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A Schumpeterian Perspective on Service Innovation

by

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Abstract
Decades after services outdistanced manufacturing from an employment perspective, manufacturing has continued to dominate economic analyses, including innovation studies. As a reaction to this a new strand of service innovation studies has emerged within the last decade. These studies do not aim to compare innovation in services directly with innovation in manufacturing, rather they aim a studying distinctive features of service innovation. This has among other things resulted in the development of new, service-specific innovation concepts. However, as this paper seeks to demonstrate, these concepts imply a merging of actual innovation with activities such as learning and codification of knowledge. Whereas learning and codification of knowledge are closely related to innovation, the inclusion of activities that e.g. require or result in learning, but neither result in new products, processes, markets nor organisational structures, in the definition of innovation, moves these studies away from the Schumpeterian heritage of innovation studies. This further implies that the meaning of innovation as an economic concept becomes unclear. There is thus a need for a conceptual strengthening of the new service innovation studies in order for them to contribute to the development of a so-called 'synthesis approach' to innovation, which has a broad and conceptually solid – perspective on innovation, whether this is carried out in manufacturing, in services, or in a grey area embracing both.

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I. Introduction

The vast majority of innovation studies focus on technological innovation within manufacturing, reflecting that innovation theory has its roots in a time where manufacturing was still the major economic activity. Thus decades after services[1] outdistanced manufacturing from an employment perspective, manufacturing has continued to dominate innovation studies. Studies of service innovation are still in a relatively early development phase, where approaches applying a traditional manufacturing logic to service innovation exist alongside approaches that view services as distinctive activities. The development of an approach that takes the blurring boundaries between manufacturing and services into account, and thus applies a perspective on innovation that is not restricted to the traditional manufacturing-services dichotomy, is a natural next step. Such a synthesis approach (Coombs and Miles 2000) can apply findings from service innovation studies in bringing to the fore aspects of innovation, which have hitherto been neglected in relation to manufacturing innovation, but are in fact widely distributed across the economy.

The studies of service innovation as distinctive activities have the potential of contributing to the development of such a synthesis approach to innovation by pointing to features of innovation which have been largely ignored in studies taking a traditional, technology focussed manufacturing approach to innovation. But it is argued in the following, that the service specific studies, in their effort to stress the peculiarities of services, are moving away from the basic theoretical foundations for studying innovation. This is illustrated by confronting the notions of innovation proposed in service specific studies with the original Schumpeterian perception of innovation.

It is further argued that a more strict definition of innovation in service specific studies would open up the floor for a discussion of the importance of *innovation-related* topics such as learning and codification of knowledge in services. This would contribute to building a bridge between service and manufacturing innovation studies in stead of widening the gap between the two. Since service and manufacturing activities are becoming increasingly more

[1] The definition of services has been subject to much discussion (for proposed definitions of services see e.g. Hill 1977, Riddle 1986, and Metcalfe and Miles 2000). The definition debate will not be entered here, in the present

intertwined it is necessary to work towards developing a common framework for studying these activities in stead of maintaining the dichotomy between the two.

II. The rise of services

The United States was the first economy to become a 'service economy'. Fuchs (1965) illustrated that since the mid-1950's only a minority of the employed US population has been involved in the production of tangible goods, and accordingly introduced the term 'service economy' to describe this state of employment dominance by the service sector. The gap in relative employment between the two main sectors has increased ever since – in 2000 75% of the US labour force was employed in services.[2] Although countries are lagging behind the United States to a varying extent, this is a worldwide tendency.

The continuously increasing size of the service sector relative to manufacturing spurred a range of studies of the consequences of the increased 'servicification' of the economy in the United States in the 1950's and 1960's.

The above mentioned study by Fuchs (1965) of 'The Growing Importance of Service Industries' was just one of the early American studies of the service economy. In his analysis Fuchs drew parallels to the consequences of the shift from primary to secondary production during the period of industrialisation causing land to loose and physical capital to gain importance as inputs in economic models. Fuchs saw the importance of the consumer as a co-operating agent in the production process, and the labour embodiment of technological change, as major implications for economic analysis of the shift to a service economy.[3]

Other examples of studies of the emerging service economy, carried out in the United States under the auspices of the National Bureau of Economic Research in the 1950's and 1960's,

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context it is suffice to apply a distinction between manufacturing and service producers based on whether the output they produce is a physical product or an activity.

[2] Defined as ISIC Rev. 2 sectors 6 (Wholesale and Retail Trade and Restaurants and Hotels), 7 (Transport, Storage and Communication), 8 (Financing, Insurance, Real Estate and Business Services) and 9 (Community, Social and Personal Services). Source: ILO Bureau of Statistics Labour Statistics Database (LABORSTA).

[3] Fuchs also pointed out the influence of different demand conditions on productivity in services and identified problems in relation to aggregate measures of gross national product in economic systems where services account for a major part of economic activity.

are Stigler (1956) and Greenfield (1966). Stigler among other things points to the importance of employee knowledge and skills, as well as organisational change, for technological advance in the service industries. Greenfield focuses on 'producer services', i.e. service industries that are mainly producing intermediate service inputs rather than consumer services. An important point in Greenfield's work is the investment value of purchasing producer services.

Even though these early service studies do not focus on innovation, several of their findings are directly related to what is identified as characteristic features of service innovation, and the contribution from services to users, in recent studies. The role of the consumer as a co-operating agent in the production process – and therefore also in the innovation process - in services, and the labour embodiment of technological change, including the importance of organisational change[4], thus receives a great deal of attention in service specific innovation studies.

The acknowledgement of services as important – and in some cases peculiar – economic activities is thus not entirely new. But empirical studies of the development of services through innovation surveys are a relatively new phenomenon. As illustrated below, different avenues for studying service innovation have been explored, ranging from approaches that view services from a manufacturing perspective, to approaches that treat service activities as something distinctly different from other types of economic activity.

III. Different approaches to analysing service innovation

There is an ongoing debate on whether service innovation can be analysed using the same concepts and tools as innovation in manufacturing. Coombs and Miles (2000) distinguish between three different approaches for defining and studying innovation in services: (i) an assimilation approach, which treats services as similar to manufacturing; (ii) a demarcation

[4] Stigler (1956) observes a tendency to minimise the role of technology in service industries, which might occur because technological advances in service industries often are of an elusive kind. Thus technological advance may consist in an increase in the knowledge and skills of the employees, allowing these to work more rapidly and effectively. Organisational changes occur in manufacturing industries as well as in services, but Stigler found that mechanical advances had tended to overshadow organisational changes in manufacturing, perhaps because economists are prone to underestimate their influence relative to advances in natural science technology.

approach, which argues that service innovation is distinctively different from innovation in manufacturing, following dynamics and displaying features that require new theories and instruments; and (iii) a synthesis approach, which suggests that service innovation brings to the forefront hitherto neglected elements of innovation that are of relevance for manufacturing as well as services.

The two first of these approaches can be related to two main characterisations of innovation surveys proposed by Djellal & Gallouj (2000): (i) subordinate surveys[5], which basically take an assimilation approach to innovation; and (ii) autonomous surveys, which take a demarcation approach to innovation. The third approach, the synthesis approach, remains to be developed more extensively, and this perspective on innovation has thus not been widely applied in empirical surveys. Contributions to the a synthesis approach to innovation can however be found in Gallouj and Weinstein (1997), who aim at developing an integrative approach to innovation which encompasses both manufacturing and services, and which applies to technological as well as non-technological innovation. Gallouj and Weinstein build their approach on a model that represents a product or a service as a system of competences, technical characteristics and final characteristics. Innovations thus consist of changes in one or more of these elements. As is illustrated below, Gallouj and Weinstein's approach allows for a very broad perception of innovation, just as it is the case with the demarcation approach to service innovation.

Preissl (2000) also contributes to the development of a synthesis approach to innovation in an analysis that takes the blurring boundaries between manufacturing and services as the point of departure for assessing what makes service innovation different. Even though Preissl identifies a range factors peculiar to services, she ends up concluding that it might turn out that "new boundaries have to be drawn across service and manufacturing sectors to categorise industries according to characteristics in innovation dynamics, since some services may be more similar to certain manufacturing industries than to other services" (Preissl 2000, p. 145).

[5] In Gadrey et al. (1995) the subordinate vision of innovation in services is described as viewing service innovation as something that does not have a goal of its own.

In empirically based analyses of innovation in services the demarcation and assimilation approaches are still dominant however. These two approaches are discussed in further detail below.

Subordinate surveys (assimilation)

The second European Community Innovation Survey (CIS II) carried out in 1997 is an example of a subordinate survey, i.e. a survey confined to applying definitions of and questionnaires for services, which were intended for manufacturing activities, focusing solely on technological innovation (Djellal and Gallouj 2000). This survey was a follow-up on the CIS I survey, carried out in 1993, which explored manufacturing firms' technological product and process innovations during the period 1990-1992. The limitation to product and process innovation in the CIS I survey is criticised in Archibugi et al. (1994), who suggest a distinction between different types of innovative activities, i.e. 'innovation of product', 'innovation of process', 'innovation of organisation', 'innovation of design', 'innovation of packaging', etc. This did not result in any changes in the way innovation was defined in CIS II however, as in the first round reference was only made to product or process innovation. A new addition in CIS II was the inclusion of service firms in the survey. A special questionnaire was developed for the service firms, but the focus remained on technological innovation in a narrow sense. Also in the third round of the survey (CIS III), initiated in 2001, product and process innovation are the only two innovation areas dealt with.

Coombs and Miles (2000) criticise analyses taking an assimilation (subordinate) approach to service innovation for being too limited in their perception of innovation, although these types of analyses do confirm that services do innovate. One such analysis is Sirilli and Evangelista's (1998) analysis of technological innovation in services and manufacturing. Comparing data from two surveys - a survey among service firms, covering the period 1993-1995, and a survey among manufacturing firms covering the period 1990-1992[6] - Sirilli and Evangelista find that service and manufacturing sectors show more similarities than differences with respect to a range of basic dimensions of innovation processes (regarding propensity to innovate, sources of information, objectives of and obstacles to innovation). Along the same

[6] This questionnaire applied in this survey is highly comparable with the standardised CIS I questionnaire.

line of reasoning Hughes and Wood (2000), based on a (subordinate) survey among 576 small and medium sized manufacturing and service firms, also find that differences within manufacturing and service sectors respectively are greater than between the two groups. These findings of similarities between the two groups could be a direct cause of the assimilation approach though, as it takes a technological approach to innovation, and thus is likely to ignore possible differences related to non-technological innovations.

Autonomous surveys (demarcation)

Opposed to the assimilation approach is the demarcation approach, which is the foundation for carrying out specialised studies of innovation in services. The demarcation approach to service innovation can thus be directly linked with 'autonomous' surveys of service innovation. The primary focus of autonomous innovation surveys is, per definition, not to compare innovation in services directly with innovation in manufacturing, but rather to study distinctive features of service innovation. The danger of such an approach lies in inferring that particular features are unique for services, although they might actually be just as characteristic of manufacturing, although they have been ignored in traditional analyses limited by the product/process dichotomy.

An example of an autonomous survey of service innovation is a survey carried out in France in 1997 as part of the European project on "Innovation in Services and Services in Innovation" (SI4S).[7] Results from this survey are reported in Djellal and Gallouj (2001). In this survey the innovation concept is broadened to encompass not only product and process innovation, but also internal organisational innovation and external relational innovation. The analysis confirms a range of hypotheses regarding service innovation, including the importance of clients, the multiplicity of possible actors involved in innovation and the pre-eminence of interactive models of innovation (as opposed to the linear model of innovation), as well as the problem of protecting innovation in services.

The above mentioned features of services innovation are admittedly often neglected in relation to manufacturing innovation. This does not mean that they are not relevant for

[7] The findings of SI4S project are reported in three synthesis reports: Hauknes (1998), Sundbo and Gallouj (1998), and Bilderbeek et al. (1998).

manufacturing though. Kline and Rosenberg (1986) have illustrated that the linear model of innovation is just as inadequate and oversimplified in relation to innovation in manufacturing as it is in services. In relation to the multiplicity of possible actors involved in innovative activities, DeBresson et al. (1998), based on data for manufacturing firms in 10 countries from the first Community Innovation Survey (CIS I), show that information networks are the rule and seem to be almost universally required in the innovative process. Innovative achievements attained by individual firms in isolation are a very small minority. Regarding the importance of clients or customers for product innovation, Madsen (1998), based on a survey on collaboration on product development amongst Danish manufacturing firms, found that although suppliers of materials and components are just as frequent collaboration partners as private customers, customers are identified as the most important type of collaboration partner. Madsen further confirms DeBresson et al.'s findings concerning the variety of partners involved in product development, as well as the frequency of collaboration: only 3 percent of the participating product developing firms had no experience with collaboration on product development, and 44 percent of the product developing firms had collaborated on all their development projects during the last three years. Interactive models of innovation are thus by no means unique for services.

Regarding the appropriability issue Evangelista (2000) finds the surprising result that appropriability conditions seems to be more important determinants of technological change in manufacturing than in services. This is based on the finding that manufacturing firms rank the risk of being imitated by competitors as a much more important factor hampering innovation than does service firms.[8]

Many particularities of service innovation pointed out by autonomous (demarcation) service studies thus appear to be just as important in manufacturing – even though they might not be studied very often in relation to manufacturing. The demarcation approach thus has the possibility of contributing with a broadened knowledge about service activities *as well as* about innovation in general, and thereby lead the way towards developing a synthesis

[8] The comparison is based on surveys covering different period of time for manufacturing and services. Comparisons should thus be carried out with caution. The difference in ranking is however so outspoken that it is

approach to innovation that applies to all sectors of activity. But inherent in the demarcation approach, and in the related autonomous innovation studies, is a challenge of traditional perceptions of innovation, and thereby also possibly the theoretical foundation for innovation studies. The autonomous innovation studies' distance from traditional perceptions of innovation is among other things illustrated by the development of innovation concepts specifically aimed at capturing the peculiarities of services. Below some of these concepts are discussed in relation to a traditional Schumpeterian perspective on innovation as well as in relation to the concepts of learning and codification of knowledge.

IV. A Schumpeterian perspective on service specific innovation concepts

As pointed out by Coombs and Miles (2000), the demarcation approach to service innovation, which implicitly lies behind autonomous innovation studies, is still under development. The number of analyses drawing on autonomous surveys is thus limited. But Gadrey et al. (1995), Sundbo (1998, 2000), Sundbo and Gallouj (1998, 2000), Gallouj (2000), and Djellal and Gallouj (2001) are notable examples of studies taking a demarcation approach to innovation.

As mentioned above, demarcation studies have, in their focus on the particular characteristics of services, developed context-specific concepts for service innovation. These concepts serve to direct the attention towards features that are perceived as distinctive for service innovation, implicitly stating that these features do not apply to manufacturing – at least not to the same extent. It still remains to be systematically studied whether services and manufacturing do in fact differ to the extent proposed by these studies, or whether the perceived difference largely is a consequence of manufacturing studies' bias towards technological innovation.

The major point of reference for assessing the service specific innovation concepts in the following is Schumpeter's original notion of innovation. Innovation is closely related to development in Schumpeter's theory of economic development: economic development is driven by the discontinuous emergence of new combinations (innovations) that are economically more viable than the old way of doing things (Schumpeter 1934). The role of innovations in creating development is expressed in the focal shifts that they produce, "which

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assessed to be valid: manufacturing firms rank the risk of being imitated by competitors as obstacle 5 of 15,

is replete with vitality, motivated by a small circle of personalities, and which does not consist in continuous adaptation" (Schumpeter 1912/2002, p. 103).

Schumpeter's innovation concept covers five areas: (i) the introduction of a new good or a new quality of a good (product innovation); (ii) the introduction of a new method of production, including a new way of handling a commodity commercially (process innovation); (iii) the opening of a new market (market innovation); (iv) the conquest of a new source of supply of raw material or intermediate input (input innovation); and (v) the carrying out of a new organisation of industry (organisational innovation) (Schumpeter 1934, p. 66). It is an essential feature of innovation that it is something that is carried into practice, and further that the entrepreneur leads others in the same branch to follow, i.e. the innovation gets diffused through imitation (op cit., pp. 88-89).

In his later work Schumpeter (1942) puts less emphasis on the role of the individual entrepreneur in the process of innovation[9] compared to his original theory of economic development, just as he stresses that innovation does not have to be radical and unpredictable to be considered a true innovation. Schumpeter (1942) finds that it has become much easier to do things that lie outside the familiar routine, and accordingly innovation itself can be perceived as being reduced to routine in the sense that technological progress has become the business of trained specialists. Although Schumpeter sees the innovation process as being increasingly more institutionalised, depersonalised and automatized, this does imply that innovation itself has seized being a break with 'business-as-usual'. Schumpeter (1942, p. 83) thus describes innovation as a "process of industrial mutation (….) that incessantly revolutionizes the economic structure from within". The incessant character of innovation should not be taken too literally, as the actual revolutions occur in discrete rushes – it is the process as a whole that works incessantly (Schumpeter 1942, p. 83, footnote 2).[10]

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while service firms rank this risk as obstacle 15 of 15.

[9] This view on innovation is commonly known as Schumpeter Mark II, as opposed to Mark I, which refers to Schumpeter's early belief in the crucial role of the individual entrepreneur (expressed in Schumpeter 1934).

[10] Schumpeter does however see the increased automatisation of innovation as a threat to the survival of capitalism because bureaucracy and experts suppress individual initiative.

The reason for putting such emphasis on Schumpeter's notion of innovation in the present context is that it is the economic meaning that Schumpeter's attaches to innovation in relation to economic development, which defines innovation an economic concept. If innovation did not exist "movements towards the superior methods in production in the economy would also exist in a static state, but (…) more slowly in an infinitesimal way would the mass of the statistical economic agents (…) sink towards the center of gravity [i.e. equilibrium]" (Schumpeter 1912/2002, p. 103). Innovation is thus what pulls the economic system away from these infinitesimal movements towards the more abrupt changes that are associated with development.

It is in light of this original interpretation of the inherent characteristics and effects of innovation that the service specific innovation concepts are discussed in the following. The studies focussing particularly on service innovation have as their primary goal to describe how innovation is carried out in services, and how it takes many other forms than just product and process innovation. It is this focus on the peculiarities of services that has led to the development of these new innovation concepts specially aimed at services.

One such concept developed in relation to service innovation is *ad hoc innovation* (e.g. Gadrey et al. 1995; Sundbo and Gallouj 1998, 2000; Gallouj 2000). Gallouj and Weinstein (1997, p. 549) present the concept as developed to describe an "interactive (social) construction to a particular problem posed by a given client", and it is a concept particularly relevant for consultancy services. Ad hoc innovations help to produce new knowledge and competencies that have to be codified and formalised so that they might be reused in different circumstances (ibid.). Mamede (2002) describes the most important feature of ad hoc innovation as adaptive capacity.

The concept challenges the basic principle that innovations by definition, through their associated diffusion, have more than one specific application (Schumpeter 1934). This issue is discussed by Sundbo and Gallouj (1998), who argue that even though an ad hoc innovation as such is not reproducible, it is sufficient that it is indirectly reproducible through codification and formalisation of part of the experience and competence developed in constructing the particular solution. This amounts however to equalising learning, competence development

and knowledge codification with innovation. There is no doubt that learning occurs through the process of innovation (see e.g. Kline and Rosenberg 1986), and that learning strengthens the potential for further innovation, but this does not imply that learning equals innovation (see also below in relation to formalisation innovation). Learning is not a concept dealt with specifically by Schumpeter, but he does touch upon the creation of new knowledge in relation to invention and innovation in stating that this new knowledge is economically irrelevant if the invention is not carried into practice (Schumpeter 1934, p. 88). In the present context it can be argued that unless the learning taking place in relation to adapting a consultancy service to a specific customer results in a radical or even incrementally new or changed product, process, way of organising etc. it is not of any particular importance for economic development.

Another concept developed especially for services is *external relationship innovation*, defined as the establishment by a firm of particular relationships with partners (customers, suppliers, public authorities or competitors) (Djellal & Gallouj 2001). This concept appears to be closely related to the concept of organisational innovation as it has been interpreted in recent innovation studies. Whereas Schumpeter's original concept concerned the organisation of industry (e.g. the transition in to or out of a monopoly situation), the concept has later been broadened to cover processes for gathering, managing and using information, as well as for the implementations of decisions based on such information (OECD/Eurostat 1997). And Schumpeter (1912/2002, p. 111) does mention outdated management forms, alongside old products and methods of production, as factors that prevent some economic agents from prospering from development, i.e. Schumpeter does, at least indirectly, broaden the concept of organisational innovation to encompass more than the organisation of industry.

The processes for gathering, managing and using information can concern the internal organisation of a firm, as well as a firm's external organisation of relations, i.e. external relational innovation is a 'subset' of organisational innovation.[11] This implies that external relational innovation faces the same problems as organisational innovation in general, namely that it is a difficult subject to deal with from a measurement perspective. Furthermore the

[11] Djellal and Gallouj (2001) also introduce the notion of '(internal) organisational innovation'.

large degree of firm specificity leads to problems with summation to an aggregate level (OECD/Eurostat 1997). This further implies that the broad interpretation of organisational innovation could conflict with the requirement of more than a specific application of an innovation. Past experiences with the diffusion of new ways of firm organisation point in the opposite direction though.

Formalisation innovation is introduced a heterogeneous type of innovation, which aims to lend 'material' form to services (Gallouj and Weinstein 1997; Gallouj 2000). Formalisation innovation is described as "putting the service characteristics 'into order', specifying them, making them less hazy, making them concrete, giving them shape" (Gallouj and Weinstein 1997 p. 553). Examples given by Gallouj and Weinstein are the modulation of functions in the cleaning industry, the organisation of work at McDonald's, and the formalisation of legal services into a well-defined product, such as e.g. 'legal audit'. Parallels can thus be drawn to the process of codifying or making knowledge explicit (Nonaka 1994, Nonaka and Takeuchi 1995) which creates perceptual and conceptual categories that facilitate the classification of phenomena, i.e. formalisation innovation can be described as formalising or making explicit hitherto informal, implicitly known actions. The process of formalisation can be related to the 'service solutions' discussed in relation to service strategies by Leiponen (2002). A 'service solution' is a pre-defined service product as opposed to e.g. the service provider functioning as an outside expert. Leiponen emphasises it is an implication of Nonaka's (1994) theory of knowledge creation that codification is a prerequisite for innovation, and finds empirical support for innovative services firms being slightly more likely than non-innovative firms to offer 'service solutions' as opposed to non-codified services. Leiponen's findings that firms that formalise knowledge are more likely to innovate is in accordance with Nonaka and Takeuchi's theory of innovation emerging out of the interaction between tacit and explicit knowledge, but the act of making knowledge explicit is only a step towards creating new knowledge. And it is knowledge *creation* that fuels innovation, not knowledge per se (Nonaka and Takeuchi 1995, p. 235). The formalisation procedures[12] discussed by Gallouj and Weinstein can thus contribute to innovation, but cannot be singled out as being a particular

[12] Parallels can also be drawn to Nonaka's (1994) concept of 'conceptualization', which refers to a process where tacit, 'field-specific' perspectives are converted into explicit concepts that can be shared beyond the boundaries of a limited team of people.

type of innovation. On the contrary formalisation is an important element in all processes aiming at applying the creation of new knowledge in innovations.

The concept *expertise-field innovation* has been applied to describe innovations that consist of detecting new needs and responding to them through a procedure of accumulating knowledge and expertise within services (Gallouj 2000). These types of innovations are described as potential, where the actual innovation will only be materialised in an interaction with a client. In that sense one could be led to believe that expertise-field innovation is just a special case of 'ad hoc innovation'. But Gallouj (2000, p. 133) stresses that the essential results of expertise-field innovation are the "opening of new markets, diversification (internal and external) or renewal of product ranges, and creation of a competitive advantage or monopoly in terms of knowledge and expertise", i.e. results that are close to being identical to the characteristics of innovation described by Schumpeter (1934),[13] i.e. expertise-field innovation is true innovation in a Schumpeterian sense.

The service specific innovation concepts discussed above are not a complete list of new concepts developed in relation to service innovation. But they serve to illustrate how service innovation studies – and in some cases also attempts to contribute to the synthesis approach, such as Gallouj and Weinstein (1997) – develop new concepts in their effort to illustrate how traditional innovation studies are too limited in their focus. Whereas some of the new concepts are only a rephrasing of established innovation concepts, others are clearly stretching the concept, not only beyond the traditional product/process dichotomy, but also beyond the limits of the actual act of innovation to include processes related to or leading to innovation in their definition of innovation.

The contribution from the new innovation concepts launched in relation to the service studies lies in the attention they direct toward the multiplicity of ways through which innovations can be carried out (i.e. different characteristics of innovation processes). This is hardly unique for

[13] Regarding detecting new needs, opening new markets and renewing product ranges Schumpeter states that: "It is, however, the producer who as a rule initiates economic change […], [consumers] are, as it were, taught to want new things, or things which differ in some respect or other from those which they have been in the habit of using". (Schumpeter 1934, p. 65)

services though. More important, the concepts also distinguish between different types of innovation in relation to their degree of newness – and to their degree of being a true innovation:

- Expertise-field innovation is clearly an innovation, also viewed from a Schumpeterian perspective, as it consists of detecting new needs, responding to them and thereby possibly opening up new markets.

- External relational innovations face the same problems as other types or organisational innovation: they might have a considerably economic effect, but empirically they are difficult to identify and measure. The measurement problem alone does not justify questioning the innovative character of some organisational changes though.

- Formalisation innovation is a difficult concept to grasp. As mentioned above it appears to be closely related to codifying and making explicit knowledge and processes, which have hitherto been informal and tacit. It is not clear however, how these formalisation processes are related to new marketable products or new ways of organising production or carrying out processes. The concept thus suffers from being rather vaguely defined, and could benefit from a further development and specification.

- The concept that poses the largest problem in autonomous service studies is ad hoc innovation, which is a rather controversial concept. Ad hoc innovation challenges the requirement of discontinuity and possibilities of diffusion of an 'innovation', as it consists of a specific, non-reproducible solution to a specific problem, primarily carried out within consultancy businesses.

Those subscribing to a demarcation approach to innovation would probably claim that the traditional Schumpeterian perspective on innovation is too narrow to cover the specificities of service innovation because Schumpeter clearly had manufacturing in mind when he developed his theory of economic development (1934). But, as empirically supported by

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The competitive advantage or monopoly in terms of knowledge and expertise is inseparably related to

Marklund (1998), Schumpeter's definition of innovation is in fact rich enough to encompass innovations in services. And the point raised here is that if innovation is reduced to the emergence of context-specific solutions, then the concept looses its economic meaning: first, because the innovative endeavours can no longer be claimed to be driven by the strive towards (temporary) extraordinary profit and interest, which are the "fruits of the process of development" (Schumpeter 1912/2002, p. 111); and second, because the direct link between innovation and economic development dissolves. This last element relates to the fundamental distinction between growth and development, which characterises the Schumpeterian school of thought. Schumpeter does not consider the mere growth of an economy to be a process of development, since it does not call forth any qualitative new phenomena, but only processes of adaptation. Small changes are frequently a condition for development in a Schumpeterian sense, but even though they make development possible, they do not create it out of themselves (Schumpeter 1934, pp. 62-63). Learning, as a process of continuous adaptation to small changes, including coming up with specific solutions to specific problems, can be perceived in the same way: learning is a condition for, an input to – as well as an outcome of - innovation, but it does not constitute innovation in itself.

If autonomous service studies, in their effort to broaden the definition of innovation to cover more than technological product and process innovation – and such a broadening is in complete accordance with Schumpeter's notion of innovation – end up including activities that may be related to innovation, but are not innovations in themselves, in their definition of innovation, then the concept is in danger of loosing its economic meaning. If innovation cannot be related to at least the efforts to step out of the normal day-to-day business and create something that bears in it the possibility of a competitive advantage in relation to the existing way of doing things, then reason for being concerned with innovation becomes unclear.

Even though Gallouj and Weinstein (1997), in their attempt to develop a synthesis (or integrative, in their words) approach to innovation, present a method to identify innovation based on in which elements a change might occur, they do not confront the innovation

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Schumpeter's entrepreneurial profit (1934 p. 128ff).

concepts applied with a Schumpeterian perspective on innovation. Their contribution is however an important step towards a more coherent approach to innovation in services as well as manufacturing.

V. Conclusions

The present paper does not attempt to raise doubt as to whether services are innovative. Neither does it question that a manufacturing based technology focussed product-process approach to innovation is too limited within services. But it is argued that many of the claimed peculiarities of services innovation do also apply – admittedly to a varying degree – to manufacturing, i.e. the traditional technology approach to innovation is also too narrow for manufacturing. The need for a synthesis approach to innovation is thus underlined.

So-called autonomous service innovation studies have the possibility of leading the way towards such a synthesis approach to innovation. But in their efforts to make up for the widespread disregard of services in traditional innovation studies, these studies risk stretching the innovation concept too far and thus moving too far away from the original economic meaning of innovation. The service-specific studies are in strict accordance with Schumpeter when they argue that innovation is much more than technological product and process innovation - Schumpeter after all worked with five areas of innovation, also including market, organisational and input innovation. But the above discussion demonstrates that autonomous service innovation studies face a problem of mingling activities that might lead to innovation with actual innovation. In including activities that require/result in learning, but neither result in new products, processes, markets, nor organisational structures, in their definition of innovation, autonomous studies tend to neglect the Schumpeterian heritage of innovation studies. The paper thus illustrates the need for a conceptual strengthening of service-specific innovation studies. After all, these types of studies serve an important purpose in building a bridge between the well-known narrow assimilation approach to innovation, and the development of a synthesis approach, which has a broad – and conceptually solid - perspective on innovation, regardless of whether this is carried out in manufacturing, in services or in a grey area embracing both.

Contributions to a synthesis approach to innovation have already pointed to the need for the drawing of new boundaries between services and manufacturing (a dissolution of boundaries will probably be more correct), as well as to a more formalised way of identifying innovation in services as well as in manufacturing. The future challenges concerns a further distinction between innovation related activities and innovation, in particular a clarification of the role of learning and codification of non-technological knowledge as an input to innovation in services as well as manufacturing.

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The Research Programme

The DRUID-research programme is organised in 3 different research themes:

- The firm as a learning organisation
- Competence building and inter-firm dynamics
- The learning economy and the competitiveness of systems of innovation

In each of the three areas there is one strategic theoretical and one central empirical and policy oriented orientation.

Theme A: The firm as a learning organisation

The theoretical perspective confronts and combines the resource-based view (Penrose, 1959) with recent approaches where the focus is on learning and the dynamic capabilities of the firm (Dosi, Teece and Winter, 1992). The aim of this theoretical work is to develop an analytical understanding of the firm as a learning organisation.

The empirical and policy issues relate to the nexus technology, productivity, organisational change and human resources. More insight in the dynamic interplay between these factors at the level of the firm is crucial to understand international differences in performance at the macro level in terms of economic growth and employment.

Theme B: Competence building and inter-firm dynamics

The theoretical perspective relates to the dynamics of the inter-firm division of labour and the formation of network relationships between firms. An attempt will be made to develop evolutionary models with Schumpeterian innovations as the motor driving a Marshallian evolution of the division of labour.

The empirical and policy issues relate the formation of knowledge-intensive regional and sectoral networks of firms to competitiveness and structural change. Data on the structure of production will be combined with indicators of knowledge and learning. IO-matrixes which include flows of knowledge and new technologies will be developed and supplemented by data from case-studies and questionnaires.

Theme C: The learning economy and the competitiveness of systems of innovation.

The third theme aims at a stronger conceptual and theoretical base for new concepts such as 'systems of innovation' and 'the learning economy' and to link these concepts to the ecological dimension. The focus is on the interaction between institutional and technical change in a specified geographical space. An attempt will be made to synthesise theories of economic development emphasising the role of science based-sectors with those emphasising learning-by-producing and the growing knowledge-intensity of all economic activities.

The main empirical and policy issues are related to changes in the local dimensions of innovation and learning. What remains of the relative autonomy of national systems of innovation? Is there a tendency towards convergence or divergence in the specialisation in trade, production, innovation and in the knowledge base itself when we compare regions and nations?

The Ph.D.-programme

There are at present more than 10 Ph.D.-students working in close connection to the DRUID research programme. DRUID organises regularly specific Ph.D-activities such as workshops, seminars and courses, often in a co-operation with other Danish or international institutes. Also important is the role of DRUID as an environment which stimulates the Ph.D.-students to become creative and effective. This involves several elements:

- access to the international network in the form of visiting fellows and visits at the sister institutions
- participation in research projects
- access to supervision of theses
- access to databases

Each year DRUID welcomes a limited number of foreign Ph.D.-students who wants to work on subjects and project close to the core of the DRUID-research programme.

External projects

DRUID-members are involved in projects with external support. One major project which covers several of the elements of the research programme is DISKO; a comparative analysis of the Danish Innovation System; and there are several projects involving international co-operation within EU's 4th Framework Programme. DRUID is open to host other projects as far as they fall within its research profile. Special attention is given to the communication of research results from such projects to a wide set of social actors and policy makers.

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