

## Re-thinking 'peripherality' in a knowledge-intensive service-dominated economy

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# **Re-thinking ‘Peripherality’ in the Context of a Knowledge-Intensive, Service-Dominated Economy**

## **Abstract**

This mainly conceptual chapter aims to re-consider the meaning and implications of ‘peripherality’ in the context of a contemporary European economy where service activities have become more important and competition is said to have become more knowledge-based. In doing so, it brings together two areas of literature that have been hitherto disconnected, namely research on peripherality and peripheral regions and research on the spatiality of knowledge-intensive business services (KIBS). The chapter has three main sections. First, the meaning and prior usage of the term of ‘peripherality’ - particularly in relation to economic development – is reviewed and a multi-dimensional understanding of the concept is articulated. Second, the meaning and implications of peripherality in the specific context of KIBS is explored and reconsidered. The discussion here explores the tradability of services, recent work on ‘temporary geographical proximity’ and the potential impact of virtual accessibility (via ICT). This leads to the proposal of a tentative continuum of peripherality in KIBS covering four types of location from ‘core’ to ‘extreme periphery’. Finally, some avenues for future research are outlined. Business travel, temporary geographical proximity and the spatial costs facing service firms in ‘non-core’ locations are identified as important topics for further study.

## **1. Introduction**

There has been a long-standing interest in peripherality and its economic implications among policy-makers in the European Union (e.g. Keeble et al, 1988; European Commission, 2001). This mainly conceptual chapter aims to re-consider the meaning and implications of peripherality in the context of a contemporary European economy where service activities have become more important and competition is said to have become more knowledge-based. It seeks to assess the consequences of recent changes in the realms of business, work, travel and technology for the predicament of regions traditionally regarded as ‘peripheral’, and for the competitiveness of the firms in these regions. In doing so, it brings together two areas of literature that have been hitherto disconnected, namely research on peripherality and peripheral regions and research on the spatiality of knowledge-intensive business services (KIBS) – a group of activities that epitomize key aspects of the contemporary knowledge-intensive, service-dominated economy. This is a novel line of inquiry because previous research on (economic aspects of) peripherality in Europe has tended to overlook ‘tradable’ service sectors, and because prior research on KIBS has typically focused on ‘core’ and densely populated urban economies, whilst neglecting more peripheral economies and the service firms located therein (Hermelin and Rusten, 2007).

An underlying premise of this chapter is that the shift towards a more knowledge-intensive, service-dominated economy necessitates a re-appraisal of the meaning and implications of ‘peripherality’. Established (economic) understandings of peripherality have tended to focus on the fact that firms in peripheral regions are disadvantaged by

higher (distance and time-related) costs associated with the transportation of physical goods (e.g. raw materials, agricultural produce or manufactures) to core European markets (e.g. Keeble et al, 1982; Keeble et al, 1988). However, the continuing relevance of this work must be questioned as a result of changes in economic structure - notably the 'rise of services' - and also because of improvements in transportation (e.g. better road and rail infrastructure, declining transport costs, and the rise of air travel) and, possibly, advances in ICT (Copus, 2001). In fact, these various changes have led some economists to call for a wholesale re-appraisal of industrial location theory due to dramatic changes in the spatial transaction costs facing modern firms (McCann and Shepherd, 2003; Glaeser and Kohlhase, 2004). Thus, taking the example of KIBS activities, it is pertinent to ask: in what 'sense' should a location now be regarded as peripheral? Which places should be considered part of the periphery? And what competitive disadvantages (and advantages) does a peripheral location confer on individual firms/actors? These questions have clear policy relevance. For example, policy-makers in Europe's 'north-western periphery' (e.g. Northern Ireland, Irish Republic) have shown increasing interest in 'tradable services' as they struggle to reposition their economies in the face of international economic and corporate restructuring (Enterprise Ireland, 2008; DETI, 2009) but they need to develop a better understanding of the possibilities and limitations for KIBS development in their regions.

As a first step in attempting to address some of the issues outlined above, this chapter starts by reviewing the meaning and prior usage of the term of 'peripherality' - particularly in relation to economic development - and by articulating a multi-dimensional understanding of the concept. The meaning and implications of

peripherality in the specific context of knowledge-intensive business services (KIBS) is then explored and reconsidered. The tradability of services, recent work on ‘temporary geographical proximity’ and the potential role of virtual accessibility (via ICT) are all discussed before a tentative continuum of peripherality in KIBS is proposed. The chapter concludes by outlining some themes for future research on peripherality and KIBS.

## **2. Peripherality: Bringing a Fuzzy Concept into Focus**

Peripherality could be described as a ‘fuzzy concept’ since it arguably lacks clarity, is difficult to operationalise and possesses multiple meanings (Markusen, 1999). Notably, many empirical articles in the field of regional studies have employed the description ‘peripheral region’ without adequately specifying what is understood by this label; i.e. in what ‘sense’ particular regions are peripheral? This section deconstructs and seeks to define the term and (selectively) reviews its prior usage, particularly in relation to economic development. A multi-faceted understanding of peripherality, suitable for this chapter’s aims, and potentially more widely, is developed and articulated.

As a starting point, it is argued here that ‘peripheral’ and ‘peripherality’ must be understood – at least within regional studies and related fields - as fundamentally geographical terms, since attempts to broaden their scope beyond the geographical (e.g. ‘aspatial peripherality’ after Copus, 2001) risk contributing to the fuzziness of the concept. This geographical interpretation is consistent with most prior usage in regional studies and related fields (see below). In seeking to develop an understanding of the

terms periphery, peripheral and peripherality, Danson and DeSouza (2008) present a list of synonyms and antonyms including: distant, fringy, hinterland, remote, ‘non-core’ (synonyms) and core, centre/central, accessible, middle (antonyms). Most of these synonyms and antonyms support the geographical interpretation suggested above. They also imply that peripherality should be regarded as an inherently relational concept, in that ‘the periphery’ must be defined in relation to something else (i.e. ‘the core’ or ‘centre’) and in the sense that ‘peripherality’ as a condition is characterized or constituted by relations (between the core and the periphery). Further, this relational character of core and periphery is implicitly characterised by connotations of power and/or inequality; for example, Anderson (2000) suggests “the periphery is best understood as a subordinate of the core” (p.92).

These facets of peripherality have, of course, been recurrent themes in regional economic analysis and economic geography over many decades. For example, the idea of core and periphery is present (either explicitly or implicitly) in both classical models of economic growth and land use - such as Alonso’s (1964) theory of urban land use or Myrdal’s (1957) cumulative causation – and in structuralist and political-economic perspectives on uneven development – such as Wallerstein’s (1974) world systems theory or Massey’s (1984) spatial divisions of labour. Reflection on these studies reveals a fourth important facet of peripherality, namely its multi-scalar nature; whilst Alonso’s work suggests a core-periphery gradient at the urban scale, Myrdal’s focuses on the inter-regional or national scale, and Wallerstein’s analysis identifies core, semi-periphery and periphery within the world economy.

Some prior work on peripherality has attempted to identify different types of peripheries – for example, rural/agricultural, declining industrial or sparsely populated peripheries (see Fuduric, 2008). Although this typology approach may be helpful in certain practical contexts - such as attempts to examine a region's endogenous resources for entrepreneurship or tourism, it does not provide a robust basis for defining the concept of peripherality. The problem here is the focus on visible characteristics of regions, which may or may not be causally linked to their peripherality. Hence, there is a need to clearly distinguish between the condition of peripherality, its observable consequences/impacts and other features of 'peripheral regions' that are not directly (causally) related to peripherality. Here, Copus (2001) provides a useful distinction between three sets of elements: 'causal', 'contingent' (influenced by the causal elements) and 'associated' (associated with peripherality but not clearly linked to causal elements). From a definitional point of view, it is the causal elements that are crucial. Copus identifies two causal elements of peripherality, as follows: (1) increased travel and transport costs (expressed either in financial or time penalty terms) resulting from remoteness relative to the main centres of population and economic activity; (2) the absence of agglomerative advantages enjoyed by less remote (i.e. 'core') locations.

When it comes to moving beyond the theoretical towards more practical considerations, operationalisation or application of the concept of 'peripherality' inevitably raises the issues of measurement (peripheral to what? how peripheral?) and impact (how and for whom does peripherality matter?). Classical accessibility studies within Europe have been primarily concerned with the first causal element of peripherality identified by Copus (2001); i.e. greater travel and transport costs associated with remoteness or

inaccessibility from centres of economic activity. Thus, peripherality has been seen as synonymous with relative (integral) accessibility to some measure of economic mass (e.g. GDP) or population, where accessibility is the ‘product’ of transportation systems (e.g. Keeble et al, 1982 and 1988; Spiekermann and Neubauer, 2002). The resulting accessibility indices attempt to measure the relative peripherality of various regions in terms of their ‘market potential’. The practical utility of these exercises is open to question though. In a study of the impact of a peripheral location for manufactured goods with a low value-to-weight ratio, the focus on the costs of transporting goods by road to ‘core’ markets from peripheral regions may well be appropriate. However, in a study of ‘traded’ professional services, for example, it might make more sense to focus on the constraints imposed by ‘daily accessibility’ (via high-speed rail or air) at the level of the individual (Vickerman et al, 1999). These arguments suggest peripherality must be seen as a context-dependent condition that matters in the sense that it has consequences for (impacts on) particular types of actor; e.g. firms or individuals engaged in specific types of economic activity.

The second of Copus’ (2001) two elements of peripherality (the absence of agglomerative advantages) has arguably been given less detailed consideration in literature on peripherality - perhaps due to the focus on ‘measurable’ costs associated with the transportation of physical goods or an outdated, manufacturing-centric view of the economy. Here, Keeble (1976) usefully observes that a potentially significant disadvantage of a peripheral/inaccessible location concerns the difficulties this poses for maintaining beneficial close and frequent face-to-face contact with customers, suppliers and various professional services (in the dominant of a central region). Keeble’s



analysis also emphasizes the privileged access to rich information and knowledge sources enjoyed by firms located in a dominant metropolis ('core' region), a point echoed in recent work on 'buzz' and the urban economy (e.g. Storper and Venables, 2004). These interaction and information-related disadvantages of peripherality are likely to be increasingly important in today's knowledge-driven economy and deserve greater attention in future research.

A final notable facet of peripherality that deserves attention is its temporality. It is evident that peripherality is dynamic (i.e. it may change over time); regions labelled 'peripheral' might undergo a process of (de)peripheralisation. This temporality may have two dimensions. First, the position of a region on any given measure or indicator of peripherality (and the consequences of this peripherality) may change over time; for example, as a result of infrastructure investments or changes in the cost of transportation. Second, the dimensions of peripherality that 'matter', or the ways in which they matter, might change over time; for example, the shift from a manufacturing-based to a services and knowledge-based economy may mean transport accessibility for physical goods becomes less important and other forms of accessibility (e.g. business air travel or broadband connectivity) become more so.

### **3. Knowledge-Intensive Business Services and Peripherality**

In keeping with the argument that peripherality is context-dependent and matters because it has consequences for particular types of actor, and in pursuit of the overall chapter aims, this section explores and reconsiders the meaning and implications of

peripherality in the specific context of knowledge-intensive business services (KIBS). After some general comments on the nature of KIBS, the geography of KIBS and the role of face-to-face contact in existing explanations of urban dominance are first discussed. The often-assumed need for permanent co-location between KIBS firms and their clients is then questioned using empirical evidence on the tradability of KIBS, recent conceptual work on ‘temporary geographical proximity’ and insights on the spatial impact of information and communication technologies (ICT). The potential implications of these themes for our understanding of peripherality in the KIBS context are then weighed up and a ‘continuum of peripherality’ is tentatively proposed.

#### The nature of knowledge-intensive business services

An important and widely recognised structural change in developed economies over the last few decades has been the rising importance of services (Bryson and Daniels, 2007). Scholars have been particularly interested in knowledge-intensive business services (KIBS), which are said to be increasingly important within developed economies - both in terms of employment creation and new firm formation and because they play a key role in driving or facilitating innovation (Wood, 2002; Anyadike-Danes and Hart, 2006). KIBS include activities such as: accountancy and auditing; management consultancy; advertising, marketing and public relations; legal services; recruitment and executive search; architectural, engineering, design and technical consultancy; and computing and ICT services<sup>1</sup>.

KIBS have a number of key characteristics: they are delivered on a business-to-business basis (rather than to consumers) and are often ‘co-produced’ with their clients; they are typically customised rather than standardised; and they depend heavily on the embodied knowledge, skills and expertise (including traits like personality, creativity and performance) of professional and technical staff to create value (Faulconbridge, 2006; Bryson and Daniels, 2007). As a result of these attributes, many (though not all) KIBS activities involve close face-to-face (F2F) interaction between providers and their clients, although the precise frequency, duration and intensity of this F2F interaction varies from service to service (Illeris, 1994; Goe et al, 2000). A final point to note is that, despite the presence of some large transnational businesses in certain sub-sectors, the KIBS sector as a whole is dominated by small independent firms. In the UK, for example, SMEs account for around 70% of employment and turnover in the business services sector<sup>2</sup>.

#### Face-to-face contact and the geography of KIBS

Over the past two decades, there has been considerable research on the geography of KIBS activities. This work has shown that KIBS are very unevenly distributed, with concentrations typically found in major urban regions, especially around world cities and national capitals (e.g. van Dinteren and Meuwissen, 1994; Coe and Townsend, 1998; Wood, 2002; Aslesen and Jakobsen, 2007). Attempts at explaining these patterns have frequently stressed the continuing importance of F2F interaction between KIBS vendors and their clients in the ‘performance’ (co-production and delivery) of these activities (Goe et al, 2000; Coffey and Sheamur, 2002; Keeble and Nachum, 2002;

Wernerheim and Sharpe, 2003; Jones, 2007). Thus, Goe et al (2000) assert that “[F2F] contact requirements are the service industry’s equivalent of transportation costs” (p.133). Whilst observing that the required frequency, duration and intensity of F2F contact between vendors and clients will vary according to the type of service being supplied, these authors assert that vendors of services requiring frequent and intense F2F interaction (typical of many KIBS) are likely to locate in close geographical proximity to their clients as this minimises transport costs, allows greater time efficiencies (e.g. immediate meetings, if required), and satisfies clients’ desires for managerial control. Since the key clients of KIBS vendors – such as corporate headquarters, government departments and high-order financial establishments - are typically concentrated in major metropolitan areas, this results in concentrations of KIBS in these same core regions (i.e. co-location).

Two other contributions provide further insights on why F2F contact between KIBS vendors and their clients remains so important. Here, Coffey and Shearmur (2002) point to certain characteristics of KIBS, and of human nature more generally. They note that most high-order services are embodied in human beings and involve co-production; that negotiation of a contract and the exact specification of a client’s requirements necessitate a considerable amount of inter-personal contact; and that vendor-client interaction involves the exchange of dialogical information, which has qualitative-subjective characteristics that cannot easily be communicated via telecommunications. Similarly, Storper and Venables (2004) argue that F2F contacts continue to provide unique advantages in certain economic exchanges, and should therefore be seen as a key force for, and advantage of, urban concentration. Specifically, F2F is argued to be an

efficient communication technology (e.g. high frequency, rapid feedback, visual cues); to promote trust and incentivise relationships; to facilitate screening and socialization; and to provide psychological motivation for both parties.

Overall, a key inference from the existing literature on the spatiality of KIBS is that such activities are unlikely (or, at least, much less likely) to emerge or locate in places that are geographically distant from major urban concentrations of KIBS demand because of the requirement for F2F interaction in the performance of many of these service activities. Conversely, core metropolitan regions are seen as privileged locations because they facilitate frequent and intensive F2F interaction between KIBS vendors and their clients as a result of physical co-location or close geographical proximity. Thus, it might be argued that the term ‘peripheral’ - in a KIBS context - should be applied to all locations that are not in close proximity to major concentrations of KIBS demand. However, as the ensuing discussion will argue, this simple starting position needs to be nuanced in a number of respects.

#### The tradability of KIBS and temporary geographical proximity

There are clearly some powerful arguments as to why F2F contact remains an important influence on the geography of many KIBS activities. However, it is pertinent to consider whether the need for F2F interaction between vendors and clients necessarily precludes the emergence of KIBS firms in places that are distant from metropolitan core regions, as is often implied in the literature. And, therefore, should all locations outside these cores necessarily be regarded as peripheral in a KIBS context? Two important

points to be considered in answering these questions concern the tradability of some KIBS and the possibilities of ‘temporary geographical proximity’. Firstly, although a majority of KIBS are located within urban core regions and sold locally, there is considerable empirical evidence that certain KIBS activities are ‘tradable’ - i.e. they can be sold beyond their immediate region, and in some instances beyond national borders (e.g. Beyers and Alvine, 1985; Wood et al, 1993; Illeris, 1994; Aslesen and Jakobsen, 2007). Secondly, as Rallet and Torre (2009) have recently observed, the need for co-presence in business transactions (to capitalise on the benefits of F2F contact) does not necessarily require permanent co-location of the parties to those transactions. Thus, Rallet and Torre (2009) highlight the possibility of satisfying F2F contact needs by travelling to different locations (i.e. engaging in business travel) and introduce the concept of ‘temporary geographical proximity for business and work coordination’ (TGP) to describe this situation.

Taken together, evidence on the tradability of KIBS and insights on the possibilities of TGP suggest that, *ceteris paribus*, it may well be possible for certain types of ‘exporting’ KIBS firms to exist in locations beyond metropolitan cores, particularly in places that have sufficiently good transport accessibility (for example, via air travel or high-speed rail) to allow KIBS actors to engage in F2F meetings with clients located in core regions. Although this argument has not been explicitly articulated in the literature on KIBS to date, some earlier empirical studies did contain hints in this direction. For example, Keeble and Tyler (1995) observed the growth of dynamic and innovative specialised business service firms in ‘accessible rural areas’ of England that offered quality-of-life (and other cost-related) benefits but allowed relatively easy access to

corporate clients in London and South East England. Similarly, Beyers and Lindahl's (1997) study of small, niche-focused, exporting producer service firms in rural areas of the United States noted that many of these firms used air commuter services to travel to F2F meetings at client offices in major cities.

The above arguments suggest the need for a more nuanced understanding of peripherality in the context of KIBS. In particular, they indicate the possibility of an intermediate category of locations between the two extremes of 'core' (locations in close geographical proximity to metropolitan concentrations of KIBS demand) and 'periphery' (locations where F2F meetings with KIBS clients are physically impossible, or prohibitively expensive, due to poor business travel accessibility). These intermediate locations - here termed the 'accessible semi-periphery' - are places with good enough transport accessibility to metropolitan concentrations of KIBS demand to allow KIBS actors located there to effect sufficient F2F interaction with their clients, without having to co-locate in close physical proximity to them. Further, it can be suggested that recent accessibility improvements - brought about by developments in transport infrastructure and services, notably low-cost air travel - might have led to a 'de-peripheralisation' of certain regions (or parts of regions) that were traditionally regarded as peripheral, and therefore increased the number of places in this intermediate category.

The possibilities and limitations of ICT and virtual accessibility

A further issue that demands consideration here is the role of information and communication technologies (ICT). Recent advances in ICT (e.g. the Internet, email,

mobile telephony and video-conferencing) are said to have the potential to ‘annihilate distance’ for some types of activities and interactions (Golob and Regan, 2001). This points to the possibility of substituting ‘virtual accessibility’ for physical accessibility in certain KIBS interactions, which would have implications for our understanding of peripherality. To consider whether ICT advances have made particular KIBS activities more viable in regions traditionally regarded as peripheral, it is important to establish under what circumstances, and for what types of activity, virtual accessibility offers an adequate substitute for physically co-present F2F interaction.

In the absence of specific research on the impacts of ICT and e-commerce on business and producer services (Beyers, 2003), we must turn to the literature in urban planning and transport studies for insights. Here, Mokhtarian (2009) has recently argued that only a minority of activities requiring travel for F2F can be substituted by ICT since: (1) some activities have no ICT enabled counterpart (physical co-location of people is required; e.g. surgery, childcare); (2) because ICT substitution is not always feasible (e.g. when infrastructure and services are not ubiquitous); and (3) because for other activities the ICT counterpart is judged to be inferior and not desirable compared to the perceived benefits of F2F and co-presence. Whilst Mokhtarian’s first point seems less applicable to KIBS, her second point highlights that the absence of adequate ICT infrastructure in particular places may act as a constraint on the development of KIBS that are potentially ICT-enabable. Her third point echoes the earlier-mentioned arguments of Coffey and Shearmur (2002) about the difficulty of communicating dialogical information with qualitative-subjective characteristics via telecommunications and implies that many contact-intensive KIBS activities are



unlikely to be conducive to virtual accessibility due to the strong inherent advantages of (physically co-present) F2F interaction between KIBS vendors and their clients. This argument is usefully illustrated in the case of videoconferencing by Rallet and Torre (2009), who argue that the limitations of current technology mean exchanges are much less rich than physically co-present F2F meetings and, as a result, video-conferencing is currently most likely to be used where interactions are simple or when the distance between parties is so great that travelling is too expensive.

Additionally, there seems to be an emerging consensus in the geography, urban planning and transport studies literature that virtual accessibility via ICT is more likely to complement or supplement rather than substitute for physical co-presence (e.g. Aguilera, 2008; Mokhtarian, 2009; Rallet and Torre, 2009). In a KIBS context, this might mean KIBS actors using video conferencing and email communication as a supplement to their (co-present) F2F meetings with clients. The implication for our understanding of peripherality in a KIBS context seems to be that locations which do not readily permit F2F meetings with core-concentrated KIBS clients – either through co-location or temporarily via business travel - are likely to be ‘off limits’ to most KIBS activities regardless of the availability of ICT. However, ICT may play a useful supporting role for KIBS firms located outside the core but with adequate transport accessibility to it, as these firms may use virtual accessibility to supplement or complement their use of business travel and TGP. Overall, it seems that the geography of contact-intensive KIBS activities is unlikely to be significantly altered by ICT in the short term, and that TGP facilitated by business travel is far more likely than ICT to alleviate the disadvantages facing firms in locations traditionally regarded as peripheral.

## Towards an understanding of peripherality in KIBS

The arguments developed in this section have provided some foundations for a re-assessment of the meaning and implications of peripherality in the context of knowledge-intensive business services. In keeping with earlier arguments, this re-assessment recognises that ‘peripherality’ is necessarily a geographical and relational concept, that has consequences for particular groups of actors and is context-dependent. Thus, it is proposed that peripherality in KIBS should be defined primarily in relation to urban concentrations of KIBS demand, with an emphasis on the advantages conveyed by proximity or accessibility between KIBS vendors and their clients, a focus on the implications for KIBS firms and professionals (e.g. their viability and competitiveness in particular locations), and an acknowledgement that the precise ‘map’ of peripherality will likely vary between different KIBS sub-sectors and activities.

An important starting point for any re-assessment of peripherality must be to explicitly acknowledge the ongoing importance of physically co-present F2F interactions between KIBS vendors and their clients as one of the most important influences on the location of KIBS activity, and a powerful incentive towards the concentration of these activities in major metropolitan regions, such as those around world cities and national capitals. As a result, it seems highly unlikely that the aggregate geography of KIBS activities within Europe will change significantly in the foreseeable future. Nevertheless, the discussion above has outlined some conceptual grounds for believing that certain locations within regions previously regarded as peripheral within Europe might be (or

have recently become) more viable locations for (some types of) KIBS activities than has traditionally been assumed. In particular, it has been suggested that improved air travel and high-speed rail connectivity to key centres of KIBS demand, coupled with good broadband access and other ICT innovations, might have produced ‘islands of accessible semi-periphery’ within such regions, notably around key provincial towns and cities. Thus, it is possible to conceive of a continuum of peripherality in KIBS, whereby locations are primarily differentiated according to their accessibility to concentrations of KIBS demand and by the frequency, duration and intensity of the F2F client contact requirements in specific KIBS sub-sectors and activities (Table 1).

Table 1 describes a tentative continuum of four types of location: core, semi-periphery, periphery and extreme periphery. This categorisation is somewhat stylised and is not meant to imply that solid lines of demarcation could be drawn on a map. Core locations offer the benefit of easy access to numerous co-located clients as well as unmatched transport connectivity to secondary urban centres of demand. As a result, the most contact-intensive KIBS activities will be compelled to locate here. In addition, based on the UK experience, such locations are likely to offer additional benefits to KIBS firms such as ‘local buzz’, economies of scale and scope arising from a large and sophisticated client base, and access to a rich pool of skills and talent (Keeble and Nachum, 2002), although diseconomies of agglomeration may also be experienced. By comparison with the core, semi-peripheral locations do not afford the same level of access to many KIBS clients but access to the key concentrations of demand is possible due to good transport connectivity, which facilitates business travel by KIBS actors to effect TGP. Based on the UK experience - and thinking of cities such as Belfast,

Glasgow and Newcastle in particular – such ‘semi-peripheral’ locations are likely to suffer the limitation of small and unsophisticated local demand but may offer compensating benefits to KIBS firms including a competitive cost base (e.g. lower office rents and wages) and an abundant and stable pool of skilled labour. This mix may prove attractive for firms in KIBS sub-sectors with low-to-moderate (frequency/intensity/duration) client contact requirements (e.g. technical and management consultancies, custom software developers). As suggested earlier, locations should only be classed as ‘peripheral’ when they suffer from relatively poor accessibility to core KIBS markets, making difficulties for KIBS vendors to engage in F2F interaction with clients. Such locations may also be characterised by additional competitive disadvantages and may only be viable for a handful of KIBS activities with very infrequent and low intensity client contact requirements (Table 1). Finally, the description ‘extreme periphery’ is reserved for locations that are physical inaccessible to major centres of KIBS demand (due to poor business travel possibilities) and have weak ICT infrastructure. Such places are not likely to be viable locations for KIBS.

#### **4. Some Avenues for Further Research on KIBS and Peripherality**

On the basis of the arguments presented in this chapter, it is possible to suggest a number of avenues for further research at the interface of the literatures on KIBS and peripherality. Three inter-related themes are briefly discussed here.

Business travel accessibility, temporary geographical proximity and non-core locations

The earlier discussion has pointed to the importance of F2F contact in the performance of most KIBS activities. It has also been argued that KIBS firms located outside core regions, including some places traditionally regarded as peripheral, might be able to effect sufficient F2F interaction with their core-located clients by using business travel and TGP, thus avoiding the need for permanent co-presence/co-location. This argument implies that the business travel accessibility of a location, which will be a product of transportation systems, should be regarded as a key indicator of its peripherality in a KIBS context. Although the concept of accessibility to economic activity has often been central to past research on peripherality within Europe (e.g. Keeble et al, 1982; Spiekerman and Neubauer, 2002), there is a need to re-focus attention on the movement of key individuals (professionals) in the KIBS context. A focus on business travel accessibility might yield new insights into the geography of KIBS activities, and the meaning of peripherality in KIBS, and there would seem to be scope for incorporating appropriate accessibility indicators (e.g. measures of 'daily accessibility') into quantitative analyses of KIBS location.

Although the potential importance of business travel in enabling F2F meetings has recently been documented in several studies of globalising professional service firms (e.g. Faulconbridge, 2006; Jones, 2007), the role and importance of business travel is presently under-researched in both economic geography and transport studies (Aguilera, 2008; Faulconbridge et al, 2009). Importantly, from the point of view of this chapter, there appear to be few existing studies examining the use of business travel by firms located in non-core and 'peripheral' regions. In one of the few studies to date, international air travel is suggested to have played a key role in enabling and

underpinning the internationalisation of Dublin-based software firms (Wickham and Vecchia, 2008). Further research along these lines is urgently required. It would also seem to be important for future research to examine whether recent advances in transportation (e.g. improved air connectivity) have made it easier (or more viable) for KIBS firms located in non-core regions to compete for business (and access knowledge) in core metropolitan markets<sup>3</sup>.

In terms of future research, there is a need to develop a more detailed understanding of the frequency of use and role/motivations for business travel among key KIBS professionals. This should then be related to a clearer grasp of the specific F2F contact requirements of particular KIBS activities broken down to the level of the individual work task. In the absence of appropriate official statistics, it seems that business survey and case study evidence are most likely to fill these gaps. Novel methodological approaches, such as ‘space-time diaries’ for key KIBS actors (grounded in a time-geographic perspective) might also provide new insights on these conceptually important issues.

Temporary geographical proximity and ‘urban buzz’

One question that has received only passing attention in this chapter and merits further detailed consideration elsewhere concerns the implications, in the KIBS context, of what Copus (2001) termed the second causal element of peripherality – i.e. the absence of agglomeration advantages. Of particular interest in the KIBS context are what Keeble (1976) termed the ‘interaction and information-related advantages of agglomeration’

that accrue to firms located in ‘core’ regions, which have recently been captured in the notion of ‘buzz’ in the urban economy (Venables and Storper, 2004). Existing research on KIBS has shown that ‘core’-located firms benefit, in terms of learning and innovation, from their numerous interactions with clients, partners and various other actors within a metropolitan urban economy (e.g. Keeble and Nachum, 2002; Wood, 2002). This has traditionally been seen as disadvantaging KIBS firms located outside ‘core’ regions. However, there would seem to be a case for further empirical investigation on this point. Specifically, it seems important to examine the extent to which occasional F2F interactions achieved via business travel and TGP are sufficient to allow firms located at a distance from metropolitan core regions to capture or ‘tap into’ the interaction and information-intensive ‘buzz’ of the metropolitan economy and overcome the costs of not ‘being there’. One recent study that seems to challenge the accepted wisdom on this question has suggested that geographical proximity between KIBS firms and their corporate clients is not always required for effective learning and innovation (Aslesen and Jakobsen, 2007).

#### Spatial costs facing firms in non-core locations

A final avenue for future research on KIBS and peripherality concerns the ‘spatial costs’ facing firms in non-core locations. As noted earlier, some economists have suggested that the spatial transaction costs facing firms have changed radically over recent decades (McCann and Shepherd, 2003; Glaeser and Kohlhase, 2004). The increased travel and transport costs (expressed either in financial or time penalty terms) resulting from remoteness from major centres of economic activity have long been portrayed as a key

causal element of peripherality (Copus, 2001). In traditional analyses, however, this argument has been associated with the transportation of physical goods (Keeble et al, 1982). Based on the arguments presented here, it would seem more important – in the KIBS context - to consider travel and transport costs from the perspective of KIBS professionals travelling to and from F2F meetings with clients. Such travel and transport costs have received little detailed attention in the literature on KIBS but their potential significance has been suggested in several studies (e.g. Illeris, 1994; Goe et al, 2000). What is lacking at present is a full and detailed understanding of the various ‘spatial costs’ facing KIBS firms in non-core locations, and an appreciation of the significance of these costs for firms’ overall competitiveness. At a minimum, such analysis should attempt to consider both the direct costs of travelling to do business F2F with clients and the opportunity costs of the time that KIBS professionals spend travelling. These costs should also be weighed against possible cost advantages resulting from a non-core location (e.g. lower office rents and wages).

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Table 1. A tentative continuum of peripherality in the context of KIBS

Location type	Accessibility to core markets	Other relevant economic factors/logics	KIBS possibilities
Core/metropolis (and secondary urban centres)	Proximate, good for business travel and good ICT infrastructure	Local buzz, scale and scope of demand, rich skills, high costs	KIBS of all types, especially those with high client contact requirements (where TGP is inadequate)
Semi-periphery	Adequate for business travel and good ICT infrastructure	Unsophisticated local demand, good supply of skilled labour, competitive costs	KIBS with low-to-moderate client contact requirements (where TGP is sufficient)
Periphery	Poor for business travel and good or adequate ICT infrastructure	Weak local demand; poor general business infrastructure; some high costs; paucity of skilled labour	Only certain KIBS with zero or infrequent client contact requirements
Extreme periphery	Very poor for business travel and/or weak ICT infrastructure		Tradable KIBS generally not viable

Notes: Business travel potential judged in terms of airline (or high-speed rail) connectivity (and costs in money and time); ICT infrastructure quality judged in terms of Internet bandwidth, cost and connectivity; competitive costs judged in terms of commercial office rents, business rates, utility costs, skilled labour costs, etc; client contact requirements judged in terms of frequency, intensity and duration (after Goe et al, 2000).

Source: author.

## NOTES

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<sup>1</sup> Ian Miles (Manchester Business School) proposes a differentiation between P-KIBS (traditional professional services such as accountancy and law), T-KIBS (technology-related services such as computer services and engineering services), and C-KIBS (business services that involve production of creative content creative, such as advertising, design, and architecture, and perhaps marketing). Source: 'Towards a Working Definition', 10 December 2009, <http://knowledgeintensiveservices.blogspot.com> (accessed 15/01/10).

<sup>2</sup> These approximations are based on data from the UK Annual Business Inquiry for Section K 'Real estate, renting and other business activities' during 2000-05 (Source: Office for National Statistics).

<sup>3</sup> When seeking to gauge the overall economic impact of improved air connectivity on peripheral regions, rather than the specific impact on individual KIBS firms and actors, it will be important to consider the 'two-way road problem' or 'Appalachian effect'. Prior research on the regional economic impacts of transport infrastructure investments has shown that new connections between core and peripheral regions can have unpredictable economic impacts on the peripheral region (SACTRA, 1999). For example, the benefits of improved access to core markets for peripheral region firms may be outweighed by negative competitive effects in the opposite direction.