Producer Services and Systems of Flexible Production

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Summary. During the decade of the 1980s, regional science began to devote more and more attention to the influence of two phenomena upon the structure and functioning of the space-economy: (1) service activities, in general, and producer services, in particular; and (2) flexible production systems. This paper explores the extent to which these two major preoccupations of contemporary regional science can be integrated, and attempts to contribute to the understanding of the growth and location of producer services by examining the manner in which an analytical framework based upon flexible production may be applied to the latter. The exploration begins with a summary and criticism of the flexible production approach. This is followed by a discussion of the growth of producer services and of the trends towards the increasing externalisation of these activities. Next, the appropriateness of employing a flexible production framework in the case of producer services is examined. The significance of the concept of flexible production for understanding the location of producer services is then explored. Finally, the paper examines the effects upon the labour force of flexibility in the production and use of producer services.

1. Introduction

In the view of an increasingly wide range of authors, flexible production (or flexible accumulation) has become the driving force underlying the restructuring of the space-economies of many industrialised nations. Indeed, since the mid-1980s researchers have increasingly employed a flexible production framework in their analysis of the structure and evolution of both national and regional economic systems. In this context, it is therefore surprising to note that, with very few exceptions (e.g., Moular et al., 1988; Scott, 1988a; Christopherson, 1989; Beyers, 1990; Coffey and Bailly, 1991; Wood, 1991), analyses of flexible production systems have completely ignored the role played by service activities. On the one hand, certain services represent basic elements of the manufacturing process, and are often essential for achieving flexibility; on the other hand, many services may be viewed as production systems in their own right, and thus are characterised by specific strategies designed to achieve flexibility.

The omission of services from the flexible production literature is especially difficult to understand given the strong performance of service activities relative to manufacturing in all developed economies over the past 15 years. Producer services, especially, have been the subject of particular attention on the basis of their growth rates, their acknowledged status as an important component of a region's export base, and their strategic role in promoting
innovation and technological change in
other economic sectors (Marshall, 1988;

This paper explicitly seeks to explore
the role of producer services in systems of
flexible production, as well as the manner
in which the flexible production frame-
work can be extended so as to include these
high-order service functions. The approach
adopted here is conceptual rather than
empirical; indeed, at present, there are few
empirical investigations of these issues in
the literature. Our exploration begins with
a brief summary of the characteristics of
flexible production. This is followed by a
discussion of the growth of producer ser-
vices and of the trend towards the increas-
ing externalisation of these activities. The
appropriateness of employing a flexible
production framework in the case of pro-
ducer services is then examined, followed
by an analysis of the ways in which a
knowledge of flexible production aids us to
understand the location of producer ser-

2. Flexible Production

A flexible production system, it is often
argued, is the antithesis of the rigidities
inherent in the Fordist system of mass
production. As its name implies, the basis
of a flexible production system is flexibility
of production processes and labour mar-
kets; its principle dimensions include:
(1) programmable, and hence flexible,
forms of production automation;
(2) socially fragmented, but inter-con-
nected and organisationally pliable,
units of economic activity; and
(3) more fluid labour market structures.
The hallmark of flexible production is
vertical disintegration. Here, the entire
production process is not internalised by
one enterprise, as in the case of vertical
integration. Rather, the main enterprise
controls only the final product and the key
technology; activities that are not strategic
to the production process itself, together
with the production of parts, components
and ancillary services, are contracted-out
to other firms. An inter-firm, inter-establish-
ment structure thus emerges, one in which
a network of small and medium-sized
specialist enterprises supports the activi-
ties in the main establishment. The func-
tioning of this type of production system
relies upon the social division of labour,
that is the division of labour between
firms. Here production becomes more ex-
ternalised among a set of individual firms
with input–output linkages and, in organi-
sational terms, more flexible; the notion
of ‘the firm as an organisation’ is re-
placed by that of ‘the organisation of
firms’ (Scott, 1988b). In addition, the
internal economies of scale and scope that
have characterised traditional Fordist
modes of production are replaced by exter-
nal economies of scale, creating intense
agglomeration economies.

3. Producer Services: Growth and
Externalisation

Producer services are intermediate-de-
mand functions that serve as inputs into
the production of goods or of other ser-
vices; they enhance the efficiency of oper-
ation and the value of output at various
stages of the production process, broadly
defined so as to include activities that are
both upstream and downstream of actual
production (e.g. research and develop-
ment, marketing). A wide range of empiri-
cal evidence (e.g. Gershuny and Miles,
1983; Daniels, 1985; Bailly and Maillat,
1988; Marshall, 1988; Beyers, 1989; Coff-
ey and McRae, 1989; Illeris, 1989) has
demonstrated that producer services oc-
cupy a major and expanding role in the
space-economies of developed countries.

Where the production of either goods or
services is concerned, producer service
inputs may be provided either internally
by the firm or the establishment itself, or
externally by a free-standing specialist
firm. While the extent and the growth of
employment in free-standing producer ser-
service firms have been more readily documented, the magnitude and increase of non-production employment in the goods-producing sectors are also quite significant. For example, in 1981 approximately 30 per cent of employment in Canada's goods-producing sectors was non-production related (Coffey and McRae, 1989); this figure rises to over 50 per cent in certain sub-sectors such as chemical products and petroleum refining.

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**Producer Service Growth**

The rapid growth of producer services involves several factors related to the increasing complexity of both the external environment of the firm and its internal organisation. In general, the amount of information that a firm must process (gather, store, analyse, distribute) is continuously increasing. The opportunities and constraints presented by its social and economic environment, as well as those imposed by its internal structure and functioning, need to be constantly evaluated. In addition, certain interventions or adjustments must often be initiated as a result of this process of evaluation.

More specifically, the following factors are widely recognised to play significant roles in producer service growth (Coffey and Bailly, 1991). *First*, there have been transformations in which goods and services are produced. Here the trend has been towards increased *product innovation and differentiation*. The research and development, design, advertising, marketing and distribution aspects of the production of goods and services have thus become increasingly important.

*Second*, transformations have also occurred in how goods and services are produced. In parallel with product innovations, process innovations are also occurring. New tasks, functions and techniques have appeared in the organisation of production systems, permitting greater efficiency and rapid adjustment to changing economic circumstances. The pace of technological change, in particular, has forced a growing number of firms to seek specialised help or to develop specialised capacities, notably in fields such as information processing, industrial engineering, process design and research.

*Third*, the national and international environments within which firms must operate are becoming increasingly complex, in terms of finance, production and distribution. Functions relating to raising capital, foreign exchange and mounting or resisting take-overs and/or mergers are occurring over wider geographical areas. Firms must also be increasingly concerned with the development and exploitation of foreign markets, the maintenance and administration of relations with foreign affiliates and trading partners, and the direction of offshore production and sales units.

*Fourth*, the increased government intervention and regulation that characterise certain (mostly European) developed nations have necessitated reactive and proactive responses by firms seeking to conform to the norms imposed by society. In addition, however, this expanding regulatory framework has increased the consumption of producer services by the various levels of government themselves. *Finally*, the range of tasks related to the internal management and administration of the firm, and to the co-ordination of inter-firm transactions, has expanded rapidly. The more complex the firm becomes, and the more intricate each of its individual elements, the greater the need for a general management function whose task is to choose strategies, plan, organise, co-ordinate and control at all levels.

All of the functions referred to above require the intervention of specialists—engineers, lawyers, accountants, management consultants, advertising professionals, and so forth—who can analyse situations, process information, produce required documentation, and assist in decision-making.
The Externalisation of Producer Services

A given firm or establishment has the choice between providing some or all of its producer services internally through its own personnel, or purchasing these inputs from separate specialist organisations. The latter, free-standing producer service activities, have achieved the highest rates of employment growth among all sectors of advanced economies (141.2 per cent in Canada over the period 1971–81, according to Coffey and McRae, 1989). These activities now account for between 25 and 30 per cent of the US’s GNP (Noyelle and Stanback, 1984; Beyers, 1989), the equivalent of that resulting from the physical production of goods; in most European countries producer services create over 20 per cent of the GNP (Bailly and Maillat, 1988).

In view of the growing economic significance of free-standing producer services, it becomes important to understand the factors that induce a firm to purchase these inputs externally, rather than to provide them internally. The principal factors identified in the literature may be summarised as follows. First, firms are subject to in-house technical limitations. While consuming greater quantities of producer services, the capacity of a given firm to develop the level of expertise required to provide effectively a particular service input may be restricted by knowledge, personnel or cost limitations. Second, advantages of external economies are associated with the contracting-out of services. Firms are often able to purchase specialised producer services from outside sources less expensively than they can provide them internally due to scale economies in the specialised free-standing service firm.

Third, where the required service inputs involve highly diverse and constantly shifting mixes of information and expertise, and where the demand for these inputs is both sporadic and unpredictable, it may not be economically feasible for a firm to engage sufficient personnel to deal effectively with the entire range of demand. Fourth, there are certain economic and organisational advantages in maintaining a small and highly focused pool of human resources. Many firms seek to restrict their activities to core functions, those that they accomplish better than other organisations; the remaining service inputs are purchased externally. Finally, firms may reduce their costs of participation in social insurance programmes and of other overheads through the externalisation of service inputs. Similarly, the risks associated with unstable demand for particular services are transferred to the external service supplier.

The latter four factors, in particular, are explicitly related to the concept of flexible production; indeed, they help to define the notion of flexibility in a production system. It is interesting to note, however, that the majority of these factors were first identified in the management economics literature (Chandler, 1977; Williamson, 1981; Leibenstein, 1987). A multi-divisional (or M-form) governance structure has long been recognised as having a greater degree of autonomy and flexibility than alternative forms; it is the result of the organisational strain of trying to cope with increasing complexity. Thus the M-form corporation takes on many of the properties of, and is usefully regarded as, a miniature market system, and provides a high degree of operational flexibility, both in terms of the sources and mix of available inputs, and in terms of its ability to minimise the transaction costs of acquiring these inputs.

4. Producer Services: Growth, Vertical Disintegration and the Social Division of Labour

Is the growth of producer services (both internal and external) real or illusory? Certain authors (e.g. Gershuny and Miles, 1983) have argued that the increase of producer services is largely a statistical
artifact due to an elasticity of demand greater than unity, and a lower level of productivity compared to the goods-producing sector. In addition, it has been argued that the 'growth' of free-standing producer services may simply be due to a displacement effect—i.e. the shift away from in-house service production by firms and towards their external purchase from specialised establishments.

The empirical evidence concerning these issues is categorical, however not only has producer service growth been found to be real, but output and employment growth have been achieved in internal and external producer services simultaneously; a displacement of internal services is not occurring. Illeris (1989) comes to this conclusion after reviewing a wide range of European research, as do McCrackin (1985), Tschetter (1987), Kutscher (1988) and Beyers (1989) in the context of the US economy. “Thus our research indicates little support for the argument that the growth of producer services is illusory, attributable to the transfer of certain occupational categories out of the goods sector” (McCrackin, 1985, p. 20). Beyers (1989) argues that much more producer service growth has resulted from fundamental changes in the types of services consumed than in the simple externalisation of certain functions. Technical change within the services in both ‘product’ and process appears to have been a more significant factor than the exploitation of economies of scale in given pre-existing producer service activities (i.e. an internal-external shift).

As defined in the literature, the principal characteristics underlying a flexible production system are vertical disintegration and the social division of labour. Given that vertical disintegration (the net displacement of internal producer services to free-standing firms) is not occurring, is it inappropriate to apply the notion of flexible production to producer services? Logically, if the presence of vertical disintegration is a necessary element of flexible production, the response is affirmative. The situation must, however, be viewed in a more nuanced manner. The key characteristic of a flexible production system is not vertical disintegration, narrowly defined to indicate the divestment of functions (here, internal producer services) on the part of firms, but rather a deepening social division of labour—that is, an incremental growth of the proportion of external activities utilised due to the complex set of reasons identified in the previous section. This phenomenon is indeed occurring in the area of producer services, where available evidence clearly indicates a proliferation in the number and the utilisation of specialised establishments. Thus, using a less rigid interpretation of the characteristics of flexible production, there is no logical difficulty in interpreting the dynamics of producer service activities within this context.

5. Producer Services and Flexible Production

With very few exceptions, the flexible production framework has completely ignored producer services; rather, it has been restricted to the analysis of manufacturing activities, specifically dealing with the vertical disintegration of material inputs (parts and components) among a network of independent sub-contractors. In the present section, we explore the manner in which the scope of the flexible production framework may logically be extended so as to include producer service activities. This extension involves two specific elements: (1) the explicit acknowledgement of producer services as inputs in the goods production process; and (2) the increasing vertical disintegration or unbundling of activities within producer service establishments themselves.

In the first case, producer services may simply be grafted onto the existing goods-production focus of the flexible production approach. As exemplified by the work of Piore and Sabel (1984), Holmes (1986),
Scott (1988b) and others, the flexible production framework represents a highly incomplete perspective on the modern production system, in which the fabrication of goods and the production of services are highly integrated. Manufacturing inputs include more than raw materials, parts and components, and labour; as we have seen, services play an important and expanding role in the production of goods. The forward and backward linkages of a manufacturing enterprise involve not just the transport of physical objects, but also the communication of information, expertise and technical ability. Thus, a manufacturing establishment's substitution of externally-purchased service inputs for internally-provided services may be seen to represent a form of organisation by which the establishment in question is able to increase the level of flexibility of its production process. In addition, as Hatch (1987) notes, many service activities play a strategic role in facilitating the operationalisation of the flexible manufacturing concept, which places heavy demands on the firm's ability to co-ordinate and to manage the flow of production.

The second case, involves the increasing externalisation and specialisation of inputs purchased by producer service establishments themselves. As in the case of the goods-producing sector, producer service activities are increasingly marked by a social division of labour; firms are becoming more and more specialised as the range of services available becomes increasingly diversified, and as evolving technological changes require narrower and deeper types of expertise. Similar to the well-known situation in high technology manufacturing, much of this social division of labour occurs through spin-offs of key employees from existing service firms and results in a dense network of intra- and inter-sectoral firm linkages (Marshall, 1988). Thus, as in the case of high technology manufacturing and of other 'new production ensembles', the producer service sector is characterised by high levels of new firm formation and of small firm growth (Wood, 1991). Further, increases in complexity and inter-penetration within the producer service sector have created new and rather intricate corporate structures.

As in the case of manufacturing activities, the externalisation of functions within producer service establishments causes internal economies of scope to be replaced by external economies of scale as a set of highly specialised producers interact with one another. The advantages of this externalisation of producer service inputs are analogous to those resulting from the external purchase of services by a manufacturing establishment: firms may obtain increased flexibility, substitute variable costs for fixed costs, and spread their risk in several ways. Logically, a firm will seek to externalise services with high fixed costs; if the volume of work is changing, unused capacity may be avoided through the purchase of services from sub-contractors at peak periods or when a rare need occurs. Externalisation also puts the risk of coping with periods of unstable demand on the sub-contractor. In these respects, the process of service production is directly comparable to the goods-production process.

Under what conditions is the externalisation of functions within producer service establishments likely to occur? In addition to the factors identified in Section 3, the following conditions (which are similar to the circumstances identified by Scott (1988b) under which an extensive social division of labour is apt to occur among manufacturing firms) are likely to lead to externalisation. First, where complementary producer services have widely varying scales of production. Small firms may contract out certain tasks (e.g. legal counsel or tax accounting) because they do not have the volume of demand required to employ economically the specialised personnel required to perform the function internally. Conversely, specialised subcontractors (e.g. in the legal or tax fields) can achieve internal economies of scale by
pooling a wide range of external demand. Second, where segmented labour markets prevail. Here the possibility exists for some work tasks to be sub-contracted out from firms in high-wage primary labour market sectors (e.g. technical and professional occupations) to firms in lower-wage secondary labour market sectors (e.g. maintenance, security or data-input personnel). Third, where the spatial agglomeration of producer service activities exists. In this situation, external transaction costs will fall due to close physical proximity, encouraging the social division of labour.

6. The Spatial Dimension

What are the implications of flexible production for producer service location? Before addressing this question, it would be useful to review briefly the conventional wisdom concerning the effects of flexible production methods upon manufacturing location. As in the case of the narrower application of flexible production to manufacturing activity, its extension to producer services has implications at both inter-regional and intra-regional scales.

Geographically, the Fordist system is said to have generated large industrial conurbations (e.g. Detroit, Birmingham and the Ruhr valley), possessing essential agglomeration economies; only plants not needing to avail themselves of such benefits were able to decentralise. With the rise of flexible forms of production, and due to the imperatives of increased international competition, the geography of economic activity began to change (Scott, 1988b). At the inter-regional level, it has been argued that the range and diversity of feasible locations have been greatly extended, all the more so when the shift to flexible production is accompanied by a high degree of technological innovation and by the rise of new production ensembles (e.g. high technology industries). The result is both the internal restructuring of older industrial regions and the expansion of production activity into 'new industrial spaces'. The latter phenomenon is related to a number of factors (e.g. higher rates of unionisation, rising land prices and local taxes, and increasing congestion and pollution) which render traditional manufacturing regions increasingly unattractive to new industrial investments, in general, and above all to the formation of flexible production complexes. These new growth centres based on flexible production systems often tend to be found in places such as Silicon Valley, Phoenix or Boulder—areas that are either socially insulated or geographically isolated from the main foci of earlier industrialisation (Scott, 1988b).

At the intra-regional (metropolitan) level, it is argued, the system of flexible production creates the spatial clustering, in various locations, of functionally differentiated and organisationally distinct enterprises which exhibit close forward and backward linkages. By concentrating in geographical space, the linkage costs of vertically disintegrated producers can be reduced. Thus, the social division of labour provokes spatial agglomeration as a way of lowering external transaction costs. On the other hand, however, because it lowers costs, agglomeration also encourages the further social division of labour and the in-migration of new producers (Scott, 1988b).

Inter-regional Scale

At the inter-regional level, the spatial behaviour of producer service firms motivated by considerations of flexible production is somewhat different from that of manufacturing establishments. In the latter case, as we have seen, flexible production has sometimes encouraged the creation of 'new industrial spaces' isolated from traditional industrial centres. In the case of producer services, however, activity has generally remained concentrated in large metropolitan areas, many of them in the traditional industrial heartlands (Noyelle and Stanback, 1984). Table I indicates
the high degree of spatial concentration in
the Canadian space-economy, where the
three largest metropolitan areas account
for 53 per cent of national producer service
employment. The imperatives of flexible
production do not negate the factors that
have created the metropolitan concentra-
tion of producer services; on the contrary,
flexibility in the production of producer
services is actually facilitated by these
factors, which combine to create massive
economic scale. The factors promoting spatial concentration and facili-
tating flexible production may be summar-
isied as follows.

First, a pool of appropriately skilled
human resources. There is general agree-
ment in the literature that human re-
sources represent the principal factor un-
derlying the location of producer services;
the latter are generally much more labour
intensive than manufacturing. Since la-
bour is a factor of production with limited
mobility, especially in the current era of
two-breadwinner households, the job must
often come to the person. On the one hand,
many producer services require a labour
force with high qualifications, as manifest
in a professional, university-type educa-
tion. Generally, a significant concentration
of highly educated people is found in
metropolitan areas: not only is this where a
large proportion of them have been edu-
cated, but they are also attracted by high
quality cultural and public services and by
the large labour market. On the other
hand, increasing externalisation within
high-order producer services also requires
a pool of labour with lower qualifications.
Such personnel are similarly available in
metropolitan areas.

Second, opportunities for backward link-
ages. Like manufacturing, the production
of intermediate-demand services requires
a particular mix of inputs. The spatial
proximity between producer services and
the sources or creators of knowledge, infor-
mation and technical ability is crucial. A
given producer service establishment must
therefore have linkages to specialised con-
sultants, complementary producer services,
research institutions, universities, govern-
ment organisations, hardware produ-
cers and so forth. In general, such
facilities are available in greater scope and
quantity in large urban areas.

Finally, opportunities for forward link-
ages. Here the market for producer ser-
dices is the issue. Approximately one-half
of the output of the producer service sector
is typically purchased by other service
establishments; a wide range of empirical
evidence has shown that the latter tend to
be concentrated in metropolitan areas.
Further, in those cases in which producer
services are purchased by the manufactur-
ing sector, it is generally not by the production units themselves but, rather, by head offices or regional headquarters (Marshall, 1982, 1985). As corporate control and its associated spatial division of administrative functions tend to be highly concentrated in a small number of large metropolitan areas (Noyelle and Stanback, 1984; Daniels, 1985). It follows that the demand for producer services will be similarly concentrated. Thus the spatial pattern of corporate headquarters imposes a marked centralising influence upon the location of producer services (Wheeler, 1988). Further, the linkages between producer service establishments and head offices are becoming even stronger and more self-reinforcing than in the past. As firms increase their product range and their use of technology, so their need for specialised producer services increases.

Where both forward and backward linkages are concerned, the concentration of producer services in a small number of large cities enables the transaction costs associated with the production and delivery of such services to be minimised. In particular, it is the cost of maintaining face-to-face contact between the producers, on the one hand, and their inputs and markets, on the other hand, that is potentially the most expensive element of intermediate-demand service production; this expense can be significantly reduced by spatial agglomeration. Evidence indicates that, unless the information transmitted is relatively standardised, new telecommunication technologies cannot be successfully substituted for face-to-face contact (Törnqvist, 1970; Pred, 1975; Gottmann, 1977). The conventionally held view that telecommunication technology will supplant face-to-face contact and thus produce a decentralisation of producer services may be over-optimistic. On the contrary, it is possible that evolving telecommunications technologies will have the effect of increasing the concentration of these activities.

In sum, in large cities these forces of agglomeration tend to produce what may be termed a 'complex of corporate activities'; the spatial clustering and mutual symbiosis of (1) the head or divisional offices of primary, secondary and tertiary sector firms; (2) high-order financial establishments; and (3) the producer service firms that provide inputs to the first two types, as well as to each other. This complex of corporate activities is analogous to the complex of manufacturing activities that characterises a 'new industrial space', in terms of its tightly woven network of input-output linkages. Thus the agglomerative tendencies that are commonly identified as one of the hallmarks of 'new' methods of flexible production are a well-established phenomenon among producer service firms. Further, with increasing vertical disintegration in the producer service sector, the external economies of such corporate complexes are becoming more pronounced.

Intra-regional Scale

At the intra-regional level, the spatial behaviour of producer service activities is generally analogous to that of manufacturing establishments in new industrial spaces: a geographical clustering of functionally different enterprises which exhibit close forward and backward linkages. More so than in the case of manufacturing, however, this clustering tends to occur in major metropolitan areas. Such spatial concentration is most evident in the case of the above-mentioned 'complex of corporate activities', which establishes itself in the central business district of a large urban area in order to facilitate face-to-face contact. The spatial concentration of producer services in the CBD is, however, only one element of a more intricate locational pattern. Associated with the increasing social division of labour in this set of activities is a spatial separation of: (1) high-order 'front office' functions that require face-to-face contact, and thus remain centralised; and (2) routinised 'back
office' functions that do not necessitate high-level personal contact, and may thus 'decentralise' in order to take advantage of cost savings associated with 'peripheral' locations. Unlike the case of manufacturing, however, when the 'decentralisation' of producer service functions occurs, it tends to be towards the suburbs of the same metropolitan area in which front office functions are located (Marshall, 1985; Moss and Dunau, 1986; Nelson, 1986).

While the lower land prices of non-CBD locations certainly play a role in the decoupling of back office functions, the structure of the metropolitan labour market may also be an important factor (Nelson, 1986). Metropolitan areas are generally characterised by extremely segmented labour markets: highly skilled, expensive professional personnel are juxtaposed with lower skilled, relatively inexpensive (and possibly part-time) labour. While the former type of labour input is necessary for many kinds of producer service functions, particularly those found in the CBD, many routinised or standardised functions can be carried out by the latter type. Further, the latter type of labour is generally characterised by higher levels of instability; these kinds of workers tend to be non-unionised and non-organised and thus are likely to offer minimal levels of resistance to erratic and insecure conditions of employment. The possibility of utilising such labour inputs adds considerably to the flexibility of a firm. In the manufacturing sector, it is principally immigrants and women who play this role; organised male labour forces that were formed under the Fordist system are highly rigid and are actively avoided by firms operating under the flexible production system (Scott, 1988b). In the case of producer services, certain authors (e.g. Nelson, 1986) have argued that producer service back offices tend to locate in suburbs to ensure the supply of a large and flexible labour force, primarily composed of suburban housewives. This point of view is not universally accepted, however; in certain cities, producer service back offices employ large proportions of males and full-time workers (Huang, 1989).

In sum, the result of the locational response of producer services to the structural and locational characteristics of the metropolitan labour force is a functional segmentation of metropolitan space. To the extent that certain producer service functions are actively attempting to avoid the rigidity associated with the downtown primary labour market, the suburbs of metropolitan areas have begun to play the role of the 'new industrial spaces' of the service era.

7. Conclusion
The rise of flexible production methods in both goods-producing and service-producing sectors has stimulated the growth of producer service activities; on the other hand, however, increases in the number and variety of available producer services have clearly contributed to the development of flexible production systems. It must be emphasised that the types of processes that have been considered in this paper did not just suddenly appear when the term 'flexible production' entered current usage. Rather, such processes have existed to varying degrees for centuries, within both manufacturing and service production activities; however, these processes have become increasingly present during the past decade.

A modern economy must be regarded as an integrated system in which the fabrication of goods and the production of services are not viewed as dichotomous functions but, rather, as intersecting zones along a continuum. In this respect, the vast majority of research on flexible specialisation in manufacturing, which entirely ignores the role of producer services in the production process, represents a highly fragmentary view of both production systems and the available methods for achieving flexibility.

Although supported by the relevant liter-
ature, the approach taken here has remained at a conceptual level. The arguments that have been presented concerning the relationship between producer services and flexible production require further and systematic empirical investigation. For example, what types of producer services are most subject to the social division of labour? Is this process increasing over time? Are there spatial variations in the level of externalisation of particular producer service functions? Do the motivations, factors and processes underlying the decision to externalise specific types of producer services vary according to establishment or firm size, geographical area, or sector? What is the role of labour-force structure in inducing externalisation? What is the impact of technical change on the decision to externalise producer services?

Many of the issues that have been raised in this paper will specifically involve a micro-level of investigation. Indeed, it is clear that, in order better to understand the observed macro-scale patterns and processes of producer service activity, it is necessary to devote more attention to the underlying micro economic factors and mechanisms.

References


