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# **Customer-based innovation of e-knowledge services**

## **The importance of after-innovation**

### **1. Introduction**

This paper will analyse the innovation process within knowledge services on the basis of case studies. The objective is to develop new e-knowledge services, which means knowledge service products that are provided via the Internet or similar IT-networks (e.g. mobile phone networks). The customer can download and use the service as a self-service. The focus is on how customers are involved in the process of developing the new service and how the service provider can benefit from the innovation, for example by making the service a general product that can be sold to other clients.

The provision of e-knowledge services has been a possibility for some time, however, it has in practice rarely been a reality. The Internet has been used as a marketing-channel, but rarely as a production means, thus we can talk of real self-service products. Studies of the creation of self-service products therefore give a possibility for providing new knowledge about the particular innovation process of developing an e-knowledge service. That the customers are deeply involved in the innovation process, at least in one of the cases, gives a further possibility of studying one of the core issues in innovation research, which has not been studied very much, namely user or customer based innovation.

### **2. Aim of the paper**

The aim of the analysis is:

1. To get a deeper understanding of the specific innovation process characterised by the product is an e-service and customers are involved in the development process.
2. To find the conditions for the knowledge service provider can reproduce the new service thus it can be mass produced and sold to other clients.

### **3. Definition of knowledge e-service**

In former studies (e.g. Haukness 1999, Miles et al. 1994, Sivula et al 2001), knowledge services have been defined as business services (KIBS - Knowledge Intensive Business Services). These services are characterised by being delivered by professional service providers who have a great deal of tacit knowledge. The KIBS are often process consultants as well as information providers. They contribute to increased productivity and to developing innovations in manufacturing firms. Moreover, they sell most of their services to other service firms (Illeris 1996 p. 60), and thereby contribute to increased productivity and developing innovations in them. This stresses the fact that the economy has, to a large degree, become a service economy where the knowledge service sector is a motor of economic development, including job creation.

The provision of knowledge services to private citizens has been less common, among other reasons because of the price of knowledge services, which has been quite high for private consumers. One may assume that this is changing, not least because of the new developments in ICT-networks such as the Internet. The provision of knowledge services to private customers should therefore also be included in analyses of e-service innovation.

Because provision to private customers is included, 'knowledge services' is a more comprehensive concept than KIBS. The concept is also different from, and more precise than, other concepts such as knowledge intensive or knowledge based services because probably all firms would claim that they are knowledge based or even knowledge intensive; knowledge is of course required for any form of production.

By e-service, I mean that a knowledge service is produced and sold or distributed via an ICT-network. The term has been developed to classify services delivered by ICT-networks (e.g. de Ruyter, Wetzels and Kleijnen 2001, Rust, Kannan, and Ramachandran 2005). However, the ICT-network should not only be used as an instrument for marketing and information about the knowledge service, but be part of the service production and delivery system. The service is no longer delivered in a person-to-person situation. It is instead a self-service situation. The customer must in the case of e-service solve his problem by using the ICT-network. This makes the ICT-network an even more active instrument than in the manufacturing and distribution of goods, where normally it is only the instrument for selling, and not for customer-operated production.

This establishes a new situation in relation to the classic service-delivery situation based on personal customer relations which has been the basis for the particular service management and marketing theory (e.g. Grönroos 1990). Customers' technical competencies become more important and there is no help for the customer in the form of personal communication. The customer must be competent at handling the ICT-interface (e.g. could operate in web sites or on a mobile phone) and could not ask the service provider's personnel (which often have been highly educated professionals) about help. However, the empirical analysis in this paper and other analyses that have been related to it (e.g. Fuglsang and Sundbo 2006) show that this does not always work in practice. The e-service situation sets new demands to the service provider to help the customer and market the service. Instead of the customer being a co-producer as seen in the old service management theory (e.g. Eiglier and Langeard 1988), the service provider must put himself in the customer's place and be a co-consumer to assure that the customer's problem is solved in the best way (Fuglsang and Sundbo 2006). This also means that, for example, the service provider's help desk function becomes extremely important.

#### **4. Theory on service innovation and the e-challenge**

Theories and research results about innovation in services are challenged by the introduction of e-services because this changes the customer relation and the ad hoc way in which innovations traditionally have been developed in knowledge services. The ICT technology influences the social innovation system.

Recently innovation research has focused on the market possibilities as the point of departure for innovation processes (Fuglsang and Sundbo 2005, Howells 2004, 2006). It has been expressed through different concepts such as strategic innovation (Sundbo 2001), lead users (von Hippel 2005) and user-based innovation. The perspectives of the research have also been different. For example, von Hippel (2005) has studied the development of innovations outside the formal economy among users who themselves have invented new tools or activities. Howells (2006) has studied how consumers, particularly industrial consumers, are actors in the development of integrated goods and service products. Sundbo (1998, 2001) has studied how service firms internally organise utilisation of the market

possibilities through forming a strategy which is the base for innovation. Interaction with users in the innovation process and the market needs as advantages – the pull factor of innovation processes – in the innovation process is an old observation (e.g. Rosenberg 1982, von Hippel 1988). However, these earlier approaches were still based on the assumption of innovation is technology development and the R&D process is the main source of innovation. The market need and user-interaction is a correction of the linear model where R&D determines innovation (cf. Rosenberg 1982). The recent approach is a further step in a more radical direction. The customer's problem, not the R&D process, is now taken as the point of departure. This may in some cases lead to an innovation process which also involves a kind of R&D, however, this is an R&D process which is undertaken in the interaction process between the producer and the user. There is no laboratory that is if we define the laboratory as a metaphor for a theoretically based, in-house activity in special departments (cf. Latour and Woolgar 1979). Thus, the user has become more important in relation to traditional inhabitant of the laboratory: the expert or researcher (cf. Fuglsang and Sundbo 2005).

A great part of the recent interest in market or customer based innovation derives from studies of the service sector including knowledge services (e.g. Gallouj 1994, 2002, Miles et al. 1994, Sundbo 1998, Haukness 1999, Boden and Miles 2000, Edvardsson et al. 2000, Hipp 2000, van Aa and Elfring 2002, Drejer 2004). In service development research, customers represent an important resource, or even the very basis of service innovation (Martin and Horne 1995, Lilien et al. 2002). Service research has clearly brought a customer oriented perspective to science in the business world. The reason is that in production of knowledge services the simultaneous production and consumption of a service has worked as the strongest factors that distinguish services from goods (Grönroos 1990; Parasuraman, Zeithaml, and Berry 1985). This has given a new perspective on innovation. In many cases, it is even argued that the development process is in fact initiated by an innovative idea that is derived from a customer (Cooper and Kleinschmidt 1986; Prahalad and Ramaswamy 2000; von Hippel and Katz, 2002). Within service research, the later view is in line with conclusions from research on service quality, for example the theories of “design for quality” and “built-in quality”. It is argued that one key aspect of achieving service quality is through listening to the needs of the customer and involving customers during in the development process (Garvin 1998; Zeithaml, Parasuraman, and Berry 1990; Edvardsson 1997). Those findings have to some degree directed service development research.

The involvement of clients in innovation processes in knowledge services has been emphasised by some researchers (e.g. Gallouj 1994, Gadrey and Gallouj 1998, Edvardsson et al. 2000, Toivonnen 2004). The involvement of clients in the development of knowledge services is natural since knowledge services are mostly in the form of the provision of advice, which often requires an intense interaction between the service provider and the client to solve the client's problem. This is obviously the case for management consultants, lawyers, bank advisors, real estate agents and other knowledge service providers. Innovation often means new, but isolated solutions of clients' problems – ad hoc innovations cf. the terminology of Gallouj (1994). For some knowledge service providers (e.g. consultants, brokers), the service is very often innovative and much based on the provider-client interaction because it is not standardised and mass-produced. For other knowledge service providers (e.g. software services, accountants), it may be less innovative because the service is more standardised or follows fixed legal procedures. When the knowledge service is innovative, it is often not reproduced (cf. Sundbo and Gallouj 2000) because the client's situation and problem are considered unique. Therefore, traditional knowledge service innovations remain ad hoc and the economic benefit for the service firm limited, for example compared to industrial innovations where a new product is sold in many copies.

Gadrey and Gallouj (1998) have launched a model of innovation in knowledge services based on the interface between the service provider and clients as the source of innovation. They establish three innovation categories: *Ad hoc innovations*, which are developed in the delivery situation where the service firm develops a new ad hoc solution of a specific client's problem. *Expertise-Field innovations*, which are ideas that the knowledge service firm develops through its reflections on several experiences of solving clients' problems. The idea is sold to several clients, which requires marketing and thus communication with potential clients. However, the innovation is not co-produced with a specific client. *Formalisation innovations*, which are development of new standardised procedures and methods, for example based on IT. They represent an industrialisation of the knowledge service (cf. Sundbo 2002) The client-involvement in this type of innovation is weak according to Gadrey and Gallouj since the formalisation process is internal. One may argue that new procedures and methods create new behaviour of the service firm towards clients thus it affects the provider-client relation. The way that the clients received the new behaviour may be reflected back to the service firm, which will adjust the procedures and methods to get more satisfied customers (as argued in the theory of strategic reflexivity, cf. Fuglsang and Sundbo 2005). Even formalisation innovations thus may be developed in co-operation with clients.

Trust is crucial in user based innovation, particularly in knowledge services where the service provider gets information of – often very sensitive – conditions of the client. The co-development of innovations with clients demands trust as generally in co-operative and network business relations. Gadrey and Gallouj argue that ad hoc innovations require short-time moments of trust, which is very intensive and personal because the innovation is developed by concrete persons of the service firm. The expertise-field innovation requires long-term moments of trust, which is less intensive (not based on trust in concrete persons) because the client buys the service product before he knows the providing persons. The formalisation innovations introduce a kind of trust that is based less on the service provider as person(s) and more on the standard solution product that the provider delivers. The client will often not know the persons that have developed the standard procedure, although, if the service is delivered in a person-to-person relation, he will know the personnel that deliver the product. If the service is delivered as a self-service, the client will often not know any personnel of the service firm and he then has to trust only the service product. This leads to a theory saying that when one goes from the most intensive, individual face-to-face interactive knowledge service products to the most standardised, IT-based ones, the trust becomes less person-oriented and more product-oriented. This means that it is more difficult to rescue failures in the product or the delivery system by personal sensitivity or “charming”. The advantages of relationship marketing (Gummesson 1999) become weaker and the customer's trust will be based on how the service (the advice, the analytical tools etc.) functions for him. It also becomes more difficult to involve the customer in the innovation process because he is more distant and there is no immediate personal interaction with him.

The above analysis concerns the traditional provider-client relation in knowledge services where the service delivery is carried out in a person-to-person interaction. This is the ideal situation from the perspective of customer-based innovation. The client is per definition involved in the innovation process, particularly when it concerns ad hoc innovations. This situation may create satisfied customers as argued in the service marketing theory (e.g. Grönroos 1990), but it does not increase turnover or profit much. The innovations are often not reproduced (a new service sold in many copies, a new process fully implemented in the whole enterprise) (cf. Gadrey and Gallouj 1998, Sundbo and Gallouj 2000). A reproduction and increase of profit may be ensured by introduction of self-service, which means e-service. Knowledge services are more standardised or modulised (cf. Sundbo 2004) or at least formalised when they are transformed to e-services, which increases productivity and thus

profit. Further, ICT networks have become widespread distribution channels and it is thus natural for knowledge service firms to use them and introduce e-services.

How is the provider-customer relationship changed when e-service is introduced and how does this affect the innovation process and the user involvement?

First, we can conclude that the innovation tradition in knowledge service firms is ideal if we take the customer or user innovation perspective. The customers are always deeply involved in knowledge service production and thus also in the change of these, which means innovation since innovation in knowledge services traditionally have been ad hoc ones. However, this may not be economically ideal for the knowledge service firm, which has difficulties in creating great profit and accumulate large capitals. These are necessary if one should invest in comprehensive development of the firm. Knowledge service firms do not grow much in an organic way (by innovating and increasing productivity) compared to the growth of innovative manufacturing firms; if they grow, it is normally by acquisition. This may be assumed to turn the perspective of the knowledge service firms towards standardisation or modulisation (Heskett et al. 1990, Sundbo 2004). The knowledge service firm will attempt to develop a larger degree of reproduction of the innovations (cf. Gallouj 2002) to create a larger profit. This implies a shift in the business perspective from the more professional, academic, which has traditionally characterised knowledge services (litt.) to a more industrial one. It might not be a wish of the service-professional, but it might be a development law created by the market pressure with more price competition on one side and the new technological possibilities of the ICT-networks such as the Internet on the other side. However, if knowledge services become modulised or event standardised and the innovations large-scale reproducible – industrial self-services, what happens then to the crucial customer relation? It may disappear, which will leave the knowledge service firm in the trap of pure price competition. It might perhaps be maintained, however, that should be in a new form where the customer-ICT interface would be a central factor. Could that interface even be the basis for a more advanced and efficient customer involvement in innovation processes? These questions are crucial to knowledge service firms and the macro economy and will be the fundament for the analysis in this paper.

## **5. Theoretical issues of the analysis**

The analysis will be based on a discussion and empirical analysis of some theoretical issues that has been raised in the scientific discussion of service production and which is actualised of the possibilities of providing e-services in practice, cf. the above discussion. The issues concern what happens with the innovation system when knowledge services become e services instead of traditional person-to-person delivered ones. This section presents the issues that will be analysed on basis of the empirical case studies in the paper.

One issue is the discussion of the self-service society where knowledge services can be produced and delivered as self-services via IT-networks (e.g. Castells 1996, Fuglsang and Sundbo 2006). This can have dramatic effects on the production and innovation process and the service organisation.

*The first issue is whether service professionals (e.g. accountants and consultants) are not involved directly in the solution of the customer's problem, but become developers. They could instead be involved in developing standard concepts in a laboratory kind of organising innovation activities.*

Another issue is the discussion of standardisation or modulisation of the services (cf. Sundbo 2001).

*A second issue is whether a condition for the knowledge service firm should benefit from the innovation investment is that the e-service is reproduced and thus sold to other customers (than for example the one that has participated in the first development of it). Eventually could elements from the new service be combined with other elements in a modular system.*

The issue of protection – IPR – is one element in an understanding of this development.

A third issue is the discussion of service firms become strategic in their innovation process. This has been found in earlier analyses as being characteristic to service firms that provide standardised mass services (Sundbo 1998, 2001, Tidd, Bessant and Pavitt 1997, Nyström and Liljedahl 2002). Since e-services can be characterised as standardised and mass-distributed ones, it is obvious to assume that the innovation of e-services is included in a strategic process.

*A third issue could be whether the knowledge service firms base their innovative ideas on the market possibilities and make a strategy to exploit these.*

The next issue concerns the main topic of the article, customer involvement in innovation of e-services. The direct involvement of customers in the innovation and strategy processes is one of the core issues to investigate. In theory this is the right thing to do, but there are only few analyses of how to do this in practice and what the benefits and barriers are of doing it. In Denmark there has both in political discussions and policy oriented analyses been a conceptualisation of “user based” innovation as a general approach to understand innovations processes. However, the further discussion has also demonstrated that there are problems in this conceptualisation. It seems intuitively and politically right, but it is not exactly clear what is meant by the concept “user based”. Two sources of inspiration for it can be identified. One is the notion of strategic innovation developed from studies of services (Sundbo 2001). However, in this notion the customers play a complex role as opportunities to innovate, but the innovation decisions are taken from a strategic future oriented perspective in which the firm can not rely on customers telling what they exactly need in the future. Another source is the identification of social groups developing new tools or solutions outside the formal economy, what has been called “democratization innovation” (von Hippel 2005). Firms may look for such innovations and imitate them and thereby include them in the formal economic sphere. This may be one source for market or customer based innovation, but is insufficient as the only source, among others because it excludes the ordinary customers. One can thus not base a complete customer-based innovation theory on this notion.

In this paper I will base the understanding of customer involvement on the notion of strategic innovation, which exists in service firms (Sundbo 1998) and in all firms in general (cf. Tidd, Bessant and Pavitt 1997). This notion emphasises a broad spectre of customer-inspiration or –source for innovation. These include ideas coming from employees’ interaction with customers, futurological market analyses and strategy formulation, direct involvement of customers in the innovation process (by different methods) etc. The latter has been demonstrated to be obvious, but also very difficult to explore for service firms. The involvement of customers or more intensive co-operation in the innovation process is therefore a particular important issue to emphasize in this analysis.

*A fourth issue could therefore be to what degree, how and with what results customer involvement and co-operation is happening in e-service innovation processes. A specific question is whether very beneficial customer involvement in the innovation process is only possible when the new service is developed as an equal co-operation between the service provider and the client. This latter question is only relevant to business-to-business services.*

*For business-to-consumer services one may assume that conditions for beneficial customer involvement is the use of multi-varied methods and that the customer involvement continues after the introduction of the innovation in an after-introductory correction process (after-innovation).*

Further, the trust relation between the innovating knowledge firm and the client may be supposed to be important. Gadrey and Gallouj (1998) discuss the provider-customer interface in business and professional services and emphasise the trust factor in “the moment of truth”. They suggest that ad hoc innovations, which are the quick solutions of clients’ actual problems, imply short-term moments of trust (not deep, long-lasting trust) while expertise-field innovation, which is a longer-lasting mutual learning process, implies long-term (stronger) moments of trust. These are the traditional person-to-person service deliveries and there is nothing surprising in their theoretical assumptions. Development of e-service products may be categorised as a formalisation innovation in Gadrey and Gallouj’s terminology. Gadrey and Gallouj suggest that the service provider in this case wants to exclude the customer from the innovation process because the provider wants to develop a standardised product where customers could be disturbing elements because they present individual wants to the standard solution. Thus, the trust factor becomes irrelevant.

The approach in this paper is different and suggests that knowledge service firms are interested in the customers’ (or users’) involvement in the e-service innovation process to assure that the new product can be sold on a mass market. I suggest that in development of e-services or formalisation innovations, the trust relation depends on whether the customer involvement in the e-service innovation is a business-to-business or a business-to-consumer situation. If the innovation is developed in a long process in co-operation with one business client, one may assume that there must be a medium-termed (and medium-intense) but formalised trust. The service firm needs to involve customers for a certain period longer than needed for ad hoc innovation and shorter than needed for an expertise field innovation. However, since the common innovation process can result in a reproducible product and possible large profit, it is important for the trust relation that the rights to the product are formalised. If the service firm involves consumers in the innovation process, there will be many consumers involved for brief moments (e.g. participating in focus interviews or market surveys). In this case, the service firm may be supposed to be interested in the future product loyalty, i.e. that the consumer demonstrates that she will buy this product. Future product loyalty may not be what we normally will term trust, which requires a longer person-to-person interaction. This leads to the below research issue.

*A fifth issue is what trust means in the customer-involving innovation process. It might be assumed that business-to-business based e-service innovation processes demand medium-termed, but formalised, trust. It might also be assumed that business-to-consumer based-service innovation processes not demand trust, but investigates future market loyalty.*

One theme that needs discussing is what trust means, particularly since service firms when relating to individual customers do not seek trust, but loyalty. Trust as a concept is used in for example network theory to characterise that co-operating partners will not later cheat each other because that would ruin the basis for networking. They could cheat each other by using the common innovation or other information or tools to make a profit themselves. Trust thus means establishing a symmetric relation. This is relevant in business-to-business e-service innovations. The same relation is not relevant for business-to-customer innovations. This can never be a symmetrical relation in which personal trust can be a relevant factor. The service firm nevertheless seeks a kind of future trust, which can be characterised as loyalty. This is a

well-know concept from the service marketing and quality literature (Edvardsson 1997). Service quality is used to make customers loyal, which means that they will come back and buy the same service, even though the price is higher than an equally good service from another provider. Loyalty thus is not a matter of personal relations, but of whether a customer believes in this particular service provider always delivers good quality for money, whether it is technical quality (the core service) or functional quality (the peripheral service) (cf. Grönroos 1990). If such a loyalty relation is established, the customer will to some degree accept a higher price, he will not look for alternatives and will to some degree accept occasional quality failures. What can make a customer loyal is a good branding, good peripheral service elements, which should be personalised, even when it concerns mass standard services, and a clear expression of the core service quality standard. The difficulty of loyalty creation in innovation processes is that this concern future loyalty. Creation and test of future loyalty can be done through emphasising branding, personalised peripheral service elements and quality declaration when the innovation in the process of developing the innovation and to test on customers at different stages of the development process whether these elements could possibly lead to loyalty. This means that customer testing not only should concern the core technical quality of the e-service.

The last issue is knowledge management and knowledge sharing. This – rather large – theoretical field can provide concepts and approaches to analyse what the clients get out of the knowledge service and why they prefer or accept self-service. However, in this case emphasizing e-services it is simpler - at least superficially. It is a matter of a buying decision, which in all cases is related to the price as one decision parameter. Will the customers buy an e-service instead of a traditional person-to-person one and why? This simple question is the relevant one when it concerns business-to-consumer services. It might be the relevant one in business-to-business services as well, however, it might also be that a more complex knowledge sharing process is relevant to consider there. It could be the question of how the business-customer's employees or maybe customers, the end-users, use and share knowledge from the e-service.

*A sixth issue concerns why customers should prefer and buy e-services instead of traditional person-to-person services. One hypothesis is that the customers demand e-service because of the price. Another hypothesis is that the customers demand e-service because the knowledge should be shared between the customer's customers or employees – and that is easier with e-service than with traditional person-to-person delivered ones.*

These six issues will be investigated and discussed in the coming empirical analysis.

## **6. Empirical method and data**

The available data are some case studies that have been carried out in Danish projects on knowledge services. Case study is an adequate method when one faces a new phenomenon such as e-service. The case studies provide an insight into the details of the phenomena and a hermeneutical understanding of the behaviour and the background for it in the acting agent, in case knowledge service firms. This analysis is not hermeneutical in the extreme ethnographical sense, however the analysis will be based on four case studies. The cases will first be described separately and then will certain aspects from each case be analysed and discussed in order. These aspects are provided by the above hypotheses.

The cases are the following:

- *NewInsight* and *Career Plan*. NewInsight is a small consultancy firm with about 15 employees. The analysis concerns a certain product, Career Plan, which is a web-based career assessment system developed in co-operation with and sold to a union. The case is a business-



to-business case since the consultant's client is a union. However, the case emphasises the issue of the client's clients.

Data from this case is documentary material, observation (through a long and intense partnership) and nine interviews in the organisations involved.

- The Danish Broadcasting company – *DR*. This will be a business-to-consumer case.

Data from this case includes 12 interviews and documentary material.

- A business travel agency, *TQ3* and *Net-travelbooking* (cf. Fuglsang and Sundbo 2006). This business-to-business case, TQ3 is a large worldwide business travel agency with 13.000 employees worldwide.

Data from this case includes 14 interviews

- A real estate agency, *Robinhus* and *Net-Housesale*. It is a small real estate agency with about 30 employees situated in Copenhagen. It is a business-to-consumer firm since it sells private houses and apartments.

Data from this case includes seven interviews.

## 7. The cases

I will first present the cases. Innovation in knowledge services, even of e-services, is still a complex process where the context is crucial. By context I mean the traditions in the firm and its customer-relations, which products the firm normally has delivered and the specific market conditions. On the basis of this more holistic and in-depth description, I will in the next section discuss the six research issues across the four cases.

### *New Insight and Career Plan*

New Insight is a consultancy firm which delivers a series of analytical and management services and which is specialised in labour market analyses. It is owned by one person who is educated as a sociologist. It operates as knowledge business service firms have traditionally done in close person-to-person with intense interaction. It is more in the “expert field” than in the “ad hoc solution” field (to use the phrases of Gadrey and Gallouj 1998). Career Plan is the first ICT-based system in the firm and the first product that could be mass-produced.

The Career Plan is an innovation that has been developed by NewInsight in co-operation with a union, HK (the union for office clerks, sales assistants etc.). It is a web-based system that can be used by individuals to test their competencies and personal and professional profile. Through surveys, the user is presented to a profile that he can use to ask the system for suggesting which type of job is most suitable for her. The profile is presented through videos and voices. The user can work with it herself, and can then ask a consultant in the union about specific questions if necessary. Career Plan was wanted by the union as a service to their members. Everybody can use a brief demonstration version of the system, which is seen by the union as a means to recruit new members. However, only members can get access to the full system.

The consultancy firm started the development of the system in 1998 in co-operation with another union, IDA (union for engineers) and a PR business partner, Brandhouse. This union stopped the development project because of problems in a very ambitious plan of introducing many new IT-based careers and learning systems for their members. This project gave NewInsight new knowledge and experiences with web-based systems and IDA paid a part of the development costs.

NewInsight succeeded in interesting another union, HK, in the project in 1999. HK had then decided to develop a new career service to their members, who are exposed to the restructuring of the labour market. They change job function regularly and need to know their personal competencies. HK had earlier co-operated with NewInsight and had trust in them. HK started developing a paper-based career planning system with another consultancy firm.

However, they were engaging NewInsight for another job and when they saw that NewInsight already had worked with a web-based career system, they switched to NewInsight as a partner in developing a web-based system.

The system was developed in close co-operation with HK and a business partner, Courseware, who has technical expertise in IT-systems. Courseware also had earlier experience in developing career assessment systems. For the union this was a product that they want to use to maintain the members. For the consult it was an ordinary product in the sense that they should solve a task for a client where they could use their labour market expertise. The product, however, was unusual in the sense that the solution should be delivered as an e-service. NewInsight neither have particular IT-expertise, nor the pedagogical expertise that also was necessary to create the system. The development process was implemented successfully, although characterised by problems as normally in innovation projects. These problems were primarily caused by the client did not know the exact requirements to the system and it was difficult to establish an exact division of labour and lack of solution to problems coming up. There were no trust problems, which also can be explained by the fact that both NewInsight and Courseware had a long tradition for co-operating with unions. The partners met regularly and discussed problems and the next step. Competence consultants from HK have been deeply involved in the development process. One consultant from NewInsight was the leader of the project and the main contact person.

The system was fully implemented and marketed 1st January 2006. HK use it as a core member service and recruitment instrument. The union advertises for it in magazines and newspapers.

The customer's customers – the members – have been involved although not intensively in the development. They have been involved in focus group interviews. After the implementation, members have reacted to HK's competence consultants and via the web site directly to HK and suggested improvements of the system. There are many addresses from the members, which, however, point in different directions such as they want a particular Career Plan for specialised jobs such as laboratory technicians. The union now discusses how many of these special demands could be met in the system in a further development.

Already after four months HK had have many enquiries about the system from unions in Denmark and other countries, who wanted to use the system. The consulting and the HK union have made an agreement to try to sell the system, primarily to other unions, but it could be to anybody including introducing it as a general product available on the Internet. The contract says that if the system is sold to other unions, HK participates in the sales activities and gets a part of eventual profit. NewInsight is free to sell the system to other clients without involving or paying HK.

## *DR*

DR is the old state-owned Danish broadcasting company. It is still state-owned with a public service obligation of spreading knowledge to all people. DR transmits several TV and radio channels. It is very focused on the different profile from the pure commercial TV and radio stations, which are only occupied by the number of people listening to which emissions. DR is also occupied by this and innovations are user-based; for example do DR large surveys to measure the needs of the public. However, innovation in the information services is also created internally by the journalists. Broadcasting is increasingly made via the Internet and other ICT-network media (such as mobile phones). Thus, DR is forced to increasingly market "per view" emissions on web sites and as mobile telephone services – what we call e-services.

They have organised the ICT-net creating a specific department, which has the responsibility to broadcast on the Internet and mobile phone net. The department is small and does not produce anything themselves. They re-use emissions that have been sent via radio

and TV channels. They are occupied by new ICT-network possibilities and try to create an interest in DR for developing innovations within ICT-network based broadcasting thus DR not only send old broadcastings. The department meet the impediment that they argue from new technological possibilities while the traditional way of thinking in DR is to look at the journalistic or entertainment content.

DR has introduced an innovation program and involves the customers in the innovation processes. They have established a development department with a particular task force that will engage the managers in innovation, they have created a strategy that stresses innovation and they have introduced a more top-down management policy to emphasise customer-based innovations more than journalistic ideas. The customers are involved by several methods: Comprehensive surveys to the Danish population, several ways in which the public can complain or provide suggestions, focus group interviews and a planned experiment in the community around DR where the public's reactions to new broadcastings is measured. Then, the users are deeply involved on an individual basis in the innovation processes. The new community experiment will involve the users as a community, which is a methodological innovation in itself. Since it is only in the planning stage, we do not have any results from it.

### *TQ3 Travel Solutions and Net-travelbooking*

TQ3 has in the last five years attempted to transform booking of journeys from personal bookings (the customer calls, write or comes himself) to net-bookings. Customers are firms and normally one person in the customer firm makes the booking. The personnel of the customer firm, who are going to travel, send the order to this travel-booker. TQ3 has developed Net-travelbooking: The customers can book the journeys themselves via the Internet without any personal communication with the personnel of TQ3. The travel agent attempts to motivate the customers to use the e-service, for example via discount and courses for the travel ordering personnel in the customer firms. Travel booking is a knowledge service because it normally implies flights and the price system for flights is so complex that it requires expertise to obtain the cheapest price. Besides, the travel agency also knows about hotels, local conditions etc. This case also emphasise the issue of the client's clients since the employees in the customer firm may be considered clients of customers firm's booker.

This innovation is for TQ3 both a product and a process innovation. It is a new product to which new modules can be added in the future as the need is observed, for example special hotel information such as view, style and other customers' quality assessment. It is a process innovation because the booking is automatic without involvement of employees in TQ3. It can in their option lower the personnel costs down to 5% of the costs by manual booking where TQ3 must have a person to talk with the client and make the booking (however this goal has not been reach in practice).

The system was developed in the Danish part of the corporation, which at the starting time was an independent firm that was later acquired by TQ3. The development took place in the IT department. A development group was established with representatives from different departments. Customers were not involved; the IT-experts did not believe in that. After the system was developed and implemented, it has become a success, although only a limited such one. The benefit for the customers is a lower price for the booking (typically 80-85% of the price of a manual booking). This is also the main reason for the client firms to make a contract on using the system. An advantage could also be that the self service system could provide more, and perhaps more reliable, information in an well-arranged form. The latter is also the case to many customers, however, many travel-bookers prefer still to talk to person in TQ3 that the travel-booker knows. The booking process thus has traditionally had a social element.

The system is not as fully self service as it could be if the employees in the client firms themselves could book the trips. Such a development is technically possible, but is not wanted by the client firms. They want a central travel-booker to ensure that every employee follows the travel policy, which in most cases consist in making the cheapest travel.

TQ3 invest much in the sales process. When a client firm has signed a contract, a person from TQ3 comes a half day to instruct the travel-bookers in the system. The travel-bookers can always call a hotline in TQ3 if there are any problems. The hotline functions as a development workshop for TQ3, primarily because of the leader see it as such. Complains and ideas from the customers are used to correct the system and developing new modules to it.

### *Robinhus and Net-housesale*

Robinhus is a knowledge service firm. Selling and buying houses is a complex process with many economic and legal problems. It has traditionally been a person-to-person service delivery with the real estate agent as the expert on central issues such as: What are the actual market prices? How to sell the house to the highest price (negotiating with the potential buyers)? However, the fees that he seller has to pay to the real estate agent is high and has in Denmark increased tremendously in the economic prosperity of the last 15 years. Thus, there is a clear market incitement to introduce a low-price system. Robinhus has introduced such one in form of e-service. The customers can do much of the paper work and announcement of the selling via an Internet-based system where fees are much lower than normal. This e-service system has been developed by the two owners of Robinhus.

The two owners, who are entrepreneurs were not real estate agents. They came with a background from the e-service industry and were primarily interested in the technical possibilities of e-service. To them Robinhus was just an e-service "case". They wanted to invent an e-service.

The entrepreneurs started by employing some real estate agents. Then they started their innovation project of developing Net-housesale, a self-service system for selling houses and apartments. The idea was that the customers should use a web based standard system in which they filled the necessary information about the house, economy etc. They should get help from Robinhus, which also should set a price of the house from their market knowledge. The house should be advertised only on the Internet, which is much cheaper than advertising in newspapers. The seller should himself communicate with potential buyers of the house, however he could consult Robinhus. The system was developed through networking and co-operation with external partners, who had an expertise that was lacking in Robinhus. Informal networks to other firms and professional played a great role, primarily within IT-competencies, not much to actors with real estate competencies. Customers were not involved in the development process.

After the system was implemented, there has been a continuous development process. The system has been adjusted and new elements included. The basis for these incremental innovations has been experiences from the employed real estate agents' meeting with problems in the sales process. The employees' interaction with the customers is a basis for further innovation, but the customers are not in other ways involved in this innovation process.

The customers were supposed to use the Net-housesale because they can save money by the real estate agent's fee is lower than normal. One would suppose that the customers are better educated and used to take large decisions if the should rely that much on themselves in an economic transaction that to most of them are one of the most important in their life. This is also the case. However, this point is also the explanation of why Net-housesale has not been such a tremendous success that one could suppose (although the firm still exists and has grown). The customers dare not to rely on themselves and are most secure when a real estate

agent sells the house. Even Robinhus' clients use the possibility of consulting one of the firm's real estate agents more than the entrepreneurs expected.

## **8. Analysis of the research issues**

The research issues will be analysed and discussed on the basis of the four case studies.

### **The role of the employees in the innovation process**

The issue concerns whether the service professionals become secluded developers that not have customer relations in the innovation process. In three of the cases, the service professionals do a "laboratory" kind of development work with no direct client interaction. TQ3 and Robinhus have developed their e-service system as standard concepts without involving customers. The Internet/mobile department of DR measures listeners' habits, but have no person-to-person interaction with them. Only NewInsight has had an intense client relation. For NewInsight this innovation has, as an e-service, been an un-intended output of a tradition consultancy task, which implies interaction with the client. The intension has not been to develop standard concepts. The other three firms had a clear strategy of developing an e-service.

Thus, if the service firm has a clear intension of developing e-services, it seems that the service professionals get more involved in "laboratory" work developing standard concepts without the traditional personal customer relation that has characterised service production.

### **Reproduction of the innovation**

This issue suggests that the development of e-services is combined with development of reproduction of the service thus it can be sold to many customers. This is a basic question of industrialisation and production of mass services and as such there is nothing surprising or new in it. The e-services in DR, TQ3 and Robinhus are developed and sold as mass services. The surprising fact is that the Career Plan system that NewInsight has innovated is not reproducible in the first version. The cases and examples of the system are tailor-made to HK and cannot be used by members of other unions. These observations point to innovations in standardised knowledge e-services can be intended or non-intended. The first is the result of a planned, often strategic based process. The latter is when innovation grows out of a situation where it was not intended to develop a standardised service, and maybe not even an e-service. The reproduction possibility comes up in the process of developing a more traditional e-service. In this case, it has made the reproduction complicated and less profitable because Career Plan is a complex system that is not easy to reproduce and sell to a new business client. However, it could be developed to a more general system that could be reproduced, but that implies high development costs.

### **Market and strategy based innovation**

Three of the firms, DR, TQ3 and Robinhus clearly take a strategic approach to innovation. They have all created strategies that emphasise the new e-service possibilities and to innovate within that framework. DR wants to explore the new possibilities on the Internet, mobile phone network and other networks, not only to "re-sell" broadcasting, but also to develop new products for these media. TQ3 travel has, based on a cost-reduction strategy, created a strategy for motivating their customer to use standardised e-service instead of traditional person-to-person service; this requires innovation. Robinhus is based on the strategy to develop an innovative Web-based system for cheap selling and buying of houses. They all want the market to accept the innovations, however, TQ3 and Robinhus have to a surprisingly low degree made market analyses and innovated new forms of relating the ideas to market possibilities. Their innovation processes have mostly been driven by internal entrepreneurship

and professional ideas. DR greatly emphasises market possibilities. They make many market and reception analyses and base their innovations directly on them.

NewInsight do not base their innovation (Career Plan) on market analysis. This innovation is not even strategy based. It has been developed in a process where the next step was taken because the possibilities turned up and an intrapreneur in NewInsight maintained the idea. The innovation was related to the market in the way that the next step was only taken when NewInsight could see that the customer was for it. In fact, only after the development process, partly as a result of our case studies, has Career Plan led to a strategy of, maybe, reproducing this product and selling it to other customers if a market exists.

In conclusion, all the studied firms end up with a strategic and market based innovation processes, however, this inclusion in market based strategies happens at varied stages of the process. The latter is caused by the management's approach or business idea, i.e. whether to produce standard mass services (as DR), primarily to develop cheap e-services (as Robinhis), or the traditional person-to-person knowledge service (as NewInsight).

### **Customer involvement and co-operation**

Customers have been involved in the innovation process to a varied degree in these cases. In the NewInsight case the innovation has been developed in close co-operation with the customer. This has been an equal partnership and both parties have afterwards defined rights to the innovation. In the TQ3 case were customers not involved in the development of the web-based travel booking system, which was developed in the IT department. The developers did not believe in involving customers. Afterwards have employees in the customer firms been involved in adjustment of the booking system. A hotline to solve problems that the firm bookers from customer firms face using the web-booking system has been established. The problems presented to this hotline have been a basis for improving the system. This demonstrates that even a mass self-service knowledge e-service could advantageously be developed after the formal market introduction. In this after-innovation process, customer-involvement seems to be an advantage. One may discuss whether the after-innovation process is part of the innovation process at all, since it is placed after introduction onto the market. However, it demonstrates that innovation in services, even of e-services, is not a one-shot, but a continuous process about which it is difficult to say exactly where the innovation process starts and ends and where it thus differs from other processes, for example marketing.

DR involves customers by means of many methods: surveys, e-mail reactions, focus group interviews etc. in the e-service innovation process as well as afterwards. DR thus also practice after-innovation based on customer involvement. Robinhus has not involved customers in the development process; this was an internal entrepreneurial process based on fascination of the new technical possibilities just as in TQ3. However, since then Robinhus has also adjusted the web-selling system, based on customer reactions. The web house-selling system is not a complete self-service system, the seller is always interacting with a real estate agent, who also signs the final contract. Through this interaction process, the real estate agents get insight into the function of the system and thus ideas for improvements. This has been more consciously emphasized by Robinhus and been basis for after-innovation of the system.

Concerning the question raised earlier about the issue of customer involvement in e-service innovation processes we can on the basis of these case conclude that the e-service is innovated in equal co-operation with the client in one of the business-to-business cases (NewInsight), but not in the other (TQ3) thus this as a hypothesis has not particularly been supported. In one of the business-to-consumer cases (DR) was multi-methods to customer involvement used, but not in the other case (Robinhus). This hypothesis is not strongly supported. What is supported is a hypothesis of after-innovation: That the e-service is further developed after the market introduction based on customer involvement and after-sales reactions. This happens in

all four cases. E-service innovation is a long, continuous process, which does not stop with the first market launch. The after-innovation process is based on person-to-person interaction about the function and quality of the service. Successful e-service innovation thus requires a certain element of person-to-person interaction as in the traditional service delivery situation (cf. also Fuglsang and Sundbo 2006).

### **Trust**

NewInsight and TQ3 are selling business-to-business services. According to the earlier stated hypothesis the business customers will be involved in the innovation process, which requires medium-termed, but formalised trust to be successful. The development of Career Plan was based on long-term trust. NewInsight had relations to HK from earlier projects. HK knew about NewInsight's work with developing a similar system in IDA, which is an organisation similar to HK. The development of Career Plan was taken through several steps where it was not sure whether the next step should be taken or what it should be. Thus, there were many elements of long-termed trust in this innovation process. A formal agreement about the innovation process was established, however, it was a very general framework, which is the normal form of contract in small consultancy firms, at least in Denmark. There were no prearranged agreements of the rights, distribution of profit or any other legal matter. It was just an agreement NewInsight undertook some consultancy work for HK under normal conditions. In fact, it was not clear from the beginning that this project would develop into a reproducible knowledge service that could be sold to many customers. That only became clear very late in the process when Career Plan had been fully developed. When NewInsight and HK saw that the developed service could be sold as a mass service, they set up a formal agreement, which specified rights and distribution of profit. Thus, this case does not support the hypothesis. Innovation of CareerPlan was based on normal long-term trust, which is characteristic of person-to-person knowledge services (cf. Gadrey and Gallouj 1998). An abnormal agreement was only established at the latest stage of the innovation process, when the new product was developed and it might be sold to other customers.

One may further observe that customer loyalty is an important factor in the Career Plan case, not necessarily the loyalty of the direct customer, HK, but the loyalty of the customers' customer to the customer (the members loyalty to the union HK).

TQ3 did not involve customers in the innovation process (cf. Fuglsang and Sundbo 2006). Their involvement of customers in the innovation process was restricted to the after-innovation stage cf. above. Customer involvement at that stage aimed to create satisfied, loyal customers.

DR and Robinhus have both emphasized customer loyalty in their innovation processes. DR systematically involves market analyses and measurements of customer reactions to their new web or mobile phone based services. They want to ensure a future segment of listeners. They have no intention of preventing listeners to listen to or watch other channels, but they want a large market segment to listen regularly to DR. The listeners or watchers can not have any personal trust in DR or DR's product development since this concerns a mass market and they do not meet people. The listeners can have some trust in DR taking care of their expressed opinion, e.g. in e-mails. DR therefore emphasise signaling that they take care of the listeners reactions in general (even though they have no possibilities of answering every individual listener). In this way, DR attempt to create a loyal market as they simultaneously develop new self-service knowledge products. Robinhus is in a market where few individual customers could be loyal. It is normally a few times in a lifetime that people sell or buy a house thus only few of Robinhus' customers could be supposed to become regular customers. Therefore, in their innovation process Robinhus attempts to create a loyal market segment, which means that conditions for web-real estate agency attracts a certain market segment that

can be identified. However, to the degree that customers from this market segment sell houses several times, Robinhus wants to make them loyal customers in the sense that they will use Robinhus' web-service every time.

From these cases one may conclude that even development of e-services demands long-term trust if the innovation process is a co-operated business-to-business one and that formal agreements expressing formal trust cannot replace long-term and strong trust. Further, that loyalty of customers or the customers' customers is a crucial factor in e-service innovation. Even when a direct loyalty in form of repetitive service purchase can not be assured, it is important for the innovating firm that the e-service can fit into a certain market segment.

### **Buying decision and knowledge sharing**

Price is a central factor in explaining success of e-services, however not the crucial one in all cases. To develop a cheaper price is a determining factor of the innovation in TQ3 and Robinhus and their new e-service products are sold with low prices as the most important sales argument. They are examples of business-to-business as well as business-to-consumer services. In the Career Plan and DR cases the price does not play any role. Low prices were not an important aim in the development of these e-services. Career Plan is free for HK's members and nobody could beforehand know the possible market price for such a system sold on the free market. As a public service, DR can not demand payment for broadcasting, thus pricing is not currently a relevant issue. However, in a long-term perspective, even DR could possibly introduce pay-per-view. Therefore, they emphasize technical solutions that will give low-priced mass distribution of their services.

In the two business-to-business cases, Career Plan and TQ3, the new e-service should redistribute knowledge to the customer's customers or employees. This was a prerequisite for the innovation. However, this was primarily a condition for the business customers would invest in the innovation process (in the Career Plan case) or buy the first version of the launched e-service (the TQ3 case). HK discussed knowledge sharing very much and decided that the best advising of their members were the e-service combined with a possibility of a person-to-person advice afterwards. TQ3's customer firms wanted to distribute knowledge about travelling to their employees, however, to let them book via the firm booker to ensure the implementation of the travel policy of getting the cheapest travel. However, in both cases the knowledge distribution could have been directly from the service firm to the end-users. HK and TQ3's customer firms only act as intervening actors to ensure their own policies, not for the functional sake of knowledge sharing. The e-services are still efficient instruments of knowledge sharing and could be the basis for innovation and marketing of knowledge services. Both cases also demonstrate that the discussion of information versus knowledge is relevant (litt. Hanne). The direct distribution from NewInsight or TQ3 to the end-users may provide these with information, but to develop knowledge requires that the end-user can discuss problems with a person. This means that successful knowledge e-services require that the customer can consult an expert in the service provider firm (cf. Fuglsang and Sundbo 2006).

## **9. Conclusion**

The aim of the paper has been to analyse how knowledge service firms involve customers in the process of innovating e-services and how they can benefit from that. The development of e-services has been compared to the development of traditional person-to-person knowledge services.

It has been found that when e-service innovations are introduced, employees in knowledge service firms, even the professional ones, tend to become more back-office developers with rare client contact. The economic success of an e-service innovation depends on the



possibility of reproducing it, i.e. to sell it to many clients in many copies. The innovation process is pressed more in a direction of being strategically based. Customer involvement in the innovation process was not a clear fact in all cases; it seems as this is a difficult task, primarily because it concerns future customer wants and behaviour. Thus, customer involvement that should be obvious, particularly in services, is not practised as much as one might expect. A further research issue will be to investigate why it is so and what can be done to improve customer involvement. The trust factor has in these cases shown to be different than theoretically suggested by Gadrey and Gallouj (1998). The case in which the service provider developed a formalised e-service in close co-operation with one client, was based on long-term trust. More important than trust was the creation of loyalty from the potential customers. The e-services were only to a certain degree accepted because of a cheaper price than traditional services; a factor of acceptance was also knowledge sharing between the clients' clients or employees.

A particularly important phenomenon that has been observed in this analysis is after-innovation. This means that a knowledge e-service innovation is not completed when it is launched on the market. After this moment, adjustments of the service will happen if it should be successful. The innovation process is a series of small incremental innovations or improvements, which continues after the official launching of the e-service product. The importance of after-innovation can be explained by the way in which customers can be involved in the innovation process. As empirical experience has shown, it is very difficult to base innovations on customers before the innovation is launched because customers do not know beforehand what they want and they even have difficulties in assessing prototypes. They react by suggesting ideas for improvement when they use it in practice, i.e. after the innovation has been launched. That is where the end-user success (whether end-users are consumers or business-clients' employees or customers) of e-services is ensured. Thus, the knowledge service firm should emphasise after-innovation and establishing channels to catch customer-ideas in the after-innovation process. Customer-based after-innovation can thus be stated to be the ideal way to involve customers in e-service innovations. One should not look for customer involvement in the earlier stages of the innovation process, but in the later stages.

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