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Innovation in the Service Economy: Novelty in Solutions

Recent studies show that firms in the knowledge economy develop new services as well as new products, thus providing solutions, experiences and creating value with, as well as for, their customers (Prahalad & Ramaswamy, 2004). The paper briefly reviews literatures on multiple forms of innovation, including innovation in services. Characteristics of firms undertaking innovation in services are identified and implications for the management of innovation and propositions for future research are developed.

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INTRODUCTION

Innovation in firms has been seen as tried and tested way for a firm to increase growth and gain and developing competitive advantage (Barney, 1991) and to contribute to the growth of nations (OECD, 2001). Much of the literature has focused on innovation in new products and processes and their contributions to a firm's success (AD Little, 2000; Tidd, Bessant & Pavitt, 2001). However, services and service industries dominate the economic activities and are the centre of growth in western economies (Tether, Miles, Blind, de Liso & Cainelli, 2002). Recent research investigating EU businesses found that all businesses rated the quality of services as the most important factor contributing to business success (with an overall score of 96%) whereas relatively few sought to compete mainly on cost (Howells & Tether, 2004:7).

Firms that compete in international markets are more likely to engage in innovation. A survey of EU business found that where firms engaged in broad national and international markets, the wider the geographical market that the business served, the greater was the likelihood that the business would engage in all types of innovative activity (Howells & Tether, 2004).

Innovation is found in services as well as products and processes within firms. Services are often not well defined but usually contain notions of intangibility, client intensity and interaction or joint production with customers. Service sector firms innovate, often in incremental ways. Services are diverse and heterogeneous, and innovation in services generally involves novelty and some transformation of an existing activity. For example in the banking industry, internet banking changed the accessibility of records, transfers and purchasing.

However traditional indicators of innovative inputs or outputs have not captured the innovation in services and the dimensions of such innovation are largely unclear (Howells, 2000; Pilat, 2000, Tether et al. 2002). The lack of accurate and complete data about innovation in services is influenced both by measurement problems (Carter, 1995) and a lack of statistics (Pilat, 2000). Recent research indicates that while new product development is very important, companies are often involved in providing solutions or experiences and through these services retain customers in a competitive world (Prahalad & Ramaswamy, 2004).

Broad approaches to the study of innovation in services have been undertaken in many European countries (Bryson & Monnoyer, 2004). Classification of these studies using Gallouj's (2002) typology of technological, service-oriented and integrative approaches found that few countries had carried out integrative studies of innovation in services and manufacturing (Bryson & Monnoyer, 2004), with the exception of France and the United Kingdom.

This theoretical paper argues that innovation in services occurs in multiple areas and invariably firms use innovations in services to attempt to add value through developing solutions or creating experiences. The purpose of the paper is to bring together the diverse findings from research on innovation in services, articulate what we know and develop research propositions and a research agenda. The paper addresses the following questions: what is the nature of innovation in services, what are some distinctive features of this form of innovation and what factors contribute to the development of innovation in services. First we begin with some definitions of innovations and services and then briefly examine literatures related to innovations in

services. Second we examine preliminary findings from surveys of innovation in services. Thirdly we look more closely at services and manufacturing, innovation in service companies and research and development in services. Finally we look briefly at emerging business models, develop some propositions regarding firms likely to engage in innovation in services and suggest areas for further research.

PERSPECTIVES ON INNOVATION IN SERVICES

Definitions of Innovation

The notion of innovation is widely interpreted and the range of possible definitions of both innovation and services has lead to some conceptual confusion. Innovation can be examined from a variety of perspectives, from a broad definition such as ‘innovation refers to the process of bringing any new, problem-solving idea into use’ (Kanter, 1983, pp 20), to a more outcome-based approach, where ‘innovation is the process whereby new ideas are transformed, through economic activity, into sustainable value-creating outcomes’ (Livingstone, 2000). Innovation in both a process and an object, idea or practice, and is found in low technology firms as well as high technology firms and involves commercially viable application (Herbig & Kramer, 1993). We use innovation to illustrate some novelty or newness that has economic or commercial value rather than a good idea that is new to a firm or industry. We begin with definitions of services, a brief categorization of services and then review a number of literatures, related to innovation, new service development and innovative firms.

Perspectives on Services

The notion of services is also broadly and differentially defined. One well known definition of a service as “an activity or series of activities of a more or less intangible nature that normally, but not necessarily, take place in interaction between the customer and service employees and/or physical resources or goods and/or systems of the service provider which are provided as solutions to customer problems” (Gronroos quoted in Gustaffson & Johnson, 2003; p4).

Services tend to be ubiquitous and diverse and innovation in services is found in many types of firms. Different categorizations of services have developed to tease out different facets of services to provide some precision about research and findings regarding innovation in different services. The classification developed by the Economic Council of Canada (ECC) in 1991, classified service industries into three distinct sub sectors: dynamic services, traditional services, and non-market services. Here dynamic services tended to be high value-added and knowledge intensive, and share an emphasis on advanced technology, an international orientation, and a critical role in supporting the production and distribution activities of other sectors, and include communications, financial, and technical business services (Baldwin, Gellatly, Johnson & Peters, 1999). Innovation in these dynamic services was largely undertaken to maintain or increase market share and improve product quality. Traditional services, though certainly not isolated from technological change or competitive restructuring, in general have lower-value added, and are less exposed to foreign competition; and non-market services refer to those not traditionally driven by market forces (i.e., health, education, social services and public administration) (Baldwin et al. 1999).

RESEARCH ON INNOVATION IN SERVICES

The first literature is the mainstream innovation literature. With the growth of the knowledge based economy and the noted importance of the service sector in generating wealth and employment, the nature of innovation in services is being revisited for new insights into innovation processes (Boden & Miles, 2000; Gallouj, 2002; Howells, 2003, Sundbo, 1998; Tether, 2002, 2003). Past innovation paradigms have largely been manufacturing innovation paradigms and there is a need for a service innovation paradigm, not as a stand-alone process but as a step towards a new innovation paradigm (Howells, 2000). Internationally, concern has been expressed about definitions of innovation, forms of measurement of innovation and processes of investigation. Experts in the field have suggested the need for more finely grained taxonomies to include service functions (Tether et al, 2002; 14). Recognition of some of the limitations of a focus on R&D investment and patent activity as indicators of innovative activity led to calls for further research into combinations of products and services and well as a focus on services innovation (Boden & Miles, 2000). Previous taxonomies developed to address innovation (Pavitt, 1984; Miozzo & Soete, 2001) have attempted to respond to issues of diversity of services, the lack of homogeneity of services and the changing patterns of innovation in multiple industry sectors. Recent studies of innovation in services have noted the ‘servicisation’ of manufacturing and other firms, the encapsulation of services and the multiple combinatorial forms of services in firms (Howells, 2004), illustrated in Figure 1..

FIGURE 1 ABOUT HERE

The second literature is on new service development, largely from a marketing perspective, recognizes the organizational skills and resources underlying the competitive advantages of service businesses (Bharadwaj, Varadarajan & Fahey, 1993) and builds on notions of service intangibility, simultaneous production and consumption, heterogeneity and perishability (de Brentani, 1995). One focus is the quality management of service operations where a service is an outcome, a process, and a set of prerequisites, and where the main task of service development is to “create the prerequisites for services which the customer perceives have an attractive added value” (Edvardsson & Olsen 1996, pp 141) and the measurement of the performance of new service development activities shows that innovative firms measure performance along a number of internal dimensions (Storey & Kelly, 2001). A clear message from this literature is that regardless of the situation or context, “the success of new services is closely associated with offering products that respond to market needs, that are synergistic with the firm's established reputation and resources, and that involve some type of new service development proficiency” (De Brentani, 1995, pp 102).

The third literature is firm level studies of innovative firms (Chesbrough, 2003; Hargadon, 2003; Kanter, 1983; Matthews, 2002). This literature on innovative firms and the management of innovation in firms reflects a long-standing interest in and research into technological innovation and the manufacturing sector (Tidd, Bessant & Pavitt, 2001). Research on innovative organizations identified ten common components commonly found in innovative firms, such as vision, leadership and the will to innovate, appropriate structure, key individuals, effective team working, continuing and stretching individual development, extensive communication, high involvement in innovation,

customer focus, creative climate, learning organization (Tidd, Bessant & Pavitt 2001, 306–7). Similar findings from other recent research on innovative small to medium enterprises found that innovative firms displayed underlying capacities for innovation which include vision and strategy, a competency base, creativity and idea management, organizational intelligence, organization and process, culture and climate (AD Little, 2001). These characteristics of innovative firms were not exclusive to product-based firms but do not explicitly include service firms.

Recent research by Hargadon (2003) found that innovative firms succeed not only by new inventions but also particularly by harnessing the past in powerful new ways. His studies of the firm IDEO identified the process of “technology brokering”. This process is developed by experienced firms as they recombined existing ideas, bridging multiple industries, used a social process, and built communities of broad ranging expertise from which to draw on were also found in Design Continuum and other firms who consulted across a broad range of companies and industry sectors.

From these literatures we find a growing interest and activity in research on innovation in services. The limitations of a narrow view of innovation and the indicators used to measure it will be discussed in the next section. Both the literature on new service development and innovative firms have articulated the importance of customer input into design development and implementation of innovation, with the new service literature clearly stating the need to create value for the customer, and the work on innovative firms identifying internal structures, external networks, and internal practices such as leadership and strategy formation as well as systems which maximize contributions from employees, human capital and flexibility of approach.

RESULTS FROM INNOVATION SURVEYS

Innovation in services is largely under-researched (Tether, 2002) and the nature of innovation in services is the source of much debate and conflicting ideas. Services are increasingly being recognised as playing important roles in innovation systems, particularly business services (Miles, 2003). European studies of innovation through the Community Innovation Survey (CIS-2) initially applied the notions of technological innovation to services. Despite this orientation, the CIS-2 survey found that service firms undertake less research and development than manufacturing firms, but there is a large variation among these firms and some service firms undertake relatively large amounts of R&D. The results of the CIS-2 identified innovation in services with variation across different service firms and sectors (Tether et al., 2002).

Analysis of these innovation surveys found that high innovation intensity was found in technical services, wholesale services and/or computer services (Tether et al, 2002). They also found there was a wide variation of innovation in different services and the highest proportion of innovators were found in technical services (Tether et al, 2002). The most widely cited reason that firms gave for undertaking innovation in services was the improvement in quality of services. Sources of information most widely recognised as very important for innovation were within the enterprise (Tether et al, 2002). In contrast, previous findings from the survey of firms in Germany found that customers were the most widely recognised as very important sources of information (Tether & Hipp, 2001).

Research from European innovation surveys found that sources of information used by firms undertaking innovation in services are most likely internal to the firms and the management of such information seems to be well demonstrated in successful

companies (Tether et al, 2003). The human technologies of purposeful discussion and action and knowledge creation and management are central to such success in firms. The smart use of information that increases the connectedness of the firm to the customer and the wider value net, are important for success in small and in international firms.

The stimulus for innovation may arise from within the firm or from the market and innovation found within the firm may originate within the network of the firm and its alliances. Kline & Rosenberg's (1986) review of innovations found that three quarters of innovations were initiated as a result of market need. In addition, the development of patents in itself does not guarantee innovation. Indeed the overwhelming majority of inventions recorded in the US patent office were never introduced on a commercial basis (Kline & Rosenberg, 1986: 276). Case studies confirm that many firms develop patents that are never commercialized. If we accept that "customers can contribute more to the development of services than they typically for the development of goods" (Gustaffson & Johnson 2003: 6), we may indeed accept the notion of co-production of services.

Barriers to innovation in services were identified in a British study. Oke's (2004) survey of service companies found barriers to innovation included the lack of good measures of innovation performance, difficulty in employing an effective development process for service innovation (Oke, 2004) and also difficulty in protecting with patents.

Services and Manufacturing

Service strategies are used in the manufacturing sector (Howells, 2000, Marceau, 2002; Mathieu, 2001) where many manufacturing firms develop services to complement their manufacturing and product and process innovation (Howells, 2000) and firms

bundle services and manufacturing together (AEGIS, 2002). In comparison, the acquisition by services firms of technology, particularly information and computing technology, has been an important driver of innovation. This has been the case, for example, for financial services, communication and public administration services. It has, however, been a two-way process. Since services are frequently the main clients for these new technologies, their demands for more innovative ways of doing business have provided an important boost to technology development. OECD research suggests that “while the impact of increased levels of globalization and investment in ICT has been significant, other factors that affect services firms also play a role: investment in human capital, networking opportunities, organisational change, intellectual property rights, incentives to innovate and appropriate competition and regulatory frameworks” (OECD, 2001: 10).

Mathieu (2001) classified services within a manufacturing firm in terms of industrial services such as maintenance and repair and product services such as support for the supplier’s product through physical distribution, after sales service or technical assistance. In addition she differentiates between customer service in relation to the quality of interactions between a buyer and a seller and service as a product which is a type of service that client may experience without consuming its goods such as repairing competitors cars. She also categorized the organizational intensity with which the organisation delivers its service manouvers and the strength, scope and impact on the firm, using interesting examples to differentiate the strategy of the firm into *cultural*, such as Toyota selling Lexus luxury cars as well as luxury service, *strategic* such as adding a key competence to a firm’s portfolio and *tactical* such as adding a toll free

number on packaged goods. She argues that the bundling and unbundling of services can help to create barriers to entry and generate strategic benefits (Mathieu, 2001).

INNOVATION IN SERVICE COMPANIES

As mentioned above, one strand of research has looked at the characteristics of innovative firms, through surveys, and through analysis of larger data sets (Gellatly, 1999). Other research has identified multiple forms of innovation such as organizational innovations that include multi-unit organizations, new combinations of existing services, the customer as co-producer, and development and implementation (Van der Aa & Elfring, 2002). A brief summary of their work (Van der Aa & Elfring, 2002: 159-165) of three different processes of innovation follows, where (i) the development of multi-unit organizations, where the simultaneous production and consumption limits the growth of the business in any one location, with a balance between standardization and customization. For the multi-unit organization three supporting processes are relevant: the standardization of the service management system; making the service concept explicit; and a certain amount of experimentation connected with internal benchmarking; (ii) new combinations of services – such as organizing linkages between services, creating transparency in the service offering, and the cross-selling of the various elements in order to customize the service bundle; and (3) the customer as co-producer, “where innovation through co-production with clients is supported by motivating the clients and integrating them into the delivery process of the service firm. The application of information technology can also play an important part in creating and supporting new forms of co-makership” (Van der Aa & Elfring, 2002: 167).

The interaction focus that is often present in service innovation is recognised as the result of a co-production between the actual service provider and its client (Den Hertog, 2002). In addition, Den Hertog aligns the new model of innovation in services with the new multidisciplinary and applied production of knowledge (Gibbons, Limoges, Nowotny, Schwartzman, Scott & Trow, 1994), while stating that a “comprehensive model for understanding innovation that sensibly accommodates service innovation is still lacking” (Den Hertog, 2002: 225).

Gustaffson & Johnson (2003) contend that the service economy will become more complex as service alliances and networks continue to evolve and businesses move beyond physical goods to deliver more services, solutions and experiences. As solutions to customer’s problems, solutions are more heterogeneous, intangible and perishable than physical goods, they will tend to be co-produced directly with customers, offering the advantage of customization and reducing the prospect that something is likely to go wrong. “The framework for building a competitive service advantage focuses on building a customer service culture, staying focused on particular customers, superior service experiences, and more profitable relationships” (Gustaffson & Johnson, 2003: 23-24).

With the complexity of processes required in the development of new solutions, the knowledge required for complex problem solving may not reside within the firm but may well be located outside a firm. Many firms have engaged in mergers and alliances to access such information on may engage in new business models of open innovation (Chesbrough, 2003). Using strategies of acquisition of small companies, or at least connecting and collaboration, large global firms acquire smaller firms and use the new competencies to further the work of the firm or develop new products/services or markets.

Service companies are aware that they are not selling tangible things and human resource strategies play a key role in service sector innovation (Baldwin et al., 1999). Selling services means selling experiences, and in addition to meeting contractual obligations, to also “meet consumer’s expectations of emotional benefits such as convenience, ease, simplicity, sense of being in control, and a sense of doing the right thing” (Rapaczynski, 1992: 35). Citibank prides itself on going to great lengths to hire “people who are smart, courageous and honest and who can also be very precise and pragmatic when necessary” (Rapaczynski, 1992: 36). In addition many firms invest in the development of labour skills such as formal development programs (Gellatly, 1999). Discussions of innovations at the firm level need to respond to the emerging patterns of business that are occurring in many industries. New ways of doing business are being developed from Dell’s success in combining existing components to form an exemplary company to the outsourcing of R&D carried out by global firms.

An investigation of differences between innovative and non-innovative small firms in business services found that innovative small firms seem to display a learning-by-doing approach, and are more aware of financial issues and human resource issues (Gellatly, 1999). “Innovative firms attach more importance to financial management, capital acquisition/retention, recruiting skilled labour and incentive compensation.” In this study, firms identified obstacles to innovation through experience in the marketplace and these obstacles tended to intensify as businesses pursue activities and develop competencies. In addition, these innovators had concerns over imitation of their services, market success and labour skills (Gellatly, 1999).

The brokering process that Hargadon (2003) identified in recombining existing processes was also found in service firms. Work on service redesign with a framework and case illustrations of successful service innovation in the form of self-service, direct service, pre-service, bundled service and physical service are examples of recombinations of existing services from other contexts or industries (Berry & Lampo, 2000).

RESEARCH AND DEVELOPMENT IN SERVICES

Unlike research and development in new product development, research and development in services is undertaken in live situations rather than in a laboratory setting (Mitchell, 1989). Services are often intangible and may exist only at moment of delivery to customer and are difficult to isolate in a laboratory, and research and development in services may require new concepts to be developed and these may need to be tested in different ways. In the discussion of the new client services developed by the Bank of America, Thomke (2003) presents a rigorous five-stage process, not dissimilar to processes used in product or process innovation. The steps are evaluating ideas, planning and designing, implementing, testing and recommending, largely developed around a process of customer and employee consultation and systematic experimentation. An interesting unplanned effect of the development of new financial services in the Bank of America was the increased job satisfaction of employees and reduction of staff turnover.

Firms often need to collaborate to bring solutions to the market. For example, firms such as Cisco, Millennium Pharmaceuticals and Flextronics have moved from cross-functional project teams within the organization to make their R&D strategy inseparable from the value-chain participation strategy, and make co-development an integral element of their business models (Deck & Strom, 2002). New measures of the

capacity of the system and new indicators could be developed to understand, enable and predict the potential sustainability of innovation in a number of systems.

NEW BUSINESS MODELS

Innovation in firms is both the result of learning and a contributor to learning. While much of the important learning in this process may occur within the firm, more models with tight or loose linkage with external groups and consumers leads to the development of new business models and organizational innovation. Examples of these new business models include Dell, Kmart as well as IBM who see themselves as global services firms.

One new method of increasing customer involvement in innovation uses user toolkits for innovation which “allow manufacturers to abandon their attempts to understand used needs in favour of transferring need-related aspects of product and service development to users with an appropriate toolkit” (Von Hippel, 2001: 247), with demonstrated effectiveness.

Another example where learning and innovation efforts that benefit a firm reside in the consumer environment is found in the video game industry (Jeppeson & Molin, 2003). Here, consumers that are lead users play an active role in creating new ideas that are then fed back into the game to benefit all players. Problem solving has taken an even broader approach than toolkits for users or giving problems over to users. Some companies publish the problems they are trying to solve on the web, as a means of gaining maximum quality input of problems such as 2RentACoder service for software firms.

Successful firms demonstrate multilevel competencies (Collins & Porras, 1994). They not only manage their businesses well but their strategic focus leads to developing capability to overcome causal ambiguity (Reed & DeFillipi, 1990). The danger of searching for common characteristics is that once found, they may become established as rules rather than guides. In reality we know that firms develop substitute competencies, using alternative problem solving using a different set of activities to achieve a performance criterion (McEvily, Das & McCabe 2000).

These new business models, more efficient management practices and technological innovation are often found in innovative firms (McEvily, Das & McCabe 2000: 297) where firms use processes of continuous improvement, lock-in and market deterrence. A study of Benetton would show innovation in multiple components from innovation in design, production, organization of production, and lock-in of suppliers. Many innovations in services are developed through a close relationship with demanding customers. Investigations of innovations in services in multiple arenas may also indicate the development of new business models or the specific role of complementary assets. One example involves articulating and creating new market opportunities which allow companies to 'lock-on customers', when customers want the enterprise as the sole or dominant choice (Vandermerwe, 2003: 56). This is different to prior models of 'lock-in' of customers through supply chain links.

New methods may be required to investigate the nature of innovation in service and firm strategy. Of importance here is not only the identification of new ways of carrying out processes but also the problem framing process and the emerging solutions.

From this overview of case studies and surveys we develop the following propositions for future research.

Proposition 1: *Innovation in services is positively linked to organizational performance.*

Proposition 2a: *Firms which engage in innovation in services are more likely to have close contact with customers and engage in co-development of services.*

Proposition 2b: *Firms which engage in innovation in services are more likely to seek to learn from customer contact and make smarter use of customer know-how.*

Proposition 2c: *Firms which engage in innovation in services are more likely to seek to improve the customer's control of information and connectedness.*

Proposition 3: *Firms which engage in innovation in services are concerned about the quality of the service and the quality of the interaction.*

Proposition 4: *Firms which engage in innovation in services are more likely to be concerned about the quality of their human capital.*

IMPLICATIONS FOR MANAGEMENT AND FUTURE RESEARCH

Innovation in services makes an important contribution to the competitive advantage of firms in the service and manufacturing sectors. The purpose of this paper is to investigate the nature of innovation in the service economy. Much of the research on innovative firms identifies different processes for remaining competitive, highlighting the processes of customer involvement such as self-service and direct influence that appears to be growing.

Multiple perspectives of services and innovation found patterns of innovations in services that confirm the contribution of customers (Gustaffson & Johnson 2003) with the coproduction of innovation with customers (Gustaffson & Johnson, 2003; Van der Aa & Elfring, 2002) and recombinations of existing services from other contexts or industries (Berry & Lampo, 2000).

The co-development model of services with internal and external customers appears a constant feature, with a focus on solutions and experiences, illustrated in Figure 2. Business models which build on these notions and which create value for the customer are more likely to be successful.

FIGURE 2 ABOUT HERE

We propose some propositions for future research to identify the multiple forms and contributions of innovation in services and to sharpen the benefits that innovations in services as well as products and processes extend to the competitive advantage of firms. Further research related to innovation in services will enrich our understanding not only of innovation in services in particular, but also extend our understandings of innovation in multiple arenas.

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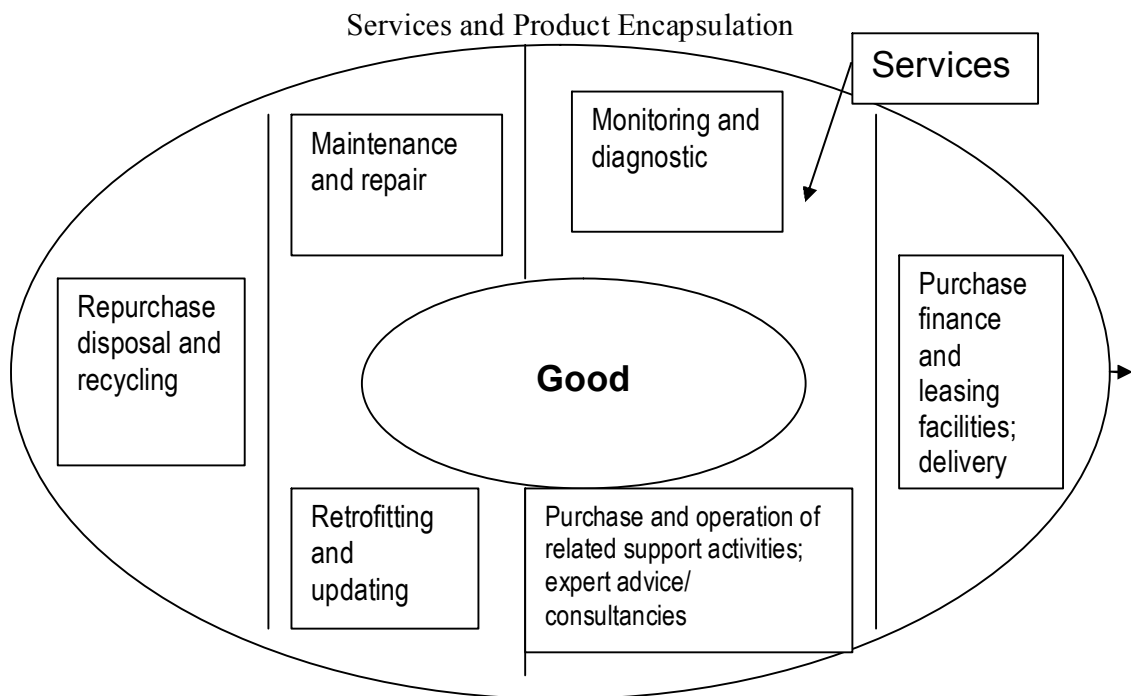
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FIGURE 1.



Source: Howells (2004)

FIGURE 2.

Solutions — combinations of services, services and products, experiences

