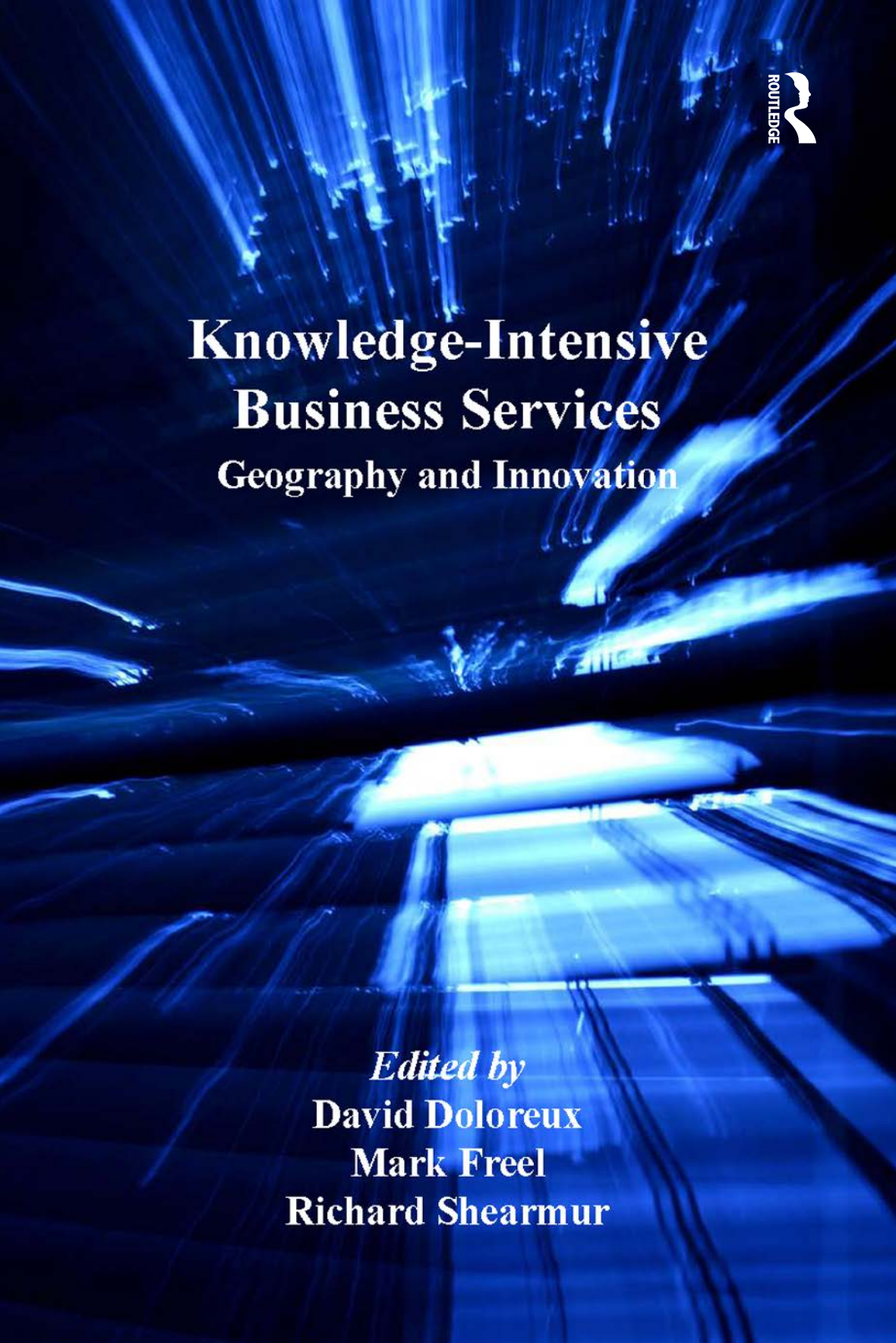
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Geography and Innovation
Edited by
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Knowledge-Intensive Business Services

Geography and Innovation

Edited by

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David Doloreux, Mark Freel, Richard Shearmur
Ottawa and Montreal

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Chapter 1
Introduction

David Doloreux, Mark Freel and Richard Shearmur

1.1 Introduction: The Study of Knowledge-Intensive Business Service and Innovation

The topic of knowledge-intensive business services (KIBS) has received a great deal of attention in the last decade from scholars in different disciplines. Most of the studies deal with key aspects of the economic organisation of KIBS firms, their dynamics, and their competitive strategies in the globalising economy. There is a significant literature on the competitive position of KIBS, but little research about the role KIBS play in regional and national contexts. The objective of this book is to gather in one place a body of empirical work that examines KIBS innovation in varying organisational and geographical contexts. The primary focus is on KIBS and their roles in innovation systems from a geographical and territorial perspective. The book also discusses and investigates the way in which KIBS interact with other economic actors and contribute to innovation dynamics across a variety of scales from the global to the individual.

This book, whilst firmly empirical, presents an up-to-date survey of current knowledge about KIBS with particular emphasis on the connection between KIBS, innovation and geography. The book is the result of several research initiatives related to KIBS in North America (United States and Canada), Europe (Austria, France and Germany) and Nordic Countries (Finland and Norway). Given the common theme that runs through the different chapters (KIBS, territory and innovation), the variety of national and disciplinary contexts enable differences and similarities between research approaches, empirical results and conceptualisations of KIBS in different contexts to be analysed.

The origins of the book reflect a growing interest in service industries in general, KIBS in particular, and their capacity to innovate and/or contribute to innovation in varying regional and national contexts. The foundation for this growing interest is the body of evidence stretching back to the late 1970s that identifies KIBS (or high-order professional services) as the fastest-growing sectors of the economy. This, in turn, is but one element of wider structural changes in OECD economies that have been observed and analysed over the closing decades of the twentieth century, such as the general shift from manufacturing to services.

The way in which KIBS contribute to innovation is manifold, and can be examined from a variety of perspectives, which can be broadly categorised in two ways. First, KIBS are innovators in they own right. They introduce new services,

news methods of delivering services, they explore new markets and marketing techniques, and they must grapple with issues such as intellectual property and appropriating the benefits of their own innovations. Such questions are often explored at the level of the firm or of specific collaborative networks, and require detailed examination of the legal and regulatory contexts within which such firms operate and the way in which the benefits of innovation can be appropriated by the firm (Bader 2006). Indeed, current debates about the possibility of protecting intellectual property in a context where certain nations are more lax than others and where digital media facilitate the reproduction of software, text and images, highlight the saliency of these questions (Johns 2009, Grandstand 2005). Of course, all KIBS are not alike in this respect: large computer services companies, for instance, can identify certain standard products and processes, and these can be legally protected (though legal protection is no guarantee against theft (Johns 2009)). In contrast, management consultants or lawyers – to the extent that they have developed certain products and methods of service delivery or competencies that are specific to the firm – cannot usually patent them. For this type of KIBS it is reputation, social capital and other informal methods that can serve to partially protect the firm's specific products, processes, knowledge and innovations. In some ways this type of protection is more powerful – in KIBS sectors – than formal methods.

The second broad approach to examining KIBS' contribution to innovation is to consider them as part of a wider economic system. The economy as a whole innovates, and KIBS, as vectors of information and knowledge exchange, have become key elements in this innovation process: it is not so much the precise legal and business hurdles faced by individual establishments that are the focus of this type of study, but rather the way in which KIBS establishments interact with, contribute to and draw upon the wider economic system. This approach is often used when innovation systems are considered (Lundvall 1992), and therefore tends to incorporate a geographic dimension. Indeed, from this perspective the global economy is subdivided into smaller systems – countries and maybe regions (Cooke et al. 2004, Lundvall 2007) – which share certain institutions, business cultures, education systems and resources, and which operate under the same legal and regulatory frameworks. Each system operates differently, and the role of KIBS is therefore not necessarily identical in each national and regional context. Furthermore, as KIBS services have grown exponentially over the last three decades, the way in which innovation systems operate given these new actors continues to be of interest.

Of course, these two approaches are not distinct. For instance the capacity firms have of protecting intellectual property is one of the regulatory features that characterise each innovation system (Grandstand 2005). Conversely, the way in which intellectual property rights are enshrined in legislation, and whether or not such laws are effective, reflect regional or national cultures and institutions (Duffy 2002). Thus, whilst acknowledging that many particular items (of which the protection of intellectual property is but one example) contribute to creating the

context within which firms innovate, and whilst recognising that there exists a rich body of research that focuses on the way in which firms grapple with particular aspects of each system, in this book we adopt a broader approach.

Rather than analysing and characterising the multiple ways in which each innovation system differs from the other, we take as our point of departure – as a given – the different contexts within which KIBS operate. These contexts can be either national or regional, or both. Given these different contexts, the chapters in this book seek to understand the various ways that KIBS contribute to economy-wide innovation. In particular we seek to understand the extent to which the role of KIBS, as innovators and as contributors to system-wide innovation, differs across different regional and national contexts.

1.2 Knowledge-Intensive Business Services

Academic (and policy) interest in services appears to have increased in line with services' increasing importance to developed economies. By the early 2000s, the share of the service sector amounted to about 70 percent of total value added and accounted for about 70 percent of total employment in OECD economies (Wölfl 2005). Some 9 out of 10 new jobs in Europe are service jobs (Bryson and Daniels 2007). There can be little doubt that developed economies are largely service economies. Services are now recognised as a dynamic component of national economic activity, and are gaining importance in terms of employment and value added, and North America and Europe are no exception.

As already alluded to above, the term 'services' should not, of course, be taken to indicate some undifferentiated mass of industry. Rather, the service sector is marked by considerable heterogeneity – ranging from retailing, to wholesaling, through architecture and software engineering, public services, through personal services to business services. In the current context, this heterogeneity provides an important point of departure. Of specific interest to us are innovation systems and the innovativeness of individual firms and organisations that comprise these systems. Typically, studies of innovation and of innovation systems have been dominated by accounts of manufacturing firms and the organisations which support technological innovations in manufacturing. Services, where they appear at all in these stories, are merely consumers of innovation: they are the passive adopters of technologies developed by manufacturing (Tether 2001).

Whilst this caricature may comfortably apply to many service industries (such as most personal services),[1] its blanket application has profound implications for economies dominated by services. As Gallouj (2002: 144) notes, such a position may 'preclude serious thought (particularly on the part of the public authorities)

1 Even this generalisation should be tempered: in the province of Québec (Canada), for instance, the retail sector undertakes considerable Research and Development (R&D) in order to improve stock management, logistics and electronic commerce (CST 2003).

about ways of energising an area of activity of great importance for the future of firms, industries and nations'. Recent statistics have shown sharply increasing innovation expenditures within a number of service sectors, even when restrictive indicators, more appropriate for manufacturing innovation, are used (Howells 2000). In particular, KIBS appear to exhibit many of the characteristics of technology-based manufacturing and to act as creative innovators in their own right, rather than as mere adopters and users of new technologies. This in turn, has led some authors to speak of a shifting 'balance of power' in favour of KIBS (Lundquist et al. 2008) or of 'an ongoing redistribution of knowledge in favour of KIBS and away from traditional producers and service providers' (Tether and Hipp 2002: 166). KIBS, from this perspective, occupy dynamic and central positions in 'new' knowledge-based economies.

The evidence pointing to the growing importance of business services is clear. Even beyond the dramatic restructuring of the 1970s and 1980s, KIBS' role in developed economies has continued to grow. The contribution of key business service sectors to OECD value added grew from 24.3 percent to 28.4 percent between 1990 and 2007. Interpreting this growth is not always straightforward. Debate continues, for instance, over the extent to which the growth in business services is due to growth in outsourcing of previously in-house functions, or the growth of new service needs. Competitive pressures and the increasing speed of technical change are likely to imply both the outsourcing of non-core functions for cost reasons and the sourcing of new specialist services to support new activities – though the relative valence of these trends is not easy to assess. However, in this context, it is interesting to note the limited and diminishing component of KIBS demand accounted for by manufacturing.

Although manufacturing-KIBS exchanges dominate academic and policy discussions (and are at the heart of the outsourcing arguments), evidence suggests that a small and declining proportion – less than 10 percent – of KIBS consumption is accounted for by manufacturing firms (Wood 2006). The increasing complexity of services and interdependence between different service establishments therefore suggests that milieu dynamics (the gathering of flexible service teams around key integrators) may characterise some of these activities (Gordon and McCann 2005).

Perhaps a greater challenge to those who would place KIBS at the centre of innovation systems is the charge that much so-called KIBS employment growth has been in routine functions (such as basic accounting or administrative services). Firms engaged in such activities may support employment, but they are likely to have only a limited impact upon the competitiveness of client firms or on innovation systems (Wood 2006). Here again, though, it is difficult to gauge the extent to which this charge is fair. Certainly, many apparent KIBS firms provide 'relatively routine professional, financial and business expertise' and benefit from 'familiarity with clients through repeat business' (Wood 2006: 348). However, others provide sophisticated expertise and, operating in international markets, act as important links to global best practice for local clients. Regardless, a key

challenge for academics and policymakers is to clearly identify the subjects (actors and activities) of interest and to avoid sweeping generalisations and hyperbole when discussing knowledge-intensive business services.

1.3 Innovation

The 'subjects of interest' in this book and the different chapters are those KIBS firms facilitating innovation in their clients or directly innovating themselves. We are interested in innovation and innovators. And, to that end, the distinction between own innovation and client innovation is crucial. KIBS may themselves be the source of innovations – introducing innovations in their own services or in the processes which support the design, production or delivery of those services (Miles 2007). Equally, they can also play a role in the innovativeness of other firms by helping direct the choice and use of new technologies or assisting with organisational restructuring. In the former case (i.e. own innovation), business services have long been recognised as intensive users of new information and communication technologies. However, until relatively recently, the temptation has been to view them as passive adopters of such technologies. Increasingly, however, studies demonstrate the use of such technologies in developing process or service innovations in KIBS.[2] Building upon this picture of services innovation, survey evidence on the innovativeness of business service firms has been provided by successive Community Innovation Surveys (CIS), in Europe, and similar endeavours elsewhere, such as the Survey of Innovation in Canada. These data show KIBS sectors to be reasonably innovative, albeit less oriented towards R&D-based technology product and process innovation than manufacturing. However, there is evidence that innovation within some sub-sectors of KIBS (technology-based or T-KIBS), bears close resemblance to innovation in high-technology manufacturing – in terms of both the volume of innovations and the manner in which they are developed.

Notwithstanding the fact that innovation in KIBS establishments is increasingly studied by way of surveys, an important ambiguity has yet to be resolved with regards how this innovation is characterised. Indeed, many KIBS establishments enter into one-to-one relationships with their clients, and the service (whether it is the design of computer systems, management advice or legal solutions) is customised to fit each client and each project (Miles 2005). Service production and delivery is also customised. It is unclear how this type of customisation should be characterised by researchers, and how it is characterised by survey respondents. On the one hand, customisation is a type of innovation: each project is unique, hence novel, and some survey responses may thus overstate innovation. On the other hand, customisation itself can become routine: each management consultant routinely modifies his or her advice to suit the problem faced by,

2 See, for example, Barras' early work on banking (Barras 1986, 1990).

and the absorptive capacities of, each client: some survey responses may thus understate innovation activity. Indeed, innovation in firms that provide highly customised services – where product and process innovation is routine – may be more meaningfully conceptualised and identified in areas such as human resource management, company strategy and marketing. On the whole, whereas T-KIBS innovation may be approached in a similar fashion to that in manufacturing sectors (though in these sectors, too, product and process innovation may become routine), innovation in other types of KIBS is more difficult to conceptualise and calls for a wider understanding of the nature of innovation which may extend to strategy, management, marketing and service delivery (Evangelista 2006, Camancho and Rodriguez 2008).

KIBS' contribution to client innovation (or elsewhere in the economy) is also a contentious issue. Studies based on the CIS, for example, consistently find services, including KIBS, to be poorly linked into wider innovation systems and supporting institutions (Miles 2005). Djellal and Gallouj (2001: 59), for example, talk in terms of 'the negligible role of public organisations…and universities as sources of innovation' in services. However, whilst there are few public sector research institutes or agencies devoted to services, this need not inhibit their contribution to other organisations' innovations. As Miles (2007: 282) notes, 'KIBS are *business* services not because they exclusively service businesses, but because they deal with *business processes*'. And, whilst much of the activity may be standardised and involve few changes in client organisations (e.g. waste disposal, accounting services, facilities management, and so on), a sizeable proportion supports technical and organisational change. Clearly, T-KIBS, by proffering technology solutions to their clients, will tend to foster technological innovation in clients. Other types of KIBS may support other forms of innovation by, amongst other things, introducing clients to best-practice, by training employees or by altering the way clients tackle problems. Miles (2007: 284) summarises this well:

> As problem solvers, KIBS focus their knowledge on the problems faced by their clients, and potential solutions to these problems. KIBS may effect solutions themselves, provide clients with the tools and skills to do this themselves, or provide clients with the resources that will enable them to better understand their problems and develop means to overcome them

1.4 Geography

In parallel with the growing interest in KIBS' role in the economy writ large there has been considerable work over the last two decades on the geography of these services (Beyers and Alvine 1985, Kirn 1987, Beyers and Lindhal 1996, Coffey and Shearmur 1997, Coffey 2000).

The geographic question has been considered from three sometimes contradictory perspectives. First, it has been argued that fast-growing high value services are

'footloose' – they require little capital, are easy to set up, and can constitute an export base for ailing manufacturing dependent regional economies. This approach drew considerable interest in the late 1980s. However, it has largely given way to the realisation that, even if these services grew faster outside metropolitan areas in the late 1970s and 1980s (Kirn 1987), this may have more accurately reflected the delayed tertiarisation of some regional economies and not a fundamental shift of these activities away from metropolitan areas.

The second, converse, approach is best exemplified by Sassen's (2001) argument relating to global cities. She argues that certain cities are command centres which provide key high-order services to subordinate (and not necessarily geographically contiguous) hinterlands. In many ways this approach is a restatement of the Christallerian idea that there exists a hierarchy of service centres with the more complex and higher-order services locating in progressively larger (and more central) cities. In these large cities high-order services draw upon the local presence of key clients, qualified labour and related services – benefit, in short, from agglomeration economies – and deliver their services across large distances by virtue of the central location and converging transport networks that provide good access to remoter clients.

A final approach is that suggested by Cooke and Leydesdorff (2006): they suggest that business services are key components of local innovation systems. Even if they are not necessarily innovating or growing fast themselves, the services contribute to the overall functioning of territorially embedded networks and innovation dynamics.

Empirical evidence clearly shows that KIBS locate towards the top of the urban hierarchy (Shearmur and Doloreux 2008). Given their relative scarcity in many smaller cities it can be deduced that either establishments in these cities have little recourse to these services or that the services are delivered across distance. Although there are no doubt cases where KIBS contribute to local innovation dynamics, inferences from the geographic evidence suggest that in many cases KIBS contribute to local innovation systems from the outside, therefore suggesting that innovation systems may not, in fact, operate at such a small scale (Lundvall 2007). However, there is little direct systematic evidence of the way in which KIBS are accessed and delivered across space.

These geographic concerns may appear marginal to some KIBS researchers precisely because there are so few KIBS outside of most nation's largest cities: the context in which KIBS are studied is almost always that of large cities and metropolitan regions. However, if it is true that establishments increasingly require access to KIBS in order to obtain specialised management and technological advice (as has been argued above), then the way in which KIBS are accessed from smaller cities and remote areas is of key concern to economic geographers and to local development agencies. If this access can occur across large distances, then it will indicate that certain components of 'local' innovation systems need not necessarily be local, and will emphasise the importance of connectivity to other regions for local economies. However, if it can be shown that successful local

innovation systems are those that have their own local KIBS sectors, then their absence should be of concern to local policy makers.

1.5 Organisation of the Book

The reader will note some equivocation in our opening comments. This is an inevitable consequence of the relatively recent attention devoted to services innovation, generally, and KIBS innovation specifically, in empirical studies. Though the body of empirical work is growing, many questions remain unanswered (and, even, unaddressed). This book, then, is self-consciously empirical. The essays in this collection have in common that they all empirically explore the changing role of KIBS in the wider economy. From the early 1970s when producer services were viewed as almost parasitic to the productive primary and manufacturing sectors (Cohen and Zysman 1987), through the 1980s and 1990s when they were increasingly viewed as productive (exporting) sectors in their own right and as evidence of the increasing complexity and functional specialisation and the economy (Illeris 1996, Daniels 1985), the view today is that these sectors play a key role in knowledge transmission, information exchange and, by extension, in economy-wide innovation processes (Wood 2002). As mentioned in the introductory paragraphs of this chapter, it is within this last paradigm that the following chapters are set.

Apart from the unifying paradigm, the period in which this book is published and the current economic dynamics and priorities, these chapters are connected along three key dimensions. The first is epistemological: whilst employing different research techniques, the chapters all take a resolutely empirical approach. Indeed, whilst there are a growing number of case studies that reflect the current paradigm, so far much of the evidence that obtains to the geography, roles and interaction between firms in the knowledge economy remains focused on the manufacturing sector. The data driven nature of this collection provides a unique body of evidence that sheds light on the generalisations currently being made about KIBS, their role in the economy and their innovative behaviour. In particular, this empirical focus puts into relief the problem associated with precisely defining what is meant by 'KIBS'. At a time when the very notion of classifying establishments according to their end product is being questioned (Daniels and Bryson 2002), the way in which KIBS establishments are identified is an important element in each contribution.

The definition, and function, of KIBS may vary according to national, and local, culture and institutions. A second dimension that unites the chapters is that of context: covering different national and regional contexts within North America and Europe, the contributions can be read in a comparative light. Each positions KIBS within an international, national or urban context and examines their interaction with other actors in the economy. Although the evidence put forward in this collection suggests that the role KIBS are playing in Western post-industrial societies is relatively similar, certain key differences also emerge. For instance, the