. In 1997 the Dublin-based affiliate of Lionbridge Technologies established a subsidiary in Ballina as a way of reducing costs. The managing director of the Ballina affiliate had previous experience

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with Microsoft, both in Dublin and in the USA. From this experience he identified software quality assurance (QA) certification as an activity of growing importance in the US market. Although viewed as a routine task, he realised that QA certification would eventually be a service demanded worldwide. With this knowledge, he sought to use this activity as an avenue for developing a line of business separate from that of the Dublin affiliate. The Ballina affiliate is no longer a subsidiary of the Dublin affiliate but, rather, now manages all of Veritest's business outside the North American market. When many other ICT firms are shedding labour in light of the economic downturn, Veritest has grown from 40 employees to 165 since 2001. This is one illustration of the benefits derived from returning Irish emigrants during the 1990s, many of whom possessed valuable technical and managerial skills. Whereas Ireland once suffered from a 'brain drain', in the 1990s a 'brain circulation' replaced the 'brain drain' (Saxenian, 2002). Other locations such as Taiwan and Israel have benefited similarly from return migration from the USA and, in the case of Israel from highly skilled immigrants from the former Soviet Union (Bresnahan et al, 2001).

As the pool of managerial skills deepens, Irish managers are proving more adept at winning wider mandates for their Irish-based affiliates. As noted earlier, a significant number of firms have either expanded or upgraded their range of activities. Although much of this is attributable to the developing pool of technical skills and the favourable tax and regulatory regime, local managers play an important role in determining their affiliate's position within the wider corporate network. Affiliates with strategic responsibilities and independent decisionmaking powers are found to be far more likely to upgrade their activities over time than low-level branch plants (Amin et al, 1994). However, rather than the development of a successful affiliate mandate being the product of independence and autonomy, the courting of influence within the corporation proves far more important for altering an affiliate's corporate standing (Molloy and Delany, 1998). As a result, the entrepreneurial nature of Irish managers represents an important contributing factor.

Many Irish affiliate managers recognise the importance of establishing personal relationships throughout the company. For instance, Symantec's managing director actively sought to develop networks within the company through trips to the USA, encouraging site visits for US executives, getting customer and distributor testimonials, and developing strong relationships with Symantec's European sales and marketing offices. By having access to these multiple sources of corporate knowledge, Symantec Ireland was able to prepare and position itself for future expansion opportunities. After developing a track record of success with functions such as software localisation, shared services, and the software security response centre, Symantec Ireland has become the company's European operation hub. As a result, few other locations receive serious consideration when Symantec seeks to locate new operation activities in Europe (Symantec, interview, 19 March 2004).

An entrepreneurial group of managers also influenced Sun Microsystems's Dublin-based affiliate moving from primarily localisation into more development-oriented work. Sun's Irish managers made a concerted effort to lobby their parent continuously for more sophisticated development work. This lobbying, in conjunction with successfully fulfilling their original mandate, allowed the Irish affiliate to win several R&D functions, in spite of competition from US-based Sun affiliates (White, 2004). The Irish government promotes and supports actively this kind of 'intrapreneurial' behaviour, with agencies such as IDA Ireland going so far as to lobby parents on behalf of Irish affiliates (IDA Ireland, interview, 25 July 2003). This emphasis on repeat investments is not surprising given the declining number of greenfield investments worldwide (UNCTAD, 2002). Consequently, the encouragement of Irish affiliates to seek a wider

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range of activities is a stated objective in the current National Development Plan (Department of Finance, 2000).

Although the garnering of greater influence within corporations allows Irish managers to alter their affiliates' corporate standing, this managerial influence also plays a vital role in determining the survival of Irish-based affiliates. The case of Nortel Networks in Galway proves instructive in this regard. Nortel first invested in Ireland in 1973 to perform manufacturing, and during the 1980s grew not only in terms of size but also evolved to take other functions such as sales and a small R&D unit. At its peak in the late 1990s Nortel employed over 1000 people in three different locations in Ireland. That size eventually proved unsustainable, particularly in light of the global downturn in the telecommunications sector. In the subsequent restructuring, Nortel relocated the Irish-based manufacturing operations to other Nortel affiliates or contract manufacturers such as Flextronics and Solectron. Nortel employment in Ireland is now approximately 310 people, split between the Galway affiliate and a small sales office in Dublin. An R&D centre with a global mandate to develop Nortel's call centre technology, however, was left in Galway.

According to a senior manager at Nortel, several factors secured the Galway affiliate's survival. First and foremost, the Galway affiliate developed a consistent track record for meeting its performance goals. This allowed it to build credibility within the company. More importantly, over thirty years the management within the Galway affiliate developed an extensive network of connections throughout the wider corporate network. Irish managers, who had previously left Galway for other positions in the corporation and then returned, established many of these networks. These networks proved vital during corporate restructuring, as the former expatriates knew what key messages to take to which key decisionmakers. As a result, the Galway affiliate put forth a very strategic and coordinated intrafirm lobbying effort. The end result was that the Irish-based affiliate maintained and defended its R&D function against competition from Canadian and French affiliates (Nortel Networks, interview, 21 July 2003).

The movement of Irish-based affiliates away from branch-plant manufacturing and into higher order functions provided Irish managers with the opportunity to cultivate greater influence within their respective corporate organisations. These enhanced managerial skills in turn allowed them to make use of this influence to the benefit of Irish economic development. It was the connections between Ireland and other key agglomerations of economic activity such as Seattle and London that facilitated this process, not just the connections developed endogenously within Ireland. This not only demonstrates the importance of being connected to the world's leading centres of innovation (Bresnahan et al, 2001) but also provides a clear example of how knowledge production and circulation is a product of processes occurring across different scales (Bunnell and Coe, 2001). It required time not only for local firms to build credibility within their wider corporate networks but also for local management to develop skills and circulate throughout other parts of the firm.

## **7 Conclusions**

The growing scale, scope, and complexity of corporate activity diminish the explanatory power of many earlier models in economic geography such as the new international division of labour (for example, Fröbel et al, 1980) or global commodity chains (for example, Gereffi and Korzeniewicz, 1994). Peripheral places no longer depend solely on cost-driven activities cascading from the core, but rather the multiple sources of power and influence within global production networks provide greater opportunity for some of these places to alter their position in the spatial division of labour. Economic geographers continue emphasising the spatial and locational factors driving



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organisational changes, but other factors such as intrafirm relations play equal or often more important roles in the restructuring process (Birkinshaw and Fry, 1998). Greater understanding of the complexity of GPN aids in the challenge of conceptualising where regional development fits within these frameworks of global processes (Henderson et al, 2002). Such an understanding is particularly useful for identifying the global processes that work across different scales and also for providing a starting point for better conceptualising the ways that internationally traded services support and coordinate GPN functions.

These developments contribute to a better understanding of the processes driving industrial change in Ireland. Rather than replicating the success of high-technology clusters such as London or Silicon Valley, Ireland's FDI-led development model allowed it to benefit from its connections to these leading clusters (Bresnahan et al, 2001). Over time the development and accumulation of managerial skills represents a general asset that allows Ireland to manage better the strategic coupling process. Many Irish managers gained skills either abroad or while working in TNCs, thereby demonstrating that sources of innovation and tacit knowledge are not limited to the boundaries of firms; rather, extrafirm and extraregional networks can enhance a region's innovative capacity (Bunnell and Coe, 2001). The importance of these managerial skills has attracted the attention of Irish policymakers, as the encouragement of these skills was a key plank of the strategy laid out by the Enterprise Strategy Group (Forfás, 2004a). This group produced the most recent in a series of reviews of industrial policy over the years, and in addition to emphasising the importance of managerial skills in areas such as supply chain management it also places considerable emphasis on activities in Ireland that involve direct contact between TNC affiliates and their end customers. Although accepting that many of the activities at present remain low on the value chain, Irish policymakers remain confident that the dynamic benefits derived from existing internationally traded service investment provide a useful platform for making the transition to more sophisticated activities.

Although terms such as 'moving up the value chain' and other clichés endemic to the regional development industry often imply a movement into more R&D-related activities, the case studies in this paper demonstrate that other ways exist to enhance affiliate capabilities. The common prescription of moving into R&D is more endemic to the linear thinking associated with manufacturing and simple value chains. For those affiliates moving more into service-related activities, survival is not so much a product of moving up the value chain but of being involved in and managing as much of the value chain as possible. This requires the ability not only to control multiple lines of business but also to develop relationships with key customers. These relationships allow affiliates to cultivate influence both inside and outside their corporate networks and in so doing protect and expand their internal corporate mandate. So rather than upstream product development or downstream sales and marketing, which do constitute important policy objectives for the attraction of FDI to Ireland for the future, much of the current affiliate activity in Ireland is focused on supply chain management, for the EMEA region in particular.

Ireland's recent economic growth reversed its previous image as one of Europe's more impoverished economies. In this respect FDI in general, and FDI in IT and international services particularly, contributes much to this recent period of economic growth. Since the beginning of the 1990s, however, the gradual reduction in manufacturing and the increased emphasis on service activity has somewhat reduced employment figures within foreign-owned firms. Although there are fewer net new jobs, the churning within the internationally traded services sector reflects a process of upskilling, whereby more sophisticated jobs are replacing the lower end services being offshored to Eastern

Europe and Asia. This shift in focus towards internationally traded services is occurring at a time when Irish policymakers are placing greater emphasis on value creation than on employment creation. The involvement of Irish-based affiliates in activities such as R&D and supply chain management means that they now assume greater responsibility within their GPNs. Whether or not Irish-based affiliates continue to build their role in GPNs remains to be seen, but the sustaining of Ireland's economic development necessitates that this process of upskilling continues. Consequently, whether this relative 'success' offers a solid foundation for a longer-term sustainability remains uncertain.

## References

- Amin A, 1999, "An institutionalist perspective on regional development" *International Journal of Urban and Regional Research* **23** 365–378
- Amin A, Bradley D, Howells J, Tomaney J, Gentle C, 1994, "Regional incentives and the quality of mobile investment in the less favored regions of the EC" *Progress in Planning* **41** 1–112
- Balgobin R, Pandit N, 2001, "Stages in the turnaround process: the case of IBM UK" *European Management Journal* **19** 301–316
- Birkinshaw J, 1997, "Foreign-owned subsidiaries and regional development: the case of Sweden", in *Multinational Corporate Evolution and Subsidiary Development* Eds J Birkinshaw, N Hood (St Martin's Press, New York) pp 268–298
- Birkinshaw J, 2000, "Multinational corporate strategy and organization: an internal market perspective", in *The Globalization of Multinational Enterprise Activity and Economic Development* Eds N Hood, S Young (Macmillan, London) pp 55–79
- Birkinshaw J, Fry N, 1998, "Subsidiary initiatives to develop new markets" *Sloan Management Review* **39** 51–61
- Bradley J, 2002, "The computer sector in Irish manufacturing: past triumphs, present strains, future challenges" *Journal of the Statistical and Social Inquiry Society of Ireland* **31** 1–38
- Breathnach P, 1998, "Exploring the 'Celtic Tiger' phenomenon: causes and consequences of Ireland's economic miracle" *European Urban and Regional Studies* **5** 305–316
- Bresnahan T, Gambardella A, Saxenian A, 2001, "'Old economy' inputs for 'new economy' outcomes: cluster formation in the new Silicon Valleys" *Industrial and Corporate Change* **10** 835–860
- Brier, D, 2002, "HP will provide technical support to Microsoft" *Seattle Times* 12 August, page C4
- Bunnell T, Coe N, 2001, "Spaces and scales of innovation" *Progress in Human Geography* **25** 569–589
- CNNMoney, 2002, "IBM job cuts exceed 15,600", 13 August, <http://cnnmoney.com>
- Coe N, 2002, "Globalization, regionalization and 'scales of integration'; US IT industry investment in Southeast Asia", in *Internationalization, Technology and Services* Eds M Miozzo, M Miles (Edward Elgar, Cheltenham, Glos) pp 117–136
- Cooke P, Morgan K, 1998 *The Associational Economy: Firms, Regions and Institutions* (Oxford University Press, Oxford)
- Daniels P W, 2000, "Export of services or servicing exports?" *Geografiska Annaler B* **82** 1–15  
Department of Finance, 2000 *Ireland National Development Plan, 2000–2006* (Stationery Office, Dublin)
- Dicken P, 2003 *Global Shift: Reshaping the Global Economic Map in the 21st Century* 4th edition (Sage, London)
- Dicken P, Malmberg A, 2001, "Firms in territories: a relational perspective" *Economic Geography* **77** 345–363
- Dicken P, Forsgren M, Malmberg A, 1994, "The local embeddedness of transnational corporations", in *Globalization, Institutions and Regional Development in Europe* Eds A Amin, N Thrift, (Oxford University Press, Oxford) pp 23–45
- Doremus P, Keller W, Pauly L, Reich S, 1998 *The Myth of the Global Corporation* (Princeton University Press, Princeton, NJ)
- Economist Corporate Network, 2003, "Shared services—moving into Central and Eastern Europe", Briefing Paper *The Economist* February, pages 1–22
- Eurostat, 2003, "Labour Costs in the EU", news release, 3 March (Eurostat, Luxembourg)
- Flyvbjerg B, 2001 *Making Social Science Matter: Why Social Inquiry Fails and How it Can Succeed Again* (Cambridge University Press, Cambridge)
- Forfás, 2004a, "Ahead of the curve: Ireland's place in the global economy", Forfás, Wilton Park House, Wilton Place, Dublin 2

- Forfás, 2004b, "Annual Employment Survey 2003", Forfás, Wilton Park House, Wilton Place, Dublin 2
- Fröbel F, Heinrichs J, Kreye O, 1980 *The New International Division of Labour* (Cambridge University Press, Cambridge)
- Gereffi G, Korzeniewicz M (Eds), 1994 *Commodity Chains and Global Capitalism* (Praeger, Westport, CT)
- Green R, Cunningham J, Duggan I, Giblin M, Moroney M, Smyth L, 2001, "Boundaryless cluster: information and communication technology in Ireland", in *Innovative Clusters: Drivers of National Innovative Systems* Eds E M Bergman, P den Herteg, D R Charles, S Remoe (OECD, Paris) pp 47–64
- Grimes S, 2003, "Ireland's emerging information economy: recent trends and future prospects" *Regional Studies* 37 1–26
- Gripaios P, Gripaios R, Munday M, 1997, "The role of inward investment in urban economic development: the cases of Bristol, Cardiff and Plymouth" *Urban Studies* 34 579–603
- Henderson J, Dicken P, Hess M, Coe N, Yeung H W C, 2002, "Global production networks and the analysis of economic development" *Review of International Political Economy* 9 436–464
- HotOrigin, 2003, "Ireland's software cluster: winning sales—lessons from the frontline", HotOrigin, 64 Lower Mount Street, Dublin 2
- Hudson R, 1999, "The learning economy, the learning firm and the learning region: a sympathetic critique of the limits of learning" *European Urban and Regional Studies* 6 59–72
- IDA Ireland, various years, "Annual Report", Industrial Development Agency Ireland, Wilton Park House, Wilton Place, Dublin 2
- IDCSTI, 2004, "Building Ireland's Knowledge Economy—the Irish plan for promoting investment in R&D to 2010", report to the Inter Departmental Committee on Science, Technology and Innovation, Department of Enterprise, Trade and Employment, Dublin
- Jones A, 2002, "The global city misconceived: the myth of global management in transnational service firms" *Geoforum* 33 335–350
- Kotler P, Jatusripitak S, Maesincee S, 1997 *The Marketing of Nations* (The Free Press, New York)
- Legendijk A, 1999, "Regional anchoring and modernization strategies in non-core regions: evidence for the UK and Germany" *European Planning Studies* 7 775–792
- Leamer E, Storper M, 2001, "The economic geography of the Internet age" *Journal of International Business Studies* 32 641–666
- Lovering J, 1999, "Theory led by policy: the inadequacies of the 'new regionalism' (illustrated from the case of Wales)" *International Journal of Urban and Regional Research* 23 379–395
- Markusen, A, 1998, "Fuzzy concepts, scanty evidence, wimpy policy: the case for rigor and policy relevance in critical regional studies" *Regional Studies* 33 869–884
- Miozzo M, Miles M (Eds), 2003 *Internationalization, Technology and Services* (Edward Elgar, Cheltenham, Glos)
- Molloy E, Delany E, 1998, "Strategic thinking for multinational subsidiaries", M D L Management Consultants, Dublin
- Mytelka L, 2000a, "Local systems of innovation in a globalized world economy" *Industry and Innovation* 7 15–32
- Mytelka L, 2000b, "Locational tournaments for FDI: inward investment into Europe in a global world", in *The Globalization of Multinational Activity and Economic Development* Eds N Hood, S Young, (Macmillan, London) pp 278–302
- O'Connor R, 2003, "Earning from internal innovation", presentation given at HP European Software Centre, Galway, Ireland, 24 April
- O'Gorman C, O'Malley E, Mooney J, 1997, "The Irish indigenous software industry: an application of Porter's cluster analysis", National Economic and Social Council, 16 Parnell Square, Dublin 1
- O'Hearn D, 1998 *Inside the Celtic Tiger: The Irish Economy and the Asian Model* (Pluto Press, London)
- O'Malley E, 1994, "The impact of transnational corporations in the Republic of Ireland", in *Transnational Corporations and European Regional Restructuring* Eds P Dicken, M Quevit (Faculty of Geographical Sciences, Utrecht University, Utrecht) pp 29–44
- O'Riain S, 1997, "An offshore Silicon Valley? The emerging Irish software industry" *Competition and Change* 2 175–212
- Phelps N, Fuller C, 2000, "Multinationals, intracorporate competition and regional development" *Economic Geography* 76 224–243

- Phelps N, MacKinnon D, Stone I, Braidford P, 2003, "Embedding the multinationals? Institutions and the development of overseas manufacturing affiliates in Wales and North East England" *Regional Studies* **37** 27–40
- Saxenian A, 2002, "Transnational communities and the evolution of global production networks: the cases of Taiwan, China and India" *Industry and Innovation* **9** 183–202
- Schoenberger E, 1991, "The corporate interview as a research method" *The Professional Geographer* **43** 180–189
- Schoenberger E, 1997 *The Cultural Crisis of the Firm* (Blackwell, Oxford)
- Schoenberger E, 1999, "The firm in the region and the region in the firm", in *The New Industrial Geography: Regions, Regulation and Institutions* Eds T Barnes, M Gertler (Routledge, London) pp 205–224
- The Economist* 2003, "The new geography of the IT industry", 17 July, pages 49–52
- The Irish Times* 2003a, "Partners in progress", 4 July, <http://www.ireland.com>
- The Irish Times* 2003b, "Globetrotter comes to rest at head of Oracle's Ireland office", 18 July, page 20
- Turok I, 1993, "Inward investment and local linkages: how deeply embedded is 'Silicon Glen'?" *Regional Studies* **27** 401–417
- UNCTAD, 2002 *World Investment Report 2002: Transnational Corporations and Export Competitiveness* United Nations Conference on Trade and Development (United Nations, New York)
- UNCTAD, 2004 *World Investment Report 2004: The Shift Towards Services* United Nations Conference on Trade and Development (United Nations, New York)
- White M, 2004, "Inward investment, firm embeddedness and place: an assessment of Ireland's multinational software sector" *European Urban and Regional Studies* **11** 243–260
- Yeung H W C, Poon J, Perry M, 2001, "Towards a regional strategy: the role of regional headquarters of foreign firms in Singapore" *Urban Studies* **38** 157–183
- Young S, Hood N, Peters E, 1994, "Multinational enterprises and regional economic development" *Regional Studies* **28** 657–677
- Zanfei A, 2000, "Transnational firms and the changing organization of innovative activities" *Cambridge Journal of Economics* **24** 515–542
- Zysman J, 2002, "Production in the digital era: commodity or strategic weapon?", WP Berkeley Roundtable on the International Economy (BRIE), 147, University of California, Berkeley, CA, <http://repositories.cdlib.org/brie/BRIEWP147>