

IRIS

Selected Papers of the
Information Systems Research
Seminar in Scandinavia

Nr. 2 (2011)

Coordinating Editor:
Judith Molka-Danielsen
Molde University College, Norway

Issue Editor:
Kai K. Kimppa
University of Turku, Finland

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Association for Information Systems

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Issue Theme “IRIS 34 ICT of Culture – Culture of ICT”

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Foreword

Judith Molka-Danielsen, Kai K. Kimppa

Information Systems Research Seminar in Scandinavia (IRIS) is the title of an annual meeting of Information Systems (IS) researchers. The IRIS seminar distinguishes itself as the eldest IS seminar in the world, as it has been established in 1978. IRIS is organised by the IRIS Association, which is a chapter of the Association for Information Systems (AIS). IRIS offers a unique format in the IS field that utilises working groups led by an established researcher in the field, and in which all the papers of the working group are read by all participants of that group. Each group member in turn comments on the other papers of the group. IRIS is also a forum for networking activities. In the traditional seminar segment called the IRIS games, participants learn to know each other through intellectual and team building exercises. Contact through these activities lead to both friendships and academic collaboration with lifelong impacts on careers. The IRIS seminar is especially beneficial to PhD students in helping them to establish new networks and aiding them in raising the quality of their research. In the late years, IRIS has been combined with the Scandinavian Conference on Information Systems (SCIS) to ensure the participation of a wide range of both starting and established academics in the IS field.

The articles of this second issue of the *IRIS Selected Papers of the Information Systems Research Seminar in Scandinavia* were originally proposed by the working group chairs and vice chairs (senior IS researchers). All of the papers of the IRIS seminar have gone through a peer review process, after which the chairs and vice chairs of the groups were requested to suggest one to two best papers of their groups for this publication, which were then improved according to the feed back from the IRIS seminar participants and finally passed through the selection criteria of the two editors of this issue, Judith Molka-Danielsen and Kai K. Kimppa. Judith Molka-Danielsen, the coordinating editor, represents the IRIS Association steering board, is the President of the IRIS Association and member of the board since 2008; issue editor Kai K. Kimppa was the Programme Committee Chair of the 34th IRIS seminar.

The 34th IRIS was hosted by University of Turku, Turku School of Economics, and held in Ruissalo national park, in Turku, Finland on the dates of August 16th to 19th, 2011. The theme of the 34th IRIS was ICT of Culture – Culture of ICT, as Turku was one of the two European Capitals of Culture during 2011, but also due to the importance of both the organisational culture's effect on IS and the culture within the IS field.

Selected Papers

Erik Olsson, Brian Lings and Björn Lundell, in their article "*Organisational Processes in the Secondary Software Sector: A Case study on Open Source Software Adoption*" give recommendations for knowledge transfer from a managerial perspective. They state that it is especially important that knowledge transfer is enabled from bottom-up and elaborate on what benefits for work practice can be gained from the changes introduced. Finally it is recommended that maintenance costs need to be taken into account early on in the project due to the differences of an open source software (OSS) system adoption to that of a proprietary system – an OSS system does not market itself in the organisation the same way a proprietary

system does. The introduction of OSS champions, strategists and specialists is offered as an answer to how to handle these issues correctly.

Rina Hansen looks at how 15 luxury fashion brands have developed their social and interactive online technologies in a four year period from 2006 to 2010 in the article "*How Fashion Brands Learned to Click – a Longitudinal Study of the Adoption of Online Interactive and Social Media by Luxury Fashion Brands*". A revised and extended version of Yang *et al's* (2008) 8C framework is presented, and found to be useful for luxury fashion brands' Web 2.0 technology adoption. It can be used both by the luxury fashion brands already existing in online environments and those aspiring to get visibility there.

In their article "*Developing Metrics for Analyzing IT Supported Student-Teacher Interaction in Higher Education*", **Linda Nordström, Pia Svanberg, Johan Lundin** and **Lars Svensson** the authors develop relevant metrics to measure the use of ICTs by teachers' for interaction with students. They find that teachers currently use various communication channels, which sometimes supplement each other, but at times can also be in conflict with each other. In the study, it is however found, that most teachers (81%) found the time used to communicate with students through ICTs to be time well spent.

Maike Hecht and **Susanne Maass**, in their article "*Software Design for E-Services*" describe the changing environment of e-services – many services are not offered by service professionals, but as self-service, or even as the authors call it, for a 'working customer'. Even though the companies have no formal obligation towards the 'working customers', it is beneficial for the companies to see to it, that their needs are taken into account, lest they loose the customers to competition. Thus, listening to the 'working customers'' needs and including them to participate in the design of the e-services they use will benefit both the customers and the companies.

In the article "*Hybrids Acting on the Hybrid Arena – Investigating Crimes Committed by Digital Natives*" **Erik A.M. Borglund, Lena-Maria Öberg** and **Thomas Persson Slumpi** present a problem facing today's criminal investigation in a situation where both analog and digital crime is used combined. The criminals work as 'natives' in both digital and analog environments, whereas the police has these roles typically separated. This provides the criminals with an edge on functioning in hybrid arenas. The article calls for the police to create a holistic understanding of both areas to be able to fully answer the changing needs of the criminal investigation – and if need be, to reorganise the law enforcement.

In the article "*Priming a Pilot Implementation: Experiences From an Effects Specifications Workshop*", written by **Magnus Hansen** and **Maria Ie Pedersen**, the initial findings of an exploratory action research study conducted in the Danish health care sector about effects specifications using the systems development method Effects-driven IT development (EDIT) to aid in developing an electronic ambulance record (EAR) in prehospital care system are reported. The authors approached the stakeholders – who came from a wide range of different groups – first with interviews to collect a large amount of desired effects of the system to the work practices. A workshop organised after the interviews was used to prioritise the desired effects to 20 most important ones. In the study it was found that explaining both the political environment as well as the technical functionality of the IT artefact were equally important, as the prioritisation of effects depended on understanding them.

Mari Ainasoja, Vivek Kumar, Mikko Ahonen and **Mikko Ruohonen** write about how social media shapes advertising sector in Finland and how this relates to development needs of customer relationship management (CRM) systems in their article "*Social Media, Convergence and IT - A Case of Finnish Advertising Sector*". They categorise the implications of this convergence to three areas of integration in marketing practice: integration of 1)

company functions, 2) media and message parts and 3) service providers, and provide seven development needs for social CRM systems in the advertising sector.

In the article “*Information Classification on University Websites: A Two-Country Card Sort Study*” **Ather Nawaz**, **Torkil Clemmensen** and **Morten Hertzum** use brainstorming, card sorting and information-retrieval tasks to study how 14 Pakistani and 14 Danish students classify information of university websites. The study finds that despite some similarities in the way the student groups classify information, clear differences can also be found in all three activities. Some preliminary results on how this could be explained through cultural differences are also presented in the article. It seems, that comparing locally produced and used websites could aid in cross-country Human Computer Interaction (HCI) research and practice.

Lars-Olof Johansson, **Ulrika Lundh Snis** and **Lars Svensson** look into “*Exploring Brokering Situations in an Innovation Boundary Context*” on a living lab process. The three different stakeholder groups studied were researchers, ICT developers and next of kin to demented elderly persons (as users). The authors describe the boundary relationship as a duality of boundary objects and brokering activities and situations. Boundary objects play an important role for communicating perspectives and knowledge sharing among Communities of Practice (COP). Brokering are done by people who introduce elements of practice between COPs. In the paper it was found that the use of several different kinds of boundary objects helped the different groups to understand each-other. The authors contribute with a process model that describes the dynamics of an innovation boundary context with two levels of brokering: product/service brokering and process brokering.

In the article “*The Walking Video Interview (WVI) as Potential Technique to Tap into the Everyday Experiences of ICTs*”, **Pernilla Gripenberg** combines lessons learned in the domestication, new media and communication research, mobile ethnography and the use of video for studying the interaction of the social and material to how contemporary, technology infused everyday life could be better understood using a walking video-interview. The walking video-interview can provide us with a better understanding of the individual ICT-landscape the way the observed users experience the technologies which they use. Sociomaterially complex environments require rich (and due to the richness, challenging) methods for a better understanding of them.

In their article “*Information Security Culture in Russian ICT Small and Medium Sized Enterprises*”, **Hannakaisa Isomäki** and **Oleksandr Bilozerov** present a Grounded Theory based study in which they produce an initial categorisation which shows essential features of information security culture in Russian ICT SMEs. As information security awareness of corporate managers in the studied companies seems to be low and information security related investments are seen rather as ‘just one more expense’, the development of information security culture of the companies is fairly slow. Isomäki and Bilozerov categorize the areas which need to be taken into account for a better information security culture to issues of awareness, requirements in business partnership, funds, policy, personnel training, violations and trust.

Hanne Cecilie Geirbo’s article “*The Community Power Concept: Mitigating Urban–Rural Digital Divide with Renewable Energy Mini Grids*” explains how renewable energy mini grids extended from mobile towers can provide electricity for various purposes in rural areas of low Gross Domestic Product (GDP) countries – both for domestic and commercial purposes of supporting the use of ICTs. To be able to utilise ICTs for the benefit of the rural community, human resources, social factors (e.g. social exclusion or gender) and local economic conditions need to be considered in a holistic manner, taking into account issues such as urban-rural digital divide, electricity access, topographic challenges and economic

sustainability. For the system to be sustainable, the telecom company providing the energy must benefit from expanding their markets, but also the government needs to commit to the concept – to a concept that starts small but is capable of expanding to the needs of the community as both domestic households and local industries electricity use grows.

Siw Lundqvist informs the readership of the book on findings which are needed for a successful post-merger integration, such as embracing openness to change, the necessity of providing means for adapting to new systems and to contribute to new routines, in the article “*A Perspective of Post-Merger Integration: Administrators Do Not Necessarily Resist Changes.*” Even though employee resistance to change is often presupposed, if the merger is handled well, a majority of those affected by it can still rather wish for further changes – sometimes even if the merger of the systems is viewed negatively. The research is based on a longitudinal study starting already pre-merger, and shows that the negative effects described in merger related literature can be countered.

Software Design for E-Services

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Abstract. Today, many personal services are no longer conducted in interaction between customers and service professionals but they are produced in self-service situations by customers alone. Companies increasingly use the Internet to offer standardised (e-)services to their customers. What does this mean for the design of the software that enables such self-services? What interests are inscribed into the software and who decides this? This article characterises the use of e-services, following the sociological concept of the ‘working customer’. We derive the particular requirements of e-service users and argue for the need of participatory design of e-service software.

Keywords. Service, Self-Service, E-Service Design, Working Customer, Participatory Design

1 Introduction

During the last decade, the trend towards self-service gained a new quality as companies increasingly provide their services as ‘e-services’ via the Internet. Now, consumers can search for products, do their shopping or banking online without interacting with any service professional at all, only using the e-service software provided. For software designers new questions arise with the advent of such applications that are aimed at a very diverse new group of users – potentially everybody.

In 2005, the sociologists Voß and Rieder introduced the concept of the “working customer” (Voß & Rieder 2005)¹. This is a “new type of consumer“ that is systematically involved by enterprises as an unpaid quasi-employee in order to create economic assets by using his personal resources (Rieder & Voß 2010): IKEA customers, e.g., transport and assemble their furniture themselves; shoppers pay their groceries at self-service checkouts; travelers buy train tickets online and print them out at home.

In this article we apply the concept of the ‘working customer’ to the case of e-services. We argue that in the interest of both, the customer and the company, this type of consumer needs to be supported very well by the technology that the company provides. Today, e-commerce experts complain about the high percentage of cancelled online-transactions on their websites; many shopping carts get filled but the sales never get completed. Something seems to go wrong with these sites. The design of e-service software has to be studied in much more detail to better match e-services with customers’ needs.

When designing software for e-services the special ‘workplace’ of the customer and the possibly contradicting interests of customers and the company have to be taken into account. In the following we will shortly sketch the development of the general trend towards self-service in Western countries and its socio-economic rationale. We will then point out the difference between service, self-service, and e-service with the aim of deriving basic requirements and design principles for good e-service software. The analogy between customer work in e-services and paid labour at display units helps to argue for a participatory design of e-service software. We conclude with a number of current research questions to stimulate further discussion - and hopefully more research within this field.

2 The Rationalisation of Services

Make-or-Buy – self-service has become a real alternative for consumers since supermarkets were established in the US at the start of the last century. When the idea came to Europe in the 1950s, people first were sceptical but in no time the concept proved to be a formula for economic success in Europe, too (Müller-Hagedorn & Preißner 1999, Grün & Brunner 2002, Ditt 2003). Self-service is based on a decision for the rationalisation of service: The customer takes over much of the work that has to be done. As a benefit, self-services are promised to be cheaper, less time-consuming, more fun, and to allow more privacy for the consumer (Andersen 1997).

After long years of poverty in the postwar period in many European countries, people started to enjoy the revived “cathedrals of consumption” (Crossick & Jaumain 2000). Now goods were plenty, directly accessible and aesthetically presented, and that way symbolized and advertised the promised upcoming prosperity during this era (Brändli 2000). Convenience restaurants were established and also in department stores and at petrol stations people were no longer served. In the 1970/1980s self-service also became a promise of autonomy and empowerment in another context: in many areas self-help groups were formed where people joined their individual expertise in order to support each other and not only depend on expert knowledge (Borgetto 2002). The concept of Do-It-Yourself furthered the sovereign handling of mundane handicrafts (Offe & Heinze 1990).

While self-service in its classical form continually found its way into more markets and areas of service, a structural change could be identified with the rise of ‘e-services’ (Bruhn 2002, Rust & Kannan 2002, Rowley 2006) during the last decade: It is now possible to provide consumers with Internet applications to do their shopping, to take care of their financial affairs, to administrate their own data or to customize services themselves – on their own and without any support of professional service staff. This way a strong qualitative change of the concept of personal services is under way. On the one hand, Internet-based self-service promises spatiotemporal autonomy for the users. It is available wherever and whenever a person has access to a computer connected to the Internet. On the other hand, e-services are a result of service rationalisation rendered perfect. Already in the early 1980s Berger and Offe identified three strategies for the rationalisation of service work: the externalisation of work steps, the reorganisation of modes of operation, and the introduction of technology (Berger & Offe 1984). While self-service as a matter of reorganisation means the externalisation of work to the customer, e-services as a technology set the rules for consumers to work completely on their own. That way, the rationalisation of the seemingly unrationalisable service sector now has begun.

3 When Service Becomes E-Service

Personal services have always been characterised by the interaction of two persons: the service provider and the customer. They negotiate the purpose as well as the terms and conditions of the service. A service professional who works for an organisation knows all service options. She tries to find out what the customer desires, and offers services that meet these needs. In doing so, she mediates between the interests of the consumer and those of the company. Nerdinger characterised this doublebind-situation as the “triad of service” (Nerdinger 1994: 72).

Building on this, Theiβing described what happens when technology is used in a service encounter, calling it the “pyramid of service” (Theiβing 2007: 113ff). He shows that technology has a strong impact on the provision of services but it remains inaccessible for the consumer: The company’s software is used by the service professionals to accomplish their tasks, e.g. by a clerk in a bank, or by a person selling tickets at a train station. The service professional remains the mediator between the company and its customers. She flexibly deals with customers’ requests, translating them into acceptable input for the application. However, such software not only supports, but also restricts what service professionals can do for their customers. Sometimes it strictly determines their ways of acting, e.g. leading them step-by-step along a defined sequence of transactions. In contrast, the customer himself is seldom allowed to even view what appears on the screen, let alone to interact with the system.

With the provision of e-services, the arrangement of the various constituents within the pyramid of service changes. Instead of the service professional, the e-service application becomes the central interface mediating between the company and the customer (Maaβ & Hecht 2010; see fig. 1). The customer now directly interacts with the system and that way performs tasks that have formerly been done by service professionals like clerks or vendors. Only in cases of trouble she can contact 'a real person' – whenever the system is down, behaves in unexpected ways, or is too hard to handle. The job of service personnel is reduced to a temporary fall-back position.

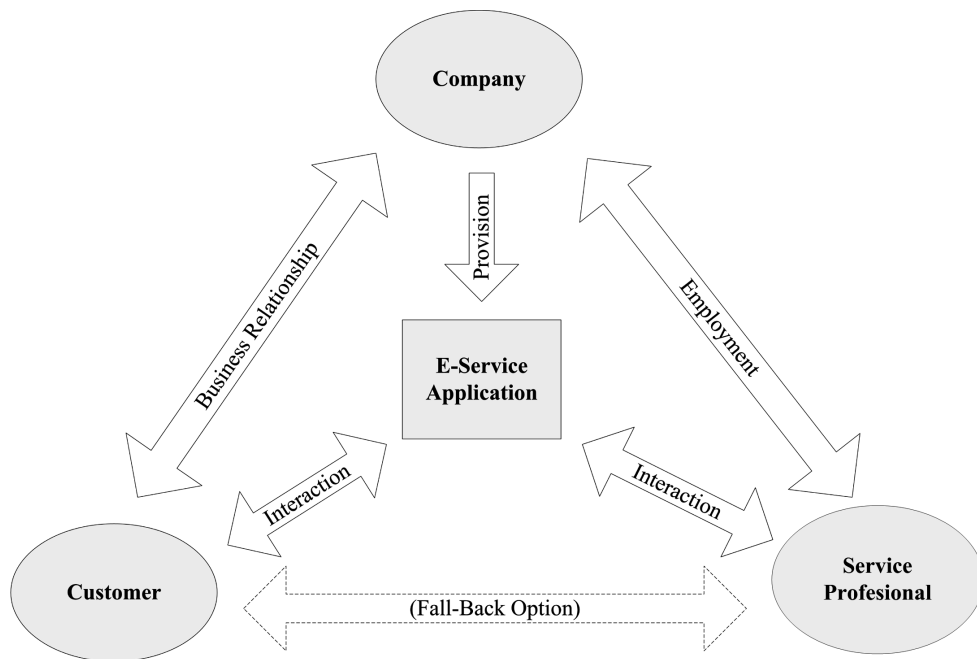


Figure 1: Pyramid of E-Service (adapted from Maaß & Hecht 2010)

Services are no longer co-produced in human interaction but conducted by the consumer alone, led by a software system. This software is designed according to the requirements specified by the service providing organisation. Customers just can choose from given options, there is no room for negotiation. But unlike professionals, they often lack basic competences and expert knowledge in the application area, and they neither have colleagues nor technical or administrative staff to support them (Hecht & Maaß 2009: 47). Customers act on the basis of their prior personal experiences and the information they can elicit from the system. This is why they entirely depend on the quality of the e-service software, their only companion in the wide sea of e-services. In order to make it a good guide, the needs and wishes as well as the skills of potential customers must be anticipated when designing technology for self-service.

4 Adequate Software Support for the ‘Working Customer’

Rieder and Voß have observed the current trend towards self-service and the integration of customers in organisational processes from the perspective of organisational sociology. They conclude that customers performing formerly professional service work might be considered remote workers or ‘working customers’ for the organisation. Customers are integrated into the routines of the company, have to learn to complete their tasks and adapt to certain organisational rules and restrictions (Rieder & Voß 2010). In the case of e-services, software enables them to do so. Therefore, this perspective provides a good starting point for understanding the particular situation of e-service users and for discussing adequate software support for them.

In countries of the EU² the design of employed work with computer workstations is regulated by law, in Germany e.g. by the “Arbeitsschutzgesetz” (labour protection act) and more specifically by the “Bildschirmarbeitsverordnung” (display screen equipment directive). Legislation demands to ensure occupational health and safety by arranging workplaces, work environments, work procedures, and work equipment (hardware and software) in a way that minimises the mental and physical stress for employees. Measures range from good ergonomic design and spatial arrangement of furniture, lighting, screens and devices, to the assignment of versatile and challenging tasks with enough action latitude; they also include task-adequate and usable software design and adequate training of the personnel. These laws were established to ensure that employers take responsibility for the well-being of their employees by providing working conditions that prevent health hazards and foster the workers’ personal and professional development.

Of course, companies have no formal obligation to care for their ‘working customers’. The transfer of such claims seems likely but at the same time feels strange since customers are neither bound to the company nor systematically compensated for their work - except for the advantages mentioned in the so-called “Bequemlichkeitsdiskurs” (convenience discourse; Engemann 2003: 122f.), e.g. the potential access to services anytime and anywhere. Customers also have no legal representation as workers. As their unpaid labour is not acknowledged as such, software for e-services - as a crucial part of their work equipment - may be designed arbitrarily, no matter how much customers struggle with it. In most cases e-services are used by choice and dissatisfied customers can simply turn away. However, if companies want to capitalise on customers’ unpaid labour and cut down on personnel, they have to make sure that people are able and willing to use their e-services. A careful elicitation of the customers’ requirements keeping in mind the principles of good ergonomic design for workers at display units is necessary.

But customers’ ‘conditions of work’ differ in important aspects: As customers alone decide where, when, and by means of what devices they use e-services, speaking in terms of the legal requirements mentioned above, they are accountable for their physical work environment themselves. While interacting with the software, they may have to deal with various changing conditions of space, lighting, or noise, with interruptions and distractions. Companies have no influence on all that; however they are responsible for the main work instrument, the e-service software. Therefore, they should provide software that is adaptable to many different conditions and that supports the given tasks well. The appraisal of customers’ ‘conditions of work’ helps to see the particular requirements for the design of e-service software: It must be prepared to run on many different platforms and should be tolerant towards interruptions and small bandwidth. The software must be tested out on various hardware constellations. It should be easily configurable. Necessary configurations must be well explained and made transparent.

In addition to these basic requirements due to the unpredictable physical working environments, software must be tailored very well to the needs and abilities of consumers in service interactions since there are no professional intermediaries who react flexibly to unexpected customer requirements and translate them into regular system requests. No service personnel and no ‘teammates’ will help and explain whenever a customer feels lost³. The way information is presented must be comprehensive and clear, including good instructions for use and a good guidance for visual attention. As customers do not get any training diverse levels of (missing) customer knowledge and skills – both in regard to the service area and to the

technical system – have to be dealt with when aiming for good usability and pleasant user experience in e-service design. E-Services must be technically self-descriptive and also explain the offered services in terms the average consumer can understand. Additionally, at any point in time users must have an option to connect to professional service persons that will help them on.

5 The Design of E-Services: A Call for Participation

A particular challenge in e-service design is that the future users, their various needs and conditions of use are only vaguely known to designers. In Grudin's (1991) terms e-service design would belong to the category of "product development". This makes a big difference compared to the design of custom-tailored software for organisational settings where users and work settings are known at design time or can be inquired easily. Grudin contends that also in product development designers should make an effort to get into contact with potential users – even if it is hard to find them. Designers should also involve mediators, like e.g. marketing people, who generally work with consumers. Planning e-services, companies that already provide personal services (with or without computer support) already know their service personnel and customers whom they might involve. A start-up company with e-services as its main business model will have to rely on marketing studies to identify potential customers. From the beginning of participatory design research, researchers as well as labour unionists have claimed a worker's right for co-determination in the shaping of their own jobs (Mambrey 1986, Bjerknes & Bratteteig 1995). The perception of users as 'working customers' reveals the necessity of user participation and underlines their right to co-determine their own work conditions - including the design of e-service software. Clearly, mechanisms must be found to access and involve customers in the design process of e-services.

Another aspect to deal with in e-service design is that service interaction is a negotiation process in which the potentially conflicting interests of the customers and the service providing company need to be balanced. To give an example, customers often use websites for collecting information and wish to stay anonymous during their investigations, e.g. when they want to compare the conditions and costs for liability insurance. Commercial suppliers tend to combine their information offer with an elicitation of customer data or they do not provide exactly the information required but – in our example – present information about a reasonably priced combination pack for various insurances instead, tempting the user to buy more than initially planned. Such conflicting interests do also exist in offline interactions, e.g. when sales people push customers for contracts while customers would prefer to find out more about any alternatives before they decide. But in human interaction the customer can dispute with the sales person. Flexible reactions to customer requests are one of the most important ingredients of good service. With the design and provision of e-services, sales strategies and procedures get inscribed into software which then formally defines and restricts the available choices for users. Any negotiation of interests would have to take place much earlier, i.e. during the design process. This argument for participation is also in line with the ideas of participatory design: Researchers from this field proposed to engage end users and other stakeholders in order to allow different perspectives to be shared and discussed. They showed the challenges and benefits of bringing together and cooperating with those groups of people whose work will be affected by software changes (Greenbaum & Kyng 1991, Schuler & Namioka 1993, Bødker et al. 2004).

Besides customers, two other stakeholders are involved in the provision of personal services: the service providing company and its service personnel as characterised by the “triad of service” (see section 3). All three of them interact – although not all stakeholders are actually present and directly in contact to each other. All three parties may pursue different interests and these have to be negotiated in the interaction between service personnel and customers. In a participatory design of e-services, the perspectives of all three parties would have to be combined in order to obtain detailed knowledge about their various needs and wishes.

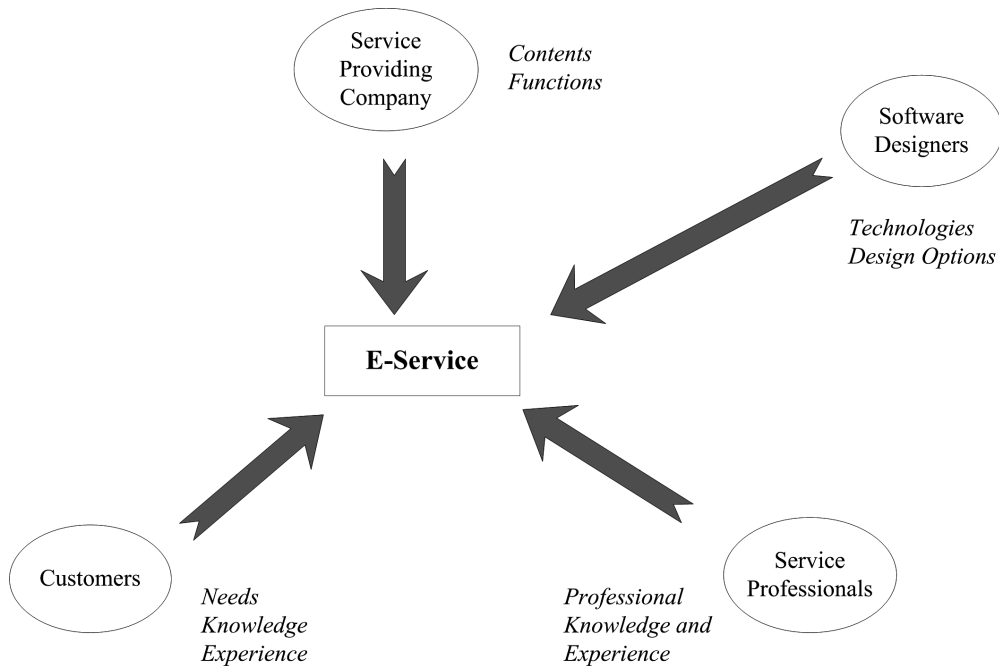


Figure 2: Distributed Know-How For E-Service Design

This would help to voice and negotiate their potentially conflicting interests before any service strategy would be inscribed into the e-service software, and also to make use of their different bodies of knowledge (fig. 2): Companies know what products or services they want to supply online in what varieties and how these should be made accessible. They define what data the e-service system will work with. Customers are experts for their individual needs and for what they expect from a service. They know for what purposes they prefer self-service to a technically mediated or direct interaction with service professionals. They set the spatio-temporal context, they choose devices and software, and they bring their personal experience from past encounters. Professional service personnel are skilled in mediating between customers and company, between demand and supply. From experience, they know customers’ typical needs and wishes, and what makes a satisfactory service process. In particular they know what can be expected and required from users in service interactions, what kinds of explanations and help are needed. Software designers who know about the available technologies and design options have to organise a participatory process with all of them.

6 The Future of E-Service Design

Customers today have little influence on the design of e-services. Only by refusing to use e-services they may protest against the increasing discontinuation of personal services. However they risk economic drawbacks, like higher costs for personal service or exclusion from any services that are solely sold online. A systematic customer inclusion in design would strengthen their position, render their needs more visible and improve design solutions. As a result more people would be able to actually benefit from the promised advantages of individually tailored, “always available” services that follow the current trends toward individualism and autonomy in Western societies. Cooperative design and the resulting good services may help customers to raise their voices and allow consumerism to grow stronger; they may enable customers to interact with each other, to stand up for ethical issues, to be well informed and make good choices when buying online. Service providing companies will benefit from deeper insights into the needs and wishes of their customers, and will be able to offer more adequate, usable and thus more profitable (e-)services.

In our view, a crucial aspect that is missing in e-services today is the personal counseling for customers. Service professionals are able to take on the individual perspective of a customer and then to judge, argument or act from there. Research with respect to mass customisation of services (Piller 2003), consumer decision support (Hansen et al. 2007) and recommender systems (Klahold 2009) might help to compensate in this regard. Most of that research, however, is quite technically oriented and none of it has yet made reference to the concept of service work. Economic studies have found out about people's (un)willingness to accept and use e-services (Meuter et al. 2000, Walker & Johnson 2006). It seems that flexible interaction and friendly consulting are the main reasons for favouring personal services.

Design of e-service software will have to be studied in greater detail. What makes up good service quality in general? Will it be possible to design more flexible e-service interactions? How can e-service systems provide more help to their users? How can they instruct users with regard to the service area as well as to the technical handling of the system? Are there any design rules that apply to e-service systems in particular, like e.g. transparency, anonymity or user control? What are the limits of service automation? We will have to find answers to these questions while keeping in mind the likely clash of interests between e-service companies and their remote workers, and in addition, reconsider how the jobs of the service professionals will be affected by the trend towards self-service. Then we will have a chance to design satisfactory solutions that are in keeping with the idea of a ‘service society’.

Notes

1. A similar, but less extensive concept was introduced by Toffler (1980) with the term “prosumer”.
2. http://europa.eu/legislation_summaries/employment_and_social_policy/health_hygiene_safety_at_work/c11119_en.htm
3. Increasingly, e-service systems include user forums or chats that allow users to communicate with and get help from other users. This can be seen as a first support step, but it also requires even more work of the customers.

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