



## The e-service concept as social interaction through the use of IT systems

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### Abstract

The use of the e-service concept (short for electronic service) in the IT sector reflects fundamental changes during the last two decades in the use context of IT systems. Although the e-service concept has been increasingly important for the IS discipline, researchers have been using different definitions to define the e-service concept. This implies that the subject field of Information Systems has to develop a better understanding of the e-service concept. This paper contributes to this by defining the e-service concept as “Social interaction through the use of IT systems” where the use of IT systems is understood from a social interaction perspective and in society at large, not only within an organizational context.

**Keywords:** E-service, IT-service, social interaction, concept, relationship, use situation.

This paper builds on Göran Hultgren’s Ph. D. dissertation (Hultgren, 2007). Owen Eriksson acted as co-supervisor for the Ph D work.

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## 1 Introduction

The introduction of the Internet into the homes of people during the 90’s was the start of a new IT-based service industry. The Internet made it possible for millions of users to easily access information, software and digital media no matter where it was stored or installed. Before this, these resources were distributed on tape, disk and cd, and installed on the user’s computer in order to be used. The Internet changed all this because of its powerful distribution capacity.

The first to exploit this new distribution capacity were companies that are now huge service providers on the Internet (Oreilly, 2005). Companies such as Google and Yahoo made their software available without licensing and selling them as a commodity product. There is only a massively scalable collection of devices where users can run software developed by these companies, and use information that is made available over the Internet. These companies do not only provide software, they provide information and communication facilities that connect people to each other. Without information, software is useless, and without software, information is un-

manageable (ibid.). One of the defining characteristics of Internet software and information is that it is delivered as a service, not as a commodity product.

The use of the word e-service (or information service) in the IT sector (the IT sector is the branch for the development, management, distribution and use of IT systems) reflects fundamental changes that happened in the last two decades. This implies that it is important to understand the interest for this term and how it is used in the IT sector. Hultgren (2007) claims that the reason for this can be explained by the shift from a traditional intra-organizational use context of IT systems, to an extra-organizational use context.

Traditionally, the use of IT systems has been focused on organizational use of IT-systems; this can be illustrated by a quotation from Frisco (Framework of Information System Concepts), which is an initiative from International Federation for Information Processing (IFIP) to standardize the concepts used in the subject field of information systems (Falkenberg et al., 1998):

*”Information systems exist exclusively within organizations, to support their work, and to fulfill their information and communication requirements. To understand information systems, we therefore need to understand organizations, what they are, how they work, what their components are, and what their structure and behavior is. Thus, we will borrow from organization science. Organizations can be viewed as systems, organizational systems. In this view, information systems are specific sub-systems of organizational systems.”*

This traditional intra-organizational use perspective of IT systems, labeled organizational informatics (Beynon-Davies, 2013), where the user is an employee of the organization that provides the IT service, or the emphasis is on the organizational benefits of using it, is quite different to the e-service use context. The use of the term e-service implies that it is no longer the organizational and employees' use and benefits of the IT system that is in focus, but the use and benefits to the customer, i.e. the user is no longer an employee of the organization that provides the IT service.

This organizational view of IT system use started to change when home computers were connected to the Internet during the 90's (Braa et al., 2000). This made it possible for organizations to make their IT systems available to their customers over the Internet. Today, we can see the convergence of computers, telephones and media with the Internet, and how the IT system is developed to support e.g. transport and travel activities, and the everyday lives of people. Due to this convergence, the focus on the use of IT in offices and factories is not the only context that has to be considered. We need also to focus on the external use of IT in society and in the market (ibid.). Two types of organizations can be identified that have taken advantage of the Internet in this way. The first type used the Internet as a Self Service Technology (SST), i.e. as a way of improving and making their current business more efficient. Self-Service Technologies (SSTs) are technological interfaces allowing customers to produce services independent of involvement of direct service employee (Rowley, 2006). However, instead of taking an interest in new sorts of services, SST focuses on new ways of organizing the operations of already existing services. In contrast, new IT service organizations like Google, Yahoo, eBay and Amazon have created new innovative e-services that did not exist before the Internet era (O'Reilly, 2005). They did not look at the Internet as an SST rationalizing already existing services. They saw the Internet as a new service innovation network connecting millions of customers all over the world.

Although the use of the term e-service has been increasingly important for the IS discipline, researchers have been using different definitions to clarify the concept of e-service. It is not clear what should be considered an e-service or how they differ from traditional services. Furthermore, the explosion of IT uses in society calls into question previous conceptualizations of service and suggests new ones (Barrett and Davidson 2008). In a recent MISQ call for papers (Barett, et al. 2011), these research challenges were addressed:

(1) Traditional views of services are being challenged, particularly the differentiation between products and services. (2) Literature, particularly from the marketing and operations disciplines, has highlighted the need for services to be better theorized. (3) There has been relatively little work in the IS discipline that has contributed to this growing debate.

The intent of this paper is to address these challenges by presenting a definition of the notion of e-service (see also Hultgren and Eriksson, 2005; 2006: Hultgren 2007), and to explore theoretically and analytically what the concept of e-service means from an IT use perspective. It describes the external use of IT systems in relationship to the traditional organizational use of IT systems, and explains the e-service concept from a social interaction and external use perspective. Section 2 describes how traditional services have been defined in the Service Management Theory (SMT) literature, and how the e-service concept has been defined in the SMT and informatics literature. In section 3, a social interaction perspective of IT use is presented. In section 4, the e-service concept is defined, and three criteria that define an e-service are described. Section 5 describes the research approach. In section 6 the e-service concept is exemplified and contrasted to traditional services, and the paper is concluded in section 7 by describing implications for the subject field of information systems.

## 2 The service concept

The International Standardization Organization (ISO 9004-2:1991:4) has defined the service concept as: "Supplier activities at the interface with a customer and the results of all supplier activities to meet customer needs", which is a definition of a traditional service. In this section we will elaborate on how traditional services (services for short) have been defined in the Service Management Theory (SMT) literature, and how the e-service concept has been defined in the SMT and informatics literature.

### 2.1 Service according to Service Marketing Theory (SMT)

In academia, Service Marketing Theory (SMT) (Grönroos, 1983; Lovelock and Gummesson, 2007) or Service Quality (Parasuraman et al., 1985; Zeithaml et al., 2002) is the subject field where the service concept has been defined and discussed during the last four decades. SMT is a subject field that focus on the management of service organizations, service marketing and quality.

Edvardsson et al. (2000:32) define the service concept in general as: "... a chain of (sequential, parallel, overlapping and/or recurrent) value creating activities or events, which form a process. In this process the customer often takes part by performing different elements in interaction with the employees of the service company (other customers or equipment) for the purpose of achieving a particular result."

From the definition it can be concluded that a service consists of a number of value creating activities, which are performed in the social interaction between a cus-

customer and a service provider (the service provider organization). The customer may also interact with other customers or equipment during the service process.

One important aspect stressed in SMT is that the service concept is described as situated social interaction, i.e. the service is produced and delivered within the actual service encounter when the customer physically meets the actors who represent the service provider. This implies that a service is situated in place and time, since the customer and the service provider have to meet and interact. It is the situated interactions between the customer and the quality-generating resources (i.e. employees, physical resources, technology and systems) controlled by the service provider, which are the core of service marketing (Grönroos, 2001). Within SMT, attempts have been made to find defining characteristics that distinguish services from commodity products. In service marketing theory, the purpose has been to find new features that replace the product features of the pre-produced physical product. The obvious difference between the consumption of physical goods is that the customers perceive the process in which they were involved, as well as the outcome of this process (Grönroos, 1982, 2001). The description of the notion of service as situated social interaction is based on the fact that the production and consumption of the service is simultaneous, and that the service is co-produced. Edvardsson (1996:63) describes these characteristics in this way:

1. Services are usually more abstract and immaterial.
2. Services are produced, delivered and consumed simultaneously, i.e. they cannot be stored.
3. Services often involve the customer as a co-producer because the customer contributes with information or performs one or several activities in the interaction with the service provider.
4. Services are heterogeneous, because they are produced in a unique interaction (the service encounter) when individual employees of the service provider company meet individual customers.

However, these characteristics have been criticised (Röstlinger and Goldkuhl, 1999; Lovelock and Gummesson, 2004; Vargo and Lusch 2004, 2008; Barrett and Davidsson, 2008), and some of these criteria do not apply to e-services. For example, the functionality and information of an e-service can be stored, which contradicts characteristic 2, and a banking service on the Internet is not heterogeneous. It performs the service in a highly standardized manner, which contradicts characteristic 4.

This has made a number of scholars start to look for other criteria that are more useful in order to understand the concept of service. The fact that the customer uses resources owned by the service provider has made Lovelock and Gummesson (2004) propose "the non-ownership principle" as a basis for a new understanding of the service concept. Lovelock och Gummesson (2004:34) describe "non-ownership" in this way:

*"We contend that services involve a form of rental or access in which customers obtain benefits by gaining the right to use a physical object, to hire the labour and expertise of personnel, or to obtain access to facilities and networks."*

Hultgren (2007) adopts the principle of non-ownership in order to analyse the service concept. He exemplifies the use of the non-ownership principle for distinguishing between a service and a commodity product by using the activity of washing clothes, and the three scenarios described below.

In Scenario 1, the person makes a request to have the laundry washed, hands over dirty clothes to the personnel of a laundry firm, makes an agreement about when to pick up the clothes, and how much to pay for the clean clothes. The personnel then use the washing machines owned by the firm, and delivers the clean clothes back to the person who then pays the agreed amount. This is obviously a laundry service, and it is meaningful to talk about the person as a customer and the laundry firm as a service provider, because the person hires the labor and expertise of the personnel at the laundry firm. The only thing that the person owns is the clothes, but the clothes are not the service: they are only input to the activities that delivers clean clothes as a result.

In Scenario 2, the person goes to a Laundromat. This is typically called a self-service because the person uses the washing machine that the laundry firm owns. Thus it is meaningful to talk about the person as a customer and the firm as a service provider. The person uses the automatic activities of the machine (the laundromat is used as a Self Service Technology), which he does not own, but which he has a right to use.

In scenario 3, the person washes the clothes at home with his own washing machine. The end result is the same as in scenarios 1 and 2, but this is not a laundry service. It is not meaningful to talk about the person as a customer and the washing machine as a service provider, or the manufacturer of the washing machine as a service provider. The person owns his own washing machine; thus he uses a commodity (product).

The scenarios show that the difference between a commodity product and a service is a matter of differences in the control over the resources used for achieving a particular result. If an actor does not have the resources needed to accomplish the desired outcome, he must interact as a customer with the employees of a service provider, or equipment that the service provider owns, and then it is meaningful to talk about a service.

## 2.2 The e-service concept in the service management and informatics literature

Hultgren (2007) has reviewed how the e-service concept has been used in the SMT literature, and the IT system has foremost been described as a Self-Service Technology (SST), where the customer interacts with technology to produce the e-service. Self-service is defined as a “*service in which there is no direct assistance from or interaction with a human service agent*”. The SMT literature focuses on how single customers use the IT system. Thus the IT system is considered just to be one SST among others, not really focusing on what makes the IT system special compared to other technologies. For example, Sousa and Voss (2012:789) define “*e-services as services produced by customers by interacting with a web site, excluding any interactions with service employees*”. They also claim that there are two important features that differentiate e-services from traditional services: “*First, the nature of service encounters in e-services, notably the absence of human contact, is different from traditional services (Froehle & Roth, 2004). Second, e-services are typically offered as part of a broader multi-channel (MC) service bundle, combining Internet-provided services with those delivered through other channels, such as the phone and physical facilities (Sousa & Voss, 2006).*”

According to Rowley (2006), who conducted a thorough review of the research concerning the role and nature of e-service, neither SMT literature nor informatics literature offer a common agreement on the definition of e-service. Rowland (2006) claims that an e-service is predominately a self-service, whether it is delivered through a web page on a computer, a mobile device, or a kiosk. Self-services require that customers learn to use the resources that are made available to him/her to produce the service. This implies that the customer needs to learn how to navigate through an interface to develop an understanding of the service process. The service provider needs to find ways of making the customer learn to use the interface and co-produce the e-service. Rowley (2006) describes three characteristics of e-services:

- The primary value exchanged between the two parties is information, and our understanding of e-service has to be based on how information is perceived and used.
- An e-service is not constrained by space and time.
- E-services may also promote customer-to-customer relationships in another way compared to traditional services.

However, a problem is that Rowley still considers the service provision as a self-service, which deprives e-services from their inherent social character. It is not hard to see why e-services are considered a self-service technology. For example a Laundromat, a typical SST, has a striking similarity with an IT system. They can both perform activities on their own, i.e. they are autonomous, and the customers can use these autonomous machines by themselves without meeting the service provider face-to-face, and the service provider can transform the service into a self-service by allowing the customers to gain access to these machines. However, there is also a striking difference between a Laundromat and an IT system. The IT system is a machine intended for human communication, and social interaction. The Laundromat is intended for washing clothes. This means that our conception of an e-service should not be that of a self-service.

In the IS literature, the notion of e-service is described in a broader sense, and not only as the use of an SST. Mathiassen and Sørensen (2002) use the term *information services* rather than *self-service* in order to better capture the nature of contemporary IT usage. They characterize four types of information services - computational, adaptive, networking, and collaborative services - to different types of organizational tasks and work contexts.

*Computational service:* These are services that support tasks with low complexity and low uncertainty. These are traditional transaction systems, e.g. web-based e-commerce transactions.

*Adaptive service:* These are services that support tasks with high complexity and low uncertainty. Adaptive services are needed when it is not possible to fully program the process in advance.

*Networking service:* These are services that support tasks with low complexity and high uncertainty. These services support encounters by mediating non-formalized messages. These are email systems, mobile phones, and SMS messaging.

*Collaborative service:* These are services that support tasks with high complexity and high uncertainty. These services support emergent decision-making through mediated relationships. For example, these types of services can support the group of car

designers in negotiating the design as well as recording the decisions made through the design process.

### 2.3 Summarizing the literature review

The literature review shows that in the SMT literature e-services are primarily conceived of as a Self Service Technology (SST). In the informatics literature, e-services are also described as SSTs. However, in the informatics literature there is a broader conception of the e-service concept that describes them as transaction services, adaptive services, networking services and collaborative services. Goldkuhl (2006) is one of few authors that describes public e-services as social action and communication: “A public e-service is, through appropriate information technology, delivered useful messages from governmental agency to citizens, or affordances of communication from citizens to governmental agencies.” In sections 3 and 4 we will describe how e-services could be understood as social interaction through the use of IT systems.

## 3 Social interaction through the use of the it system

In order to describe what is meant by social interaction through the use of IT systems, we will describe the notion of social interaction. We will then describe the IT system and its constituencies, and finally we will show how IT systems use could be described as social interaction.

### 3.1 Social interaction

In order to understand how IT systems could be used for mediating social interaction, we must first explain the notion of social interaction, and how it is related to communication. Human communication is often defined as the transmission of information between people. However, in Speech Act Theory (Austin, 1962; Searle, 1969), communication is also considered as social action. Someone may perform a speech act (a communication act) to obtain instrumental goals (i.e. with a predominantly instrumental orientation). For example, in Scenario 1 (see above) the person hands over dirty clothes to the person at the service desk of the laundry firm, and says “could you please wash these clothes for me”. The customer’s instrumental goal is to get the clothes washed, and that the laundry firm should perform the material act of washing the clothes. Notice that the social interaction includes both the communication act (the request), and the material acts of handing over, washing and delivering the clothes. It is also important to emphasize that the communication must not necessarily be performed by explicit speech acts, e.g. it may be enough for the customer to put the dirty laundry on the desk to communicate his request. According to Searle (1969) and Habermas (1979, 1984) the communication act should be analyzed based on the speaker’s (sender’s) communicative (social) orientation. Searle maintains that the speaker’s communicative intent (i.e. social goal) is to make the listener (the receiver) understand what he is trying to do by a communication act. This means that the communication act is considered to be successful when the listener has understood the communication act. The reason why communication should be analysed primarily from the social orientation is that language is primarily a means for creating understanding between human actors. This can be illustrated by the customer’s request. The customer does not wash the clothes with his communication act, he actually makes a request to cooperate, which is an important difference. This implies that the customer,

with his communication act, must create an understanding of what he wants, and to motivate the person at the service desk to cooperate. In this case, make the person at the service desk understand that he wants the clothes washed, and make him believe that he will pay for the service on the day of delivery. Successful communication implies that the receiver must both comprehend, and accept, the speech act as trustworthy, i.e. the sender and receiver must agree on the communication act. This implies that they create a mutual agreement that is based on the information that is exchanged and that a social relationship is created based on commitments and expectations. Habermas (1979) has used speech-act theory to analyze the importance of human communication as a co-ordinating mechanism for social interaction. Habermas claims that actors must interpret and act in a situation in order to cooperate, and that subsequent actions that are performed depend on the way they have interpreted the situation. It is this analysis that Habermas (1984) carries through in the theory of communicative action, where social interaction is defined as a situation where two or more social actors are coordinating their material acts and communication acts to achieve a particular result.

This means that human communication is a prerequisite and a part of social interaction but is not the same as social interaction. Social interaction can consist of only communication acts, but often involves interlinked material actions. This also implies that it is the communication part of the social interaction that could be mediated by IT systems. In this case, it is the request for and payment of the laundry service that could be mediated by an IT system, rather than the physical actions of handing over, washing and delivering the clothes.

### 3.2 The IT system and its constituents

In order to understand how an IT system could be used for communication and social interaction (see section 3.3), it is important to first describe the constituents of an IT system.

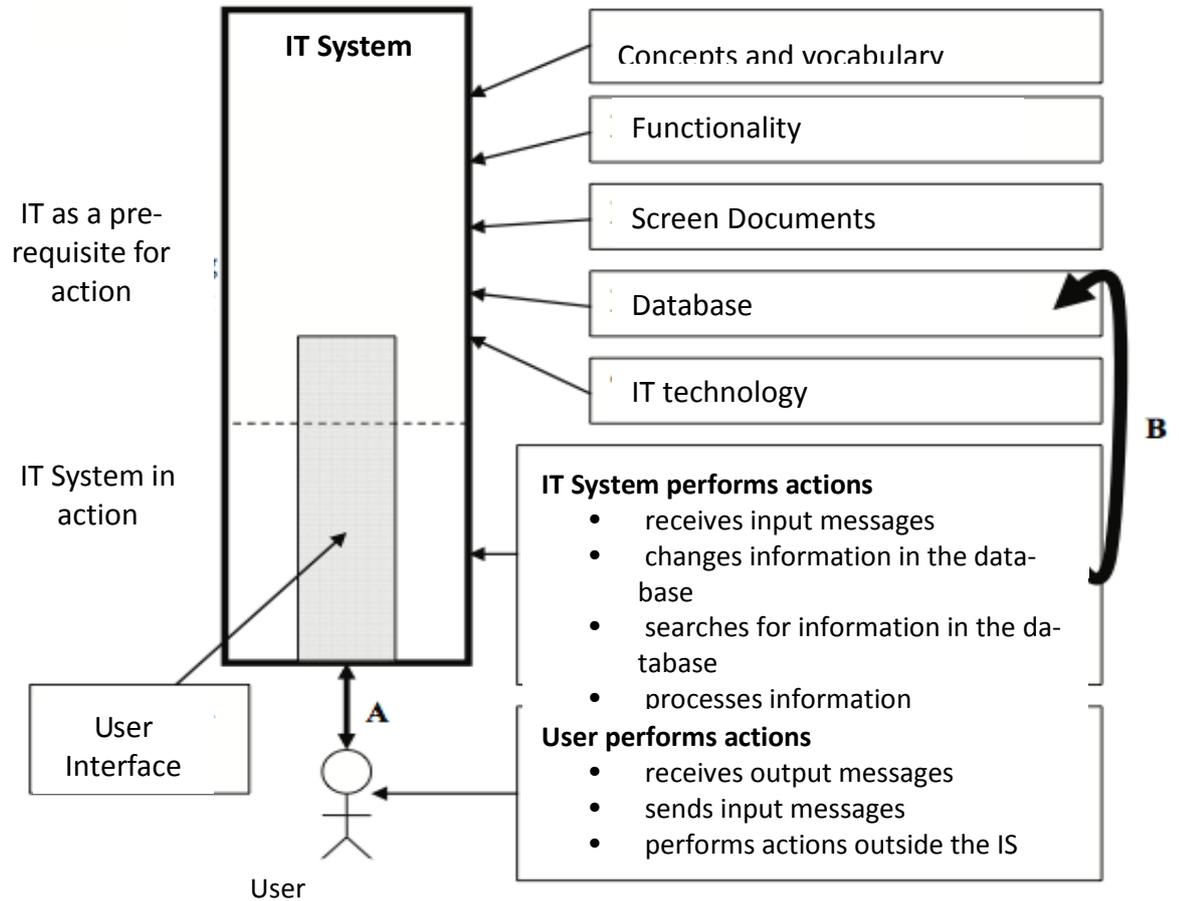
Hultgren (2007) describes the notion of an IT system at two levels (Figure 1): the activity and prerequisite levels. The prerequisite level is constituted by the hardware, software and stored information of the IT system. The activity level represents the IT system in use.

*The prerequisite level (The IT system as a prerequisite for action).* This level includes the basic prerequisites for the user to send and receive messages through the IT system. These prerequisites are constituted by:

- a vocabulary;
- application software (functionality and screen documents);
- a database;
- IT infrastructure, technical software and hardware.

The vocabulary of the IT system is the communication language that is supported by the IT system. The application software and the database define the vocabulary of the IT system. The software provides the functionality and the screen documents that are presented to the user. The database contains the information structures (the database schema) and stored information. The vocabulary, application software and the database are based on social rules; some of these rules are implemented in the IT system, and some of these rules regulate the use of the IT system by providing guidelines and instructions to the user. The IT infrastructure consists of computers, cables,

devices, operating and telecommunication software and database management systems.



**Fig 1.** IT system and its constituents

*The activity level (The IT system in action).* This is the level where the actions of the user and IT system are executed. The actions that the IT system can execute automatically are:

- receive input messages;
- change the data in the database;
- search for data in the database;
- process data;
- send output messages.

The user can execute these generic actions:

- create input messages, which includes an interpretation act;
- receive output messages, which includes an interpretation act;
- perform an external act outside the IT system, which is based on output messages provided by the IT system.

The arrow A symbolizes the actual interaction between the IT-system and the user. The B arrow symbolizes the change of the database that is performed at the activity level, and it dynamically changes the prerequisite level (see below). The activity level is focused on the IT system provided as a service.

*The user interface.* The visible parts of the IT system constitute the user interface and it is through this interface that the user can interact with the system and communicate with other users.

### 3.3 Social interaction through the use of IT systems

Based on the notion of social interaction presented in section 3.3, Hultgren (2007) claims that the use of an IT system can be viewed as a medium or agent for communication and social interaction. This in line with the IS Actability Theory (ISAT) (confer Ågerfalk, 2003; Ågerfalk and Eriksson, 2006, Goldkuhl, 2006). In ISAT, IT systems are considered to be action systems used in a social action context. In that role, the IT system can be considered as a passive media (channel) that only transports the input message or digital streams/objects unchanged from the sender to the receiver, or as an agent that processes the information in a more independent way, creating new messages based on data/information that is provided as input messages, or stored in a database. This is illustrated in Fig. 2 below.

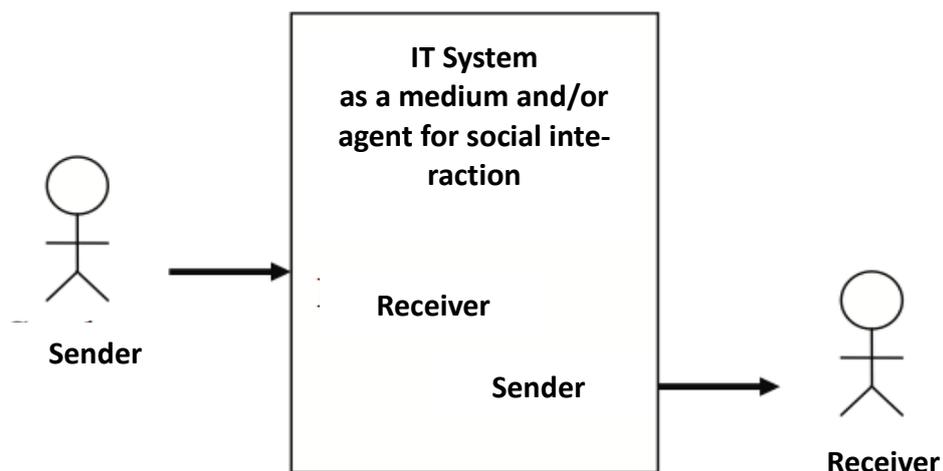


Figure 2. Social interaction through the use of IT system

The figure above shows that there is a human sender that provides an input message that the IT system receives, and there is a human receiver that receives an output message that the IT system provides. For example, if we imagine that the request for the laundry service is performed through an IT system, the IT system could play a passive role as a media (a) or as an agent (b).

- a) The customer (sender) sends an e-mail to the laundry firm (receiver) asking them if and when they could wash his clothes and how much he should pay, and the personnel (sender) write an answer back to the customer (receiver). In this case the system acts as passive media.

- b) The laundry firm has a website where the customer (sender) could fill in his request on a screen document submit it. It would then be automatically and immediately received by the website, which processes it, and directly (sends) an answer back on to the screen document to the customer (receiver), providing an offer to the customer.

In both cases the communication part of the social interaction (the request and the answer) takes place through the system, which means that the human sender and receiver do not have to physically meet, because the IT system can mediate the social interaction. This means that this form of social interaction is quite different from physical face-to-face interaction. However, it is important to notice that the communication through the system is still social interaction, because social relationships, including commitments and social expectations, are created and maintained. For example, the customer will expect that when he has received the answer from the IT system, he can leave his laundry at 12.00 next Monday. He expects that someone of the personnel at the laundry firm will be there to receive his laundry, and if the IT-system has communicated that the price is €30, the customer will expect that this is what he should pay for the laundry service.

Figure 2 above depicts a single directed interaction towards the IT system, either the human sender sends an input message to the system, or the system sends an output message to the human receiver. However, when a human actor interacts with an IT system as a user, the communication between the user and the IT system is typically double directed, as described in (a) and (b) above (see the Fig. 1 arrow A, section 3.2).

According to Hultgren (2007), the IT system is used at the activity level, and it could be used in three different typical use situations (see case b above):

1. Interactive use situation: in these types of use situations, the user creates input messages or receives output messages from the IT system. For example when the customer registers his request through the website.
2. Automatic use situation: in this use situation the user does not have to do anything. When the laundry firm receives, stores and answers the request this is an automatic use situation for the employees of the laundry firm, because they do not have to do anything to provide the answer to the customer.
3. External use situation: in these types of use situations, the user acts outside the IT system based on output messages that he has received from the IT system. For example, based on the answer from the IT system, the customer leaves his laundry at 12.00 next Monday at the laundry firm.

#### 4 The notion of e-service

Based on the discussion in section 3.3 and Hultgren (2007), the notion of e-service is described as *social interaction between a service provider and a customer, and/or between customers, using the IT-system of the service provider with the purpose of providing a result for the customer*. It is also important to emphasize that the result of an e-service is the exchange of information, digital objects and commitments that creates social expectations. This definition is based on three basic criteria that could be used in order to decide if the IT use should be considered as an e-service:

1. The customer must use the IT system of the service provider.
2. There exists a customer and service provider relationship, and also in many cases an customer to customer relationship.
3. The social interaction between the service provider and the customers should take place through the IT system

4.1 There exists a customer to service provider relationship, and also in many cases a customer to customer relationship

Two basic relationships can be recognized in an e-service use context (figure 4):

1. the service provider to customer relationship;
2. the customer to customer relationship.

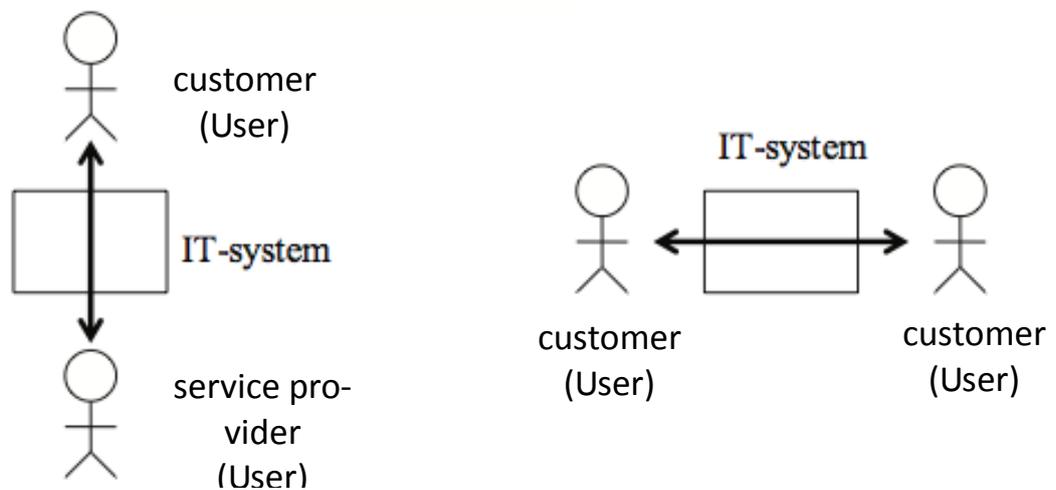


Fig 3. The basic relationships

The first relationship is compulsory and you can find this relationship in every e-service because there has to be someone that is responsible for the e-service provided. Furthermore, many services also include the customer to customer relationships, and in many e-services it is the ability of the service provider to arrange for making these types of social relationships possible that makes the e-service such a success.

According to Hultgren (2007), it is the social interaction and these relationships that are of interest to analyze from an e-service perspective. The figure above also shows that both the service provider and the customers can be users of the IT system and can contribute to the social interaction and the content of the e-service.

However, to be an customer you do not necessarily have to pay for the e-service. The e-service should be beneficial to you; the emphasis is the focus on the customer benefits. A customer could be a person or an organization.

Some scholars that rely on SMT service quality models (Parasuraman and Grewal, 2000; Bauer et al., 2005), claim that e-services do not support relationship building in the same way as traditional services because of the absence of face-to-face interaction, which is seen as central to relationship development (Zeithaml et al., 2000).

However, it is important to recognize that these relationships are social in their character, even though they are created with the help of technology, because they are created and maintained by the exchange of information and commitments governed by social rules which create social expectations. The idea of regarding e-services only as self-services, deprives the e-services of their inherent social character. It is important to see the difference between an IT system and self-service technologies such as washing and vending machines. The main results of these machines are delivered goods or processed goods, not the exchange of messages, digital objects or social commitments, thus e-services are not the same as an SST.

#### 4.2 The customer must use the it system of the service provider

This is the principle of non-ownership. If the customer owns the whole IT system both at the prerequisite and activity level it is not meaningful to talk about an e-service, because then the customer has purchased a commodity product. For example, if you buy a computer and a license of Microsoft Software this is not an e-service. The service provider has to own or control some part of the IT system. Furthermore, in the case of e-services, the service provider must own, and control some part of the activity level of the IT system, because the service provider must be able to provide social interaction through the IT system. This activity level consists of the actions that the IT system automatically performs, the actions that the employees of the service providers and customers perform through the IT system, and the information stored in the database.

#### 4.3 The social interaction between the service provider and the customers should take place through the IT system

This means that the IT system should be designed in such a way that the social interaction (the meeting) between service provider and the customers can take place through the IT system. This also implies that the e-service becomes less dependent on place and time compared to traditional services, which often require a physical meeting. However, this does not mean that the service provider and customer never meet. For example, when an customer meets a bank clerk that introduces him/her to a banking e-service. Still, the e-service should be designed in such a way that the customer can perform all the social interaction through the IT system.

## 5 Research approach

The research approach is characterised as practice research, and the concept of e-service presented in the paper is a part of the practical theory of e-services. A practical theory is aimed to be useful in investigating and managing some phenomenon. The e-service concept presented in this paper has been developed using a practice research approach because our aim was to understand and develop an understanding of the e-service concept. We wanted to understand why people had started to use the term service in the IT sector, and we wanted to define and characterize the e-service concept. The e-service research has also applied the epistemological strategy of multi-grounding. Multi-grounding means a combination of empirical, theoretical and internal grounding. How the research principles of practice research, practical theory and multi-grounding have been applied in the research are fully elaborated in Hultgren and Goldkuhl (2013) and Hultgren (2007). The e-service concept presented

in the paper was developed during a four-year period between 2002-2006 and consisted of two main phases: phase A between 2002-2005 and phase B between 2005-2006.

During phase A, 35 existing websites on the Internet and mobile applications were analyzed and the e-service concept was continuously developed. We started out with the traditional view of analyzing e-services as an SST, only focusing on the service provider to customer relationship. However, after about a year we realized that the relationship between the service provider and the customer must be understood from a social interaction perspective, and that we had to include the customer to customer relationship in order to fully understand the e-service concept. After three years, the social interaction perspective was developed and the last year (phase B) was devoted to testing the usefulness of the perspective. During this phase, 60 different e-services were systematically analysed. The e-services were selected in order to get a variety in relationships, use situations, complexity and the technology used. We taught students and practitioners to analyze the e-services using this perspective, and based on that knowledge, they analyzed the e-services.

After phase B, we did not discover any new interesting characteristics and we felt that the concept that we had developed had matured. The last version of the practical theory has also been tested and used in eight investigations of existing e-services by the principal researcher. In the empirical studies empirical triangulation has been used. There have been three *types of inquiries*. Analysis of existing e-services own studies by the principal investigator, students and practitioners. The empirical studies was theoretically informed using Communicative Action Theory, Service Marketing (SMT) and the IS Actability Theory (ISAT) (see Hultgren and Eriksson, 2013 for a more elaborate description of these theories).

## 6 Exemplifying the social interaction perspective of e-services

In order to illustrate the notion of e-service and the criteria described above, we will use an existing e-service on the Internet “Offerta.se”. The example is chosen because it illustrates the difference between (a) e-services and traditional services, and (b) the difference between organizational informatics, and the new external perspective of IT system use. We consider traditional service providers to be service providers that provide their service by performing material actions and/or provide the service in face-to-face interaction. These are e.g. organizations that provide laundry services, moving services, repair services and so on.

Offerta.se is the name of an e-service where traditional service customers and service providers meet. The social interaction that takes place is described below:

1. The customer of a traditional service provides a message that describes a request for a traditional service that that he/she wants to be performed.
2. An e-mail is sent to the service customer that has to be acknowledged.
3. The request is stored in the database and matched with the profile of approximately 17 000 traditional service providers.
4. The request is distributed to at most 6 traditional service providers
5. The traditional service provider can contact the service customer by e-mail or telephone and provide an offer.

## 6.1 Analysing the Offerta.se service

We will analyze the e-service using the three basic criteria described in section 4 above. In order to clearly show the difference between the e-service and the traditional services that are mediated with the help of the IT system we will use the term "e-customer" and "e-service provider" in the e-service relationship and "service customer" and "service provider" in the traditional service relationship.

### 6.1.1 There exists an e-customer and e-service provider relationship, and also in many cases an e-customer to e-customer relationship

There are three important actor roles that have to be considered: the (traditional) service customer, the (traditional) service provider, which both are e-service customers, and the e-service provider. The social interaction performed through the IT system between these actors creates and maintain three basic social relationships. (Fig. 4):

1. a relationship between the e-service provider and the service provider, i.e. an e-service provider to e-customer relationship;
2. a relationship between the e-service provider and the service customer, i.e. another e-service provider to e-customer relationship;
3. a relationship between the service provider and service customer, i.e. an e-customer to e-customer relationship.

These relationships are governed by a number of social rules; some of these rules are implemented in the application software, and are followed when the actors uses the functionality of the IT system. Other rules are communicated by text on the website.

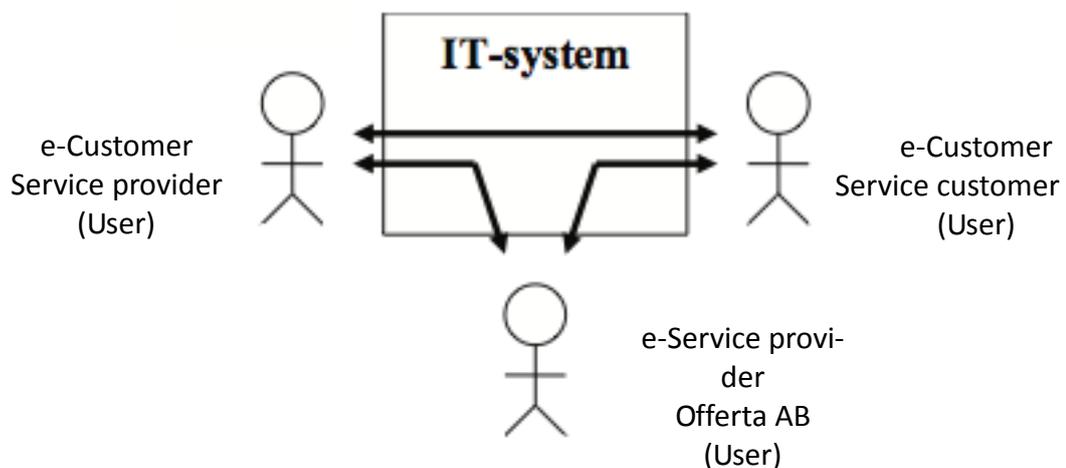


Fig 4. The relationships at Offerta.se

### The e-service provider to service provider relationship, an e-service provider to e-customer relationship

In the relationship between the e-service provider and service provider, the service provider commits himself to pay taxes. This commitment will protect the e-service provider from the inter-mediation of illegal labor. The service provider must also commit himself or herself to act sincerely and professionally towards the service cus-

tomers. The e-service provider stipulates that they will block service providers that do not comply with these rules. They also claim that they have the right to check if the service provider has a record of non-payment. The service provider expects that it is possible to get in contact with service customers with the help of the e-service, and they commit themselves to pay for the e-service if they answer a request from a service customer. The fee is dependent on size of the offer provided to the service customer.

### **The e-service provider to service customer relationship, an e-service provider to e-customer relationship**

The relationship between the e-service provider and the service customer is based on the e-service provider's commitment that only appropriate and sincere service providers are contacted. The relationship is also based on the commitment that the e-service is easy to use and free of charge. The relationship is also based on the expectation that the service customer has a good chance to get in contact with a service provider, since the website tells us that there are over 17 000 service providers that are "waiting to give the service customer a helping hand". However, there is a commitment made from the e-service provider to only contact at most six service providers for each request. The service customer is not committed to the service provider that makes contact with him/her. However, the service customer expects to behave in a sincere way. They should consider that the service providers put effort and money in their offers, and that the e-service provider expects that the service customer will give feedback to the offers, even if they do not buy the service.

### **The service provider to service customer relationship an e-customer to e-customer relationship**

The relationship between the service customer and the service provider is important because the real value of the e-service is that it is a meeting place for the e-customers. The social rules state that the traditional service provider can contact the service customer by e-mail or telephone. However, how the service customer and service provider should interact as a buyer or a seller in the business transaction is not regulated or supported by the e-service, and is nothing that the e-service provider takes any responsibility for.

### **6.1.2 The e-customer must use the IT system of the e-service provider**

The e-customers, i.e. the service providers and service customers of traditional services use the IT system that is owned by the e-service provider Offerta AB. In this case the e-service provider own both the application software and the information in the database, and is in control of the social interaction that is performed through the IT system.

### 6.1.3 The social interaction between the e-service provider and the e-customers should take place through the IT system

The e-service is designed in such a way that the actions that are necessary to fulfill the result of the e-service are accomplished by the use of the IT system. The e-service concept means that the aim of the e-service is only to establish a contact between service providers and customers.

### 6.1.4 Summary

The Offerta.se example shows that in order to fully understand the power of e-service innovation, we have to analyze the e-customer to e-customer relationship. The idea with their e-service is not to rationalize traditional services; the idea is to create a meeting place for traditional service customers and service providers on the Internet. Offerta.se is the fastest growing meeting place for traditional service providers and service customers. Today, they mediate approximately 60 000 requests each year.

## 7 Implications

Based on the framework presented by Hultgren (2007), it can be maintained that the e-service concept has a number of important implications for the subject field of Information Systems.

We claim e-services should be understood as a new social interaction, as a means for building social relationships in an extra-organizational context. As a consequence, the profitability model of new innovative e-services is focused more on revenue expansion than on cost reduction, and those revenues come from arranging meeting places for social interaction on the Internet, where both the e-service providers and e-customers contribute to the service experience, rather than just replacing people with automated systems in already existing business processes. Looking at the use of IT systems from such a perspective creates opportunities for developing new innovative services that did not, and could not, exist before the Internet era.

An e-service theory in the IT field should be based on a theory of "IT system use" focused on how these systems change and create new ways of performing social interaction in society. The development of e-services that has evolved in the IT sector during the last 15 years is based on something new, and must be understood, analyzed and further developed based on a deep understanding of the IT system as a technical, social, institutional, commercial and networked phenomenon.

This implies that there is a need for new theories that focus on society at large, from a social interaction and interlinked networks perspective, and not only from an organizations and systems perspective. For example, Kelly (1997) introduced the notion of the network economy for a society that connects human beings and objects with the help of computers. Kelly (1998) writes "*This new economy has three distinguishing characteristics: It is global. It favors intangible things—ideas, information, and relationships. And it is intensely interlinked. These three attributes produce a new type of marketplace and society, one that is rooted in ubiquitous electronic networks*". Kelly also explains that in the end, this is all about communication. Kelly writes "*Why is the business hero of this moment so much more important than its recent predecessors? Because communication—which in the end is what the digital*

*technology and media are all about—is not just a sector of the economy. Communication is the economy.”*

It is important to understand that it is only natural for a discipline such as Information Systems (Informatics), bridging technology and social science, to import theories from other disciplines. It is of interest to notice that social science theories like SMT look at e-services primarily as technical phenomena i. e. as a self-service technology (SST) or technical channel for the mediation of services. There is also a new academic discipline Service Science emerging (The New Discipline of Services Science, 2005), which has a more technically oriented view of the service concept than SMT. The aim with this discipline is to bring together computer science, operations research, industrial engineering, management sciences, and social and legal sciences, in order to develop the skills required for a services-led economy. In this line of research, Cardoso et al. (2009:18) e.g. define an e-service as “*a collection of network-resident software services accessible through standardized protocols, whose functionality can be automatically discovered and integrated into applications or composed to form more complex services*”. This is a different conception of e-service compared to SMT, yet it is still a very technical definition of the e-service concept. This shows that there is an important task that remains for the field of Information Systems, and that is the task of developing a socio-technical understanding of society that can be exported to the rest of the social and technical sciences. This implies that the subject field of Information Systems has to rethink social science and technology based on a deep understanding of the IT artifact both as technical and social phenomena. This paper contributes to this by defining the e-service concept as “Social interaction through the use of IT systems” in society at large, not only within an organizational context.

## References

- Ågerfalk, P. (2003) *Information Systems Actability: Understanding Information Technology as a Tool for Business Action and Communication*. Doctoral thesis, IDA, Linköpings Universitet
- Ågerfalk, P. J., Eriksson, O. (2006) Socio-Instrumental Usability: IT Is All About Social Action. *Journal of Information Technology*, 21(1), 24-39
- Austin, J.L. (1962) *How to do Things with Words*, Oxford: Oxford University Press
- Barrett M., Davidson E. (2008) Exploring the Diversity of Service Worlds in the Service Economy. *Information Technology in the Service Economy: Challenges and Possibilities for the 21st Century*, M. Barrett, E. Davidson, C. Middleton, and J. DeGross (eds.), Boston: Springer, pp. 1-10.
- Barrett M., Davidson E., Prabhu J., Vargo S. L. (2010) *Call for Papers MISQ Special Issue on Service Innovation in the Digital Age*
- Beynon-Davies P. (2013) *Business Information Systems, Second edition*, Palgrave Macmillan, ISBN: 978-1-13726580-7
- Blomberg (2013) *The New Discipline of Services Science*, Retrieved from <http://www.businessweek.com/stories/2005-01-20/the-new-discipline-of-services-science>
- Braa, K., Sørensen, C. och Dahlbom, B. (2000) Changes: From big calculator to global network, In Braa, K., Sorensen, C., Dahlbom, B. (Eds), *Planet Internet*, Lund: Studentlitteratur.

- Checkland, P. (1981) *Systems Thinking, Systems Practice*, John Wiley & Sons.
- Cardoso, J., Voigt, K., Winkler, M. (2009) Service engineering for the internet of services. *Enterprise Information Systems*, 15–27.
- Edvardsson, B. (1996) *Kvalitet och tjänsteutveckling*, In Swedish, Lund: Studentlitteratur.
- Edvardsson, B., Gustafsson, A., Johnson, M. D., Sandén, B. (2000) *New Service Development and Innovation in the New Economy*. Lund: Studentlitteratur
- Falkenberg, E. D., Hesse W., Lindgren P., Nilsson B. J., Oei H. J. L., Rolland C., Stamper R. K., Van Assche F. J. M., Verrijn-Stuart A. A., Voss K. (1998), *FRISCO- a Framework for Information System Concepts*.
- Froehle, C., Roth, A. (2004) New measurement scales for evaluating perceptions of the technology-mediated customer service experience, *Journal of Operations Management*, 22(1): 1–21. [CrossRef], [Web of Science @]OpenURL University of Uppsala
- Goldkuhl, G. (2006) What does it Mean to Serve the Citizen? Towards a Practical Theory on Public e-services founded in Socio-Instrumental Pragmatism, *The International Workshop on E-services in Public Administration (WESPA)*, 31 October 2006, Borås.
- Grönroos, C. (1982) *Strategic Management and Marketing in the Service Sector*, Chartwell-Bratt (published in the USA in 1983 by the Marketing Science Institute), London, UK.
- Gummesson, E., Lusch, R. F., Vargo, S. L. (2010) Transitioning from service management to service-dominant logic: Observations and recommendations, *International Journal of Quality and Service Sciences*, 2(1), 8–22. doi:10.1108/17566691011026577
- Habermas, J., 1976, What is Universal Pragmatics?, In M. Cooke (Ed., 1998) *On the Pragmatics of Communication*, Cambridge, USA: Massachusetts Institute of Technology
- Habermas, J. (1984) *The Theory of Communicative Action*. Volume One. Reason and the Rationalization of Society. Boston: Beacon Press.
- Hultgren G. (2007) *eTjänster som social interaktion via användning av IT-system : en praktisk teori*, Linköping Studies in Information Science, Linköpings univ, Institutionen för ekonomisk och industriell utveckling
- Hultgren G., Eriksson O (2005) The concept of e-service from a social interaction perspective, In Ågerfalk et. al. (Eds.) *Proceedings of the Action in Language, Organisations and Information Systems*, Limerick, Ireland, pp. 65-8
- Hultgren G., Eriksson O. (2006) The User Interface as a Supplier of Intertwined e-services, In: Nilsson A.G., Gustas R., Wojtkowski W., Wojtkowski G. W., Wrycza S., Zupancic J. (Eds.) *Advances in Information Systems Development - Bridging the Gap Between Academia and Practice Karlstad*, Vol 2, Springer , ISBN 978-0387-30834-0, pp. 541-552
- Hultgren and Eriksson (2013) The Concept of e-service from a Social Interaction Perspective, *Systems Signs and Actions, Systems, Signs & Actions Vol. 7 (2)*, pp 121-141
- Hultgren G, Goldkuhl G (2013) How to research e-services as social interaction: Multi grounding practice research aiming for practical theory, *Systems, Signs & Actions Vol. 7(2)*, pp 104-120
- ISO 9004-2:1991 *Quality Management and Quality Systems Element – Part 2: Guidelines for Services*, International Standardization Organization (ISO).
- Kelly, K. (1997) New Rules for the New Economy, *Wired*, 5(9)

- Lovelock, C., Gummesson, E. (2004) Wither Services Marketing? In Search for a New Paradigm and Fresh Perspectives, *Journal of Service Research*, Vol 7(1), August 2004, pp20-41
- Mathiassen, L., Sørensen C. (2002) A Task-Based Theory of Information Services, *Information Services Research Seminar in Scandinavia (IRIS' 25)*, Copenhagen Business School, Denmark
- O'Reilly (2005) *What Is Web 2.0 Design Patterns and Business Models for the Next Generation of Software*, [WWW document] <http://oreilly.com/web2/archive/what-is-web-20.html> (accessed 6 Aug 2011)
- Parasuraman, A., Zeithaml V., Berry L. (1985) A conceptual model of service quality and its implications for future research, *Journal of Marketing*, Vol 49, pp 41-50.
- Rowely, J. (2006) An Analysis of the e-service Literature: Towards a Research Agenda, *Internet Research*, Vol. 16, No. 3, 2006, pp 339-359
- Röstlinger, A, Goldkuhl, G. (1999) *Produktbegreppet - en praktikteoretisk innebördsbestämning*, Working paper 99:07, CMTO, Linköpings Universitet.
- Sousa, R., Voss, C. (2006) Service quality in multi-channel services employing virtual channels, *Journal of Service Research*, 8(4): 356–371. [CrossRef], [Web of Science ®]OpenURL University of Uppsala
- Sousa, R., Voss, C. (2012) The impacts of e-service quality on customer behaviour in multi-channel e-services. *Total Quality Management & Business Excellence*, 23(7-8), 789–806. doi:10.1080/14783363.2012.661139
- Sysiac (2011) Call for papers - Special Issue on E-services as social interaction, *Systems, Signs and Actions*, <http://www.sysiac.org/uploads/CfpE-servicesSysiac.pdf>
- Truong H. L., Dustdar S. (2009) On Analyzing and Specifying Concerns for Data as a Service, In: *Asia-Pacific Services Computing Conference, APSCC 2009*, December 7-11, 2009, Singapore, IEEE (2009)
- Vargo, S.L., Lusch, R.F. (2004). The Four Service Marketing Myths – Remnants of a Goods-Based, Manufacturing Model, *Journal of Service Research*, 6 (May), 324-35.
- Vargo, S. L., Lusch, R. E. 2008. Service-Dominant Logic: Continuing the Evolution, *Journal of the Academy of Marketing Science*, (36:1), pp. 1-10.
- Searle, J.R. (1969) *Speech Acts - an Essay in the Philosophy of Language*. London: Cambridge University Press.
- Zeithaml, V. A., Parasuraman A., Malhotra A. (2002) Service Quality Delivery Through Web Sites: A Critical Review of Extant Knowledge, *Journal of the Academy of Marketing Science*, 30 (4), 362–75.

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Göran Hultgren (1960 – 2009) was a Senior Lecturer of Information Systems in information systems at Dalarna University Sweden. In 2007 he presented his PhD dissertation in Swedish where he presented his practical theory of e-service, but he did not write so many papers in English on this subject. His research interest was in theories and methods for organizational development in network settings supported by inter-organizational information systems and e-services. He also contributed a lot to the research in informatics in the tourism- and travel- industry, a business that has changed considerably due to the emergence of the Internet and e-services. One of the unique contributions of his research was the way he worked together with the students, and how skilful he was to use his research in education. The practical theory on e-services is a role model for this. The theory was developed in close interaction with the students, and the thesis is used in a number of university courses. Due to his talent for teaching, and his ability to combine research and education he was an excellent scholar. His emphatic and warm personality, a sharp analytical mind, combined with a practical efficiency of getting things done made him a person with a unique set of talents, and he always used them to help other people. He was a friend you always could depend upon. He is no longer here among us, but his memory, ideas and work will remain and always inspire us.

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