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Improving citizens' ability to find, understand and use e-services: Communicating the social interaction dimension

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Abstract

This paper focuses on the ability to communicate public e-Services, as a part of e-Service development. The purpose is to elaborate on the concept “communicability”, and to define elements and criteria useful in the evaluation and improvement of public e-Services. In terms of public e-Services, communication takes place in a context based on an understanding and relation between the public sector and the citizens using the provider’s e-Service solution. Public sectors are increasing their e-Service offers, making communicating e-Services an important part of the service delivery. The citizens’ ability to find, understand, and use the service is a return on investment. This paper combines a business process and a social interaction approach to e-Services. The empirical grounding is a Swedish municipality case study with a pilot evaluation, interviews with developers, and an eye tracking usability test on e-Services with citizens partaking in a university course. The research contributions include a first version of a defined concept of communicability in the e-Service context together with a conceptual basis for evaluation purposes. Findings can be used as a basis for developing an evaluation tool and a handbook to improve communicability in public e-Service solutions.

Keywords: e-Services, e-Service context, social interaction dimension, communicate, communicability

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1 Introduction

Local, national, and transnational initiatives, comprised of public sectors, governments, and agencies provide public e-Services for customers with the aim of improving quality of life and enabling participation in the democratic process (Karlstad, 2008; Swedish Government, 2011; European Commission, 2010; 2011). The increasing availability of e-Services is intended to offer flexible, valuable, effective, and collaborative services to customers (e.g. citizens, companies, associations, visitors or agencies). However, it is difficult to find reports on citizens’ views of how well the public sector’s intentions have been achieved. Reports on the digital divide (Sipior et al. 2011) and gaps between suppliers’ solutions and different stakeholders needs and uses (Lindgren, 2013) indicate barriers to e-Service success. Additionally, we know

that trust in e-Services is fragile; if the e-Service is not working as intended or expected to by the provider, the user will not use the e-Service a second time (Albinsson et al. 2006). The user must for a start find the service, understand how to use it, and feel the value-added idea of using an e-Service as their channel of choice in communicating with the government. Accordingly, the e-Service needs to support and enable users with actions and results in the digital communication (Goldkuhl, 2007; Cronholm, 2010). E-Services provide, "...the simplified handling of information, communication and transaction processes for providing an administrative service through the use of information and communication technologies within and between authorities, and between authorities and private individuals or companies" (Becker et al. 2012:21).

The intention of the Swedish Government to provide a digital arena for everyone (Swedish Government, 2011:12) is indeed important for democracy but also for the possibilities to improve daily life for citizens as well as efficiency for employees and organisations. In Albinsson et al. (2006), the evaluation of 335 e-Services showed an internal focus as the starting point in development, i.e. e-Services designed by an organisation and offered to the citizens. However, if the citizens do not feel that the e-Service is useful or if it does not fit smoothly into the business processes, then the investment and effort to use the e-Services might be too high (Henkel & Perjons, 2011). Therefore, the authors suggest that the changing of business processes should not be driven to ensure internal efficiency, but rather from the citizen's point of view. The public sector in Sweden applies the external customer perspective to various extents. Besides using mobile applications to increase customer ability to influence and co-design services in real time, and to allow citizens to co-produce their own services based on open data (Offentliga rummet, 2013), the focus on customer use and need for e-Services is more of an inside-out perspective (Lindgren, 2013).

Irrespective of approach, the intention in this paper is to regard the effort to communicate e-Services as a development issue with a social interaction dimension. Hultgren (2007:142) states; "*An e-Service is social interaction between a service provider and a customer - and possibly also between customers - through the use of the service provider's IT system and with the aim of providing actions and results for the customers.*" With a social interaction dimension, communication is explicit between the service provider and the customer. Further, viewing the citizens as external customers is in line with the business process oriented approach, useful for municipalities to deliver better e-Services (Christiansson, 2011). The core in a business process orientation is to view business performance in a horizontal and holistic manner to identify value added actions supported or performed by IT as enabler to create results with significant value for customers (Hammer, 1993; Davenport, 1993; Rummeler & Brache, 1995). Goldkuhl (2007) elaborates on the "service" concept in e-Services and advocates more "communication service" to the citizens. In this study, the focus is on the service provider's ability to communicate e-Services to support the citizens' ability to find, understand and use the service provided. The focus is on information about the service as well as instruction when using the service. This paper is driven by the research question: *What defines communicability in e-Services?*

The point of departure is to take a combined business process and a social interaction approach to the e-Service context. The hypothesis is that this combination will add valuable knowledge to explicit elements and criteria that are useful when evaluating and communicating e-Services. Limitations in this study are that it is hypothesis-

based and therefore related to the selected knowledge areas of process orientation and the social interaction dimension, i.e., communication between actors in a social relation. Other areas important for e-Service use such as web related research (e.g. Nielsen, 1999), are not substantially included in this study, but are to some extent highlighted as part of the e-Service context. Further, the e-Service context is defined in terms of a conceptual model based on three central knowledge areas such as service, organisation and IS/IT (information systems/ information technology) from the business process view. The surrounding business contexts, such as strategies, environment and infrastructure (Alter, 2006) are beyond the scope of this paper. The dimension concept is used in this paper as a defined perspective (the social interaction) on e-Services comprising electronic public service in business processes. In comparison, Lindgren and Jansson (2013) elaborate on three dimensions - public, e- and service - in the e-Service concept.

Regarding e-Services, the limitation in the municipality case is to a standard platform from one supplier. The supplier describes the e-Service portal as a standard system that is configurable with the ability to turn severe form handling into user-friendly e-Services integrated with 'e-ID' and 'My Account'. Solutions can be integrated with back-end systems, enabling faster and easier processes with functions such as transparency and duplicate signatures in the same case (Abou, 2013). In many public digital services, there is no direct and real-time communication between the service provider and the service user. Thus, the communication is skewed in that the supplier tries to imagine their customer (service provider) communicating with their customer (user) and build this into the digital service (actions and interactions provided). There is no possibility for the municipality to correct the built-in communication on the fly and this is of course a serious challenge and limitation of the implications of this study. However, the use of a social interaction dimension can be discussed and elaborated on regardless of the type of e-Service, since the basis in terms of the e-Service context is generic.

The paper is structured as follows: Section 2 presents the research design; Section 3 introduces the e-Service context based on a combined business process and social interaction approach and addresses the communication perspective on e-Services; Section 4 reports on and analyses findings of the municipality case: a pilot evaluation, interviews with developers and usability tests with citizens partaking in a university course; Section 5 concludes the paper.

2 Research Design

The research design in this study is to conduct a Practice Research (Goldkuhl, 2011); to make a scientific contribution to a general theory development (the communicability concept) as well as a practical contribution to the local practice (a basis in a handbook to the e-Office in Karlstad municipality) and general practices (a basis of an evaluation tool to e.g., other municipalities and organisations). Thus, the intention is to provide consumable research (Robey & Markus, 1998) with both scientific rigour and practical relevance. See Figure 1 for an overview of the research design.

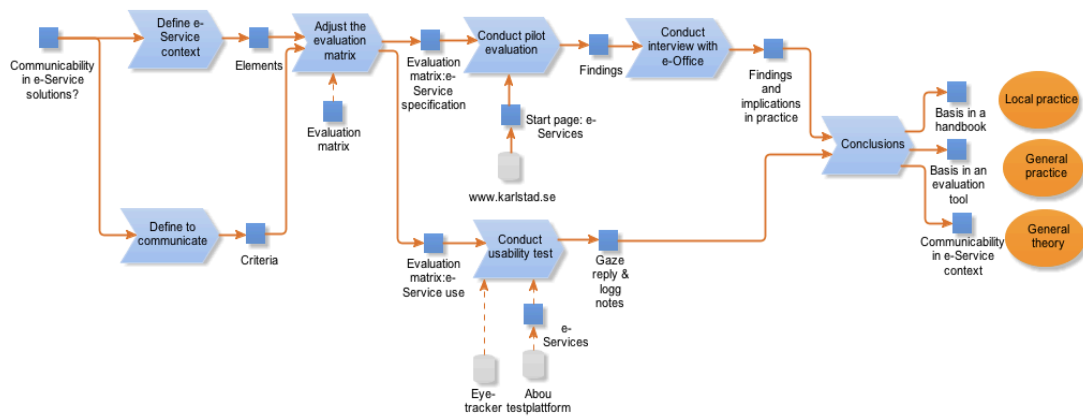


Figure 1: The Research Design

2.1 The municipality case

The municipality case is the virtual organisation, called the e-Office, which coordinates and supports Karlstad municipality as a provider of valuable e-Services to customers, i.e. citizens, companies, visitors and associations (Karlstad, 2008). The e-Service portal (a standard platform from the supplier Abou) with e-Services is used as a part of the overall e-Service offerings in the municipality, totalling 70 e-Services. Assigned roles in the e-Office are intended to ensure a combination of business, IT, and communication perspectives in the e-Service development. Unfortunately, the role of communicator is lacking but is represented by staff in each administration.

The trigger in this study is to elaborate on the concept of ‘communicability’ in the e-Service context. *Elements* and *criteria* useful in an evaluation matrix are identified through the theory on business process orientation, information systems as well as social interaction, speech act and communication theory. Moreover, to some extent usability theory is handled. A concept modelling (to make explicit the meanings and relations between concepts) is conducted in the analysis to define core elements in the e-Service context.

To use an *evaluation matrix* is a familiar approach in Karlstad municipality. The principles in a matrix are that each element should provide pre-defined criteria to focus on in an evaluation. In this study, the matrix will support an element-based inquiry drawing attention to pre-defined criteria perceived as important in a social interaction. Thus, criteria define the focus in each element in the e-Service context. *The evaluation matrix is adjusted* and used in two different evaluations. A *pilot evaluation* was conducted by the researcher in the role as evaluator on the ability to find and understand the information provided in compliance with positive match (+), negative match (-) and neither (0) according to defined criteria. Karlstad municipality’s web page with e-Service offerings during spring 2012 was used; see Appendix A. The e-Service - Application for Direct Debit is used as an example in section 4. The evaluation matrix was used as an *e-Service specification* to log descriptions on the website, about the e-Service offerings and instructions from the e-Service provider. The purpose of the pilot evaluation was to get an overall opinion of the possible use and *an interview* was conducted in April 2012 with the e-Office system developer and business developer to discuss the value and relevance of an social interaction dimen-

sion, i.e. a “proof of content” (c.f. proof of concept) in the e-Office toolbox. Results of the interview are presented in section 4 and the following issues were discussed:

How are e-Services evaluated and what is evaluated on the use of e-Services today?

Based on findings in the pilot evaluation, how do you value this kind of feedback?

Do you see any need to proceed with evaluations based on social interaction?

Citizens in Karlstad municipality, i.e. university students¹ registered as residents in Karlstad, conducted *usability tests* on the e-Service portal from Abou in the test-environment used by the e-Office (Sävenfalk, 2013). From 28 available e-Services the course manager appointed nine different e-Services for the test sessions, 16 sessions based on Karlstad municipality website by September 2012 (see Appendix) and 15 based on the new home page, launched in October 2012 (Karlstad, 2013). For a comprehensive report on the user tests, see Christiansson & Wik (2014).

Usability means supporting the user to perform in the way that he/she wants and expects to without hindrance, hesitation or questions (Rubin & Chisnell, 2008) and providing the user with a system that is efficient, easy to learn and remember, secure to use and difficult to do wrong (Benyon, 2010). We used the eye tracker from Tobii technology (Tobii, 2013) as a data collection tool to capture and record eye movements (*heat maps* shows where users fix their eyes in terms of length and time and *gaze plots* shows where users fix their eyes in terms of order) as well as the real time dialogue between the user, observers and test administrator. The evaluation matrix was used to log results from the *e-Service use*. Beside log notes, gaze replays² in terms of recorded eye movements together with voices showing user behaviour and reactions were analysed by live viewing. Seeing exactly what the user sees, acts and tells helps in understanding the users ability to find e-Services, performing and completing their task. No conclusions can be drawn whether and what users understand by what they have seen or not seen. However, comments from users and insights in search patterns, failed actions, action modes and problems occurred in the e-Service use can be noted. For the best analytical results, Nielsen and Pernice (2009) recommend a gaze replay analysis with approximately six users in order to draw correct conclusions on usability. In this study we had nine different users² of the e-Service - Application for Direct Debit, used as an example in section 4.

The conclusions of this study are a defined concept of ‘communicability’ in e-Service context as a contribution to the general theory on e-Service improvements. The concept will work as a basis of an evaluation tool for the general practice use, i.e. other municipalities and organisations communicating e-Service solutions. Finally, the concept can be used as a basis of “a handbook” (guidelines) to support the work of communicating e-Services in the local practice, i.e. the e-Office and administrations in Karlstad municipality.

¹ <http://www.kau.se/en/education/courses/ISGA03/anskaffning-av-it-system>

² Without previous experiences using the municipality e-Service.

3 The e-service context

To define the e-Service context, the intersection of three central knowledge areas such as service, organisation and IS/IT (information systems/information technology) is in focus from the business process view. See the process symbol in Figure 2.



Figure 2: The e-Service business process

In the context of e-Service solutions, a user interface (e.g., a website) contains descriptions of what action possibilities are at hand in the e-Service providers' organisation, i.e. the *action repertoires*. Goldkuhl (2007)³ uses the concept of communicative *affordance*, i.e. the citizens' ability to communicate with the public sector through e-Services (usually to read information from the service provider and to submit to/answer the municipality and their employees).

The *purpose* of the business process (e.g., to provide and deliver an e-Service) is linked to strategies and goals (e.g. 24/7 service delivery) in organisations to ensure business performance and significant value in *results* for internal as well as external *customers*. Important questions to pose when defining customers (Benyon, 2010) are who will use the system (e.g., e-Service), what are people going to do, in what context and with what kind of technologies (i.e. channels). The front-end user interface contains descriptions of services, i.e. prerequisites for communication to establish a social relation between the provider organisation and customers. A holistic view on e-Services goes beyond the front-end website to the back-office and the business processes, i.e. the organisation's ability to provide, deliver and perform services through IT (Christiansson, 2011). The service provider follows *regulations* in terms of general legal rules, specific business rules as well as individual rules in e.g. case handling (Goldkuhl, 2011; Henkel & Perjons, 2011). See key elements in a business process e-Service delivery in Figure 3.

³ Referring to Gibson (1979) and Hutchby (2001).

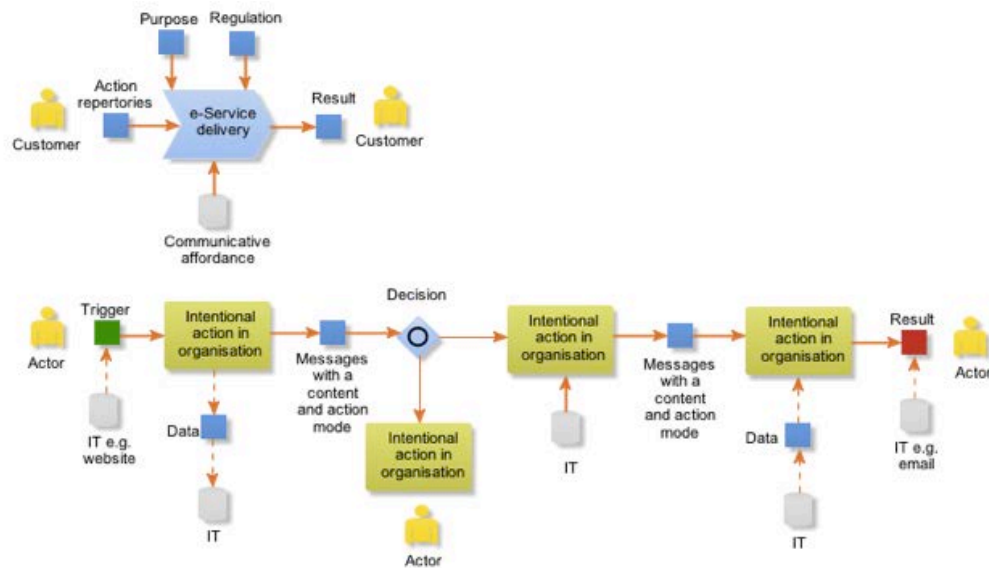


Figure 3: Elements in an e-Service Delivery process (based on Christiansson, 2011:2)

A business process view (based on e.g. Davenport, 1993; Hammer, 1993; Rummler & Brache, 1995) provides explicit prerequisites for communication in a social business context. *Actors* (employees in roles, systems/IT or customers) in or across organisations exchange action objects in terms of messages (trigger, input and output). In a social interaction between a sender and a receiver, messages (i.e. speech acts, see Austin, 1962 and Searle, 1969) have to be related to a social context of actors, intentions, commitments, norms, rules, value, expectations, facts and subsequent actions. When the receiver understands the message as intended, he/she acts in line with the purpose of the sender and the communication is successful. Thus, a *message* contains both a propositional *content* (information) and an intention, i.e. an illocutionary force (Searle, 1969). Communication is thus *intentional actions* based on established interpersonal social relationships between a sender and a receiver (Goldkuhl, 2007).

Citizens trigger the business process based on a need to communicate and solve a problem or use a possibility by initiating a case (requests, applications for permits and allowances etc.) and follow the same by e.g. the website, mobile application, phone, face to face, social media and/or by email, i.e., by multiple channel choices. Goldkuhl (2007) discusses the value to citizens in terms of increased knowledge and possibilities in subsequent actions (to be informed). A response to e.g., an application will be considered as positive (approval) or negative (refusal) but still there is a value for the citizen in e-Service performance (a result) versus value for the citizen in use (the content), which eases or complicates a situation. Thus, value in communication can be related to non-action (uncertainty), action (actability), interaction (relation) and result (impact or effect). To communicate is to perform actions (see theories of e.g., Austin, 1962; Searle, 1962; Habermas, 1984). Information systems act as communication systems to support and enable actability, i.e. to permit, promote and facilitate actions in organisations (Ågerfalk, 2003). Through communication, social relations are established, maintained and modified (Goldkuhl, 2007). People act in relation to each other, i.e., sequences of actions are performed in a context to create results and effects

(Habermas, 1984). This is in line with a business process oriented view on service delivery, i.e. explicit customer focus in a horizontal and holistic mind set for value creation in actions and results. The social context of business performance is what makes the user interface and the e-Service performance meaningful.

Communication is of great importance in the service quality (Gummesson, 2002). Services are being produced and consumed simultaneously, i.e. the customer experiences the service delivery while co-producing it (Edvardsson & Olsson, 1996). Thus, both the service provider as organisation and employees together with citizens perform actions in the service delivery process. The essence of a service process is a number of interactions producing customer satisfaction or dissatisfaction. Grönroos (2000) uses the concept of service encounter to explain that the service is produced and delivered when the customer physically meets the employee from the service provider. This implies that a service is situated in place and time when the customer and the service provider meet to interact. Instead of physically meeting, the communication between the service provider and the citizens is mediated by the e-Service solution (Hultgren & Eriksson, 2005). The service encounter also implies that relationships between actors are created.

Service performance in business processes is associated with benefits and utilities for customers (Grönroos, 2000). Organisations focusing more on the IT solutions than on the 'business' and its assignment may forget the value-added idea to design business processes to use IT as an enabler (Hammer, 1993; Davenport, 1993), i.e., to highlight the use situations (discussed in Hultgren & Eriksson, 2005⁴). Self-services on the other hand, imply that e-Services do not include social interaction, as services are being produced and consumed by the customer. However, this is not in line with a social interaction dimension. E-Services are performed in a relationship between actors in a business context between the service provider and user (as well as co-producer and customer in the service delivery). Services provided by municipalities are usually opportunities to read information (i.e., to get information from the service provider) and to submit (i.e. to tell/answer the municipality and their employees). Goldkuhl (2007) describes different communication parts in public e-Service front-end solutions: Table 1 highlights the ability to communicate and actors in different roles in the social relationship established between a sender and a receiver.

⁴ Referring to Ågerfalk (2003)

Table 1: Communication in e-Services (based on the municipality case in Goldkuhl, 2007)

Ability to communicate	e-Service	Actors and roles
Action repertoire – what can be done?	Communicative affordance	Provider of e-Service offerings and actability (sender)
Preconditions – what service provider says	Preceding the communicative action of a user	Provider of opportunities to use the e-Service (sender) Interpreter in use (receiver)
Actability – what users say – what users want to do	Communicative actions, retrieval and movements	Provider as interpreter (receiver) Information supplier and co-producer in service performance (sender) Navigator and interpreter in use (receiver)
Messages – what speech act will be performed?	Communicative actions e.g. supply option, placement offer, application, offers response, schedule change and notice of termination	Provider with offerings and information to users (sender) Interpreter in use (receiver) applying, accepting or declining offerings (sender) to a result (receiver)

3.1 The e-service concept

Hultgren (2007) stresses three fundamental criteria to regard a business phenomenon as an e-Service. The service provider and customer roles must exist, the interaction between them depends on the use of IT and the customer must utilise the service provider's IT system. Citizens might initiate and follow cases (requests, applications and reports) together with using functions for registering, calculating, booking, reading and printing information through e-Services on websites. However, a large number of e-Services are provided with multi-channel communication, information and dialogue (Sousa & Voss, 2012), combining the website with other channels of service delivery, such as social media, mobile applications and a contact/customer centre. Users can access the same service through different channels. Another characteristic is 24-hour digital availability independent of geographical location, which differs from paper-based routines and implies a certain degree of self-service (Burell, 2006).

The use of e-Services is extending beyond simply improving the efficiency of routines in the organisation. Given the ease of use and increasing mobile data network capacity, users deal with day-to-day routines, both in private life as well as in business and public environments. Additionally, open data provide third parties and citizens with opportunities to develop new government e-Services as co-creators (Prahalad & Ramaswamy, 2004). Initiatives such as open government data require transparency and a high-level of support of openness, prerequisites for increased innovation capacity (Chesbrough et al. 2006) as well as established relationships with citizens to turn government data into information (Francoli, 2011). E-Services are thus a complex practice including business process improvements (Chourabi et al. 2009; Corradini et al. 2010), communication on websites (Cronholm, 2010), open innovation possibilities (Feller et al. 2010), different types of e-Services; generally directed to anyone or individualised and specific (Goldkuhl, 2007; Millard 2011), demanding public value and trust (Grimsley & Meehan, 2007) together with citizens' variety of

usage in a digitally divided society (Sipior et al. 2011). Moreover, with the increasing significance of social media to provide a dialogue in daily business and wider citizen participation by use of Web 2.0 principles (Chun et al. 2010) there is a need to adopt a more flexible and experimental approach in public e-Service development.

Interaction in e-Services between government and citizen provides different degrees of sophistication. Authorities still offer e-Services that only entail customers to read and print forms provided, i.e., one-way communication (c.f. self service). A consequence is that communication between citizens and the authority has to go through parallel channels such as the phone, email and face-to-face meetings to conduct case handling. An additionally view is that *"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."* Goldkuhl (2007:156) This definition implies more advanced e-Services with a two-way communication with access to read and send messages. The role of IT has changed from a black box to a communicative instrument between sender and receiver in a social context (Goldkuhl et al. 2009). However, is the right approach to develop as many e-Services as possible or only services defined as crucial for citizens? Does it matter if the use is frequent or is a service motivated even if it is used on few occasions or only once in a lifetime? There are many questions to elaborate on in further studies and it is a complex task to develop successful e-Services. Is it even possible, and for whom? A business process description illustrates the use of IT in its context, i.e., the relationship between actors in pre-defined roles shows an exchange of messages (with a content and an intention) in value-added business logic with provided actions to reach a result. On such a basis for discussions, use scenarios can be discussed and transformed into more value-added contexts for different actors in the service delivery. According to Ågerfalk (2003), different types of use situations in IT occur; to permit, promote and facilitate the performance of actions (an interactive use situation); to perform actions on assignment (an automatic use situation); and perform actions on information from the system (an external use situation). Hultgren and Eriksson (2005) suggest a more holistic approach and stress that the service process is composed by one or a combination of use situations and cannot only be understood as automatic from the service provider point of view and the interactive use situation from the customer point of view. Different customers have different perceptions of service value (Zeithaml et al. 1990). The service is co-created by the provider and the customer with their resources, skills and ability (Grönroos, 2008). With a process perspective, the service is described as actions, business-logic and delivery rather than result (Christiansson, 2011; Edvardsson et al. 2011). Zeithaml et al. (1990) state that the supplier of a service must explore the customers' expectations, specify the service according to these expectations, ensure that employees follow these service specifications and communicate information about the service to the customers that sets realistic expectations. The e-Service value in terms of service is discussed in Goldkuhl (2007). The concept of service in public e-Services can be problematic when rejections are made or provided channels provided are not appropriate etc. Furthermore, the customer concept is complex. A company might choose their customers and provide their target groups with adjusted services. This is not possible for a government, thus an e-Services is not suitable for all kinds of customers per se and is not appreciated in the same way based on individual experiences. Moreover, laws and exercise of authority regulate the service process logic, i.e., this is not always perceived as a ser-

vice. This might indicate that it is not relevant or possible to develop e-Services for all tasks in public administration. Further, e-Services may co-exist (Hultgren, 2007) in terms of additional detailed information and possibilities of actions within the focal e-Service.

Hultgren (2007) presents a number of social interaction elements in an e-Service context by stating that e-Services are not only a technical question for the service provider but also a social commitment based on social norms to deal with customer expectations. Further, e-Services should provide business transparency and action clarity to make sure that the user knows what kinds of actions are provided and what actions are performed. Goldkuhl (2007) agrees and adds the importance of notifying citizens when action modes change relations, and stresses information richness in content. Finally, beside e-Services' use in social interactions (support and/or enabler), they might be autonomous and used in social media. IT (the 'e') will not be further elaborated on here beyond the fact that IT is an Internet-mediated actor (a performer in the digitalised service delivery) or a support to other actors (with different roles in the organisation) with an interface (website), functions (related to and sometimes integrated with back-office systems) and a channel. With a process-oriented view, actions provided by IT and IT as an actor or support in the service process is in focus instead of the IT solution as a technological artefact per se. Lindgren and Jansson (2013) refer to the importance of the latter, but this is beyond the paper. See the emerging conceptual model in Figure 7 as the result in terms of the e-Service context defined in this paper.

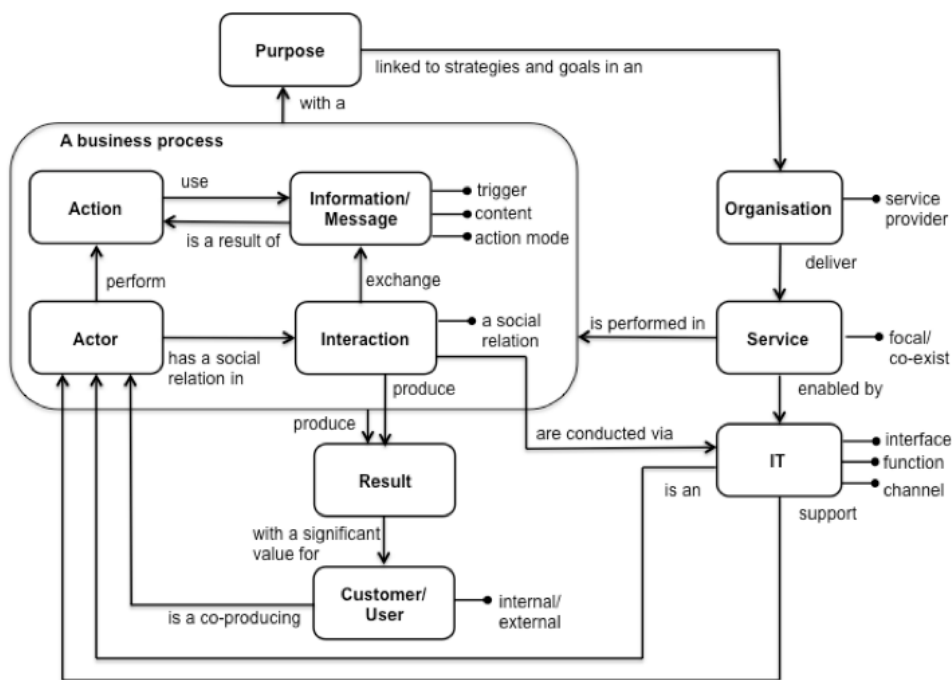


Figure 4: Core elements in the e-Service context

3.2 Communicating e-services

When launching e-Services, the communicative perspective can add important insights besides design and technical issues (Axelsson & Ventura, 2007; Goldkuhl, 2007). Research shows that it is useful to study e-Services from types of qualities (goal, communication and interaction) at three levels of e-Service actions: business, communication and interaction (Goldkuhl et al. 2009; Cronholm, 2010). However, in this study, types of qualities are viewed in the light of the operational business process to explain impact in e-Service use (i.e. to communicate in actions and interactions) in the business context. The approach is to link each criterion to business process elements rather than levels of abstraction. In Cronholm's study (2010), some criteria are identified as multi-faced (characterised both as an interaction and as a communication criterion). Additionally, criteria from the two studies in Cronholm (2010) and Goldkuhl et al. (2009) are shown to be inconsistent (as much information as possible vs. sufficient information). Thus, the e-Service context is important to guide design decisions.

Examples of goals (G) and design criteria (D) from studies by Cronholm (2010), Goldkuhl et al. (2009) and Axelsson & Ventura (2007), together with some usability heuristics (U) by Nielsen (1995) define criteria to focus on in an evaluation matrix. Findings in the literature reviewed (signalled by italics in the text above) are related to social interaction (SI), business process orientation (BP), information systems (IS) and service management (S), see Table 2. A more comprehensive study might find additional elements and criteria to be useful as well as refinements in structure.

Table 2: Elements and criteria as a base for communicable e-Services

Element	Criteria
Purpose	<ul style="list-style-type: none"> • Intention clarity (BP, IS, D) • Goals in organisation (BP, IS) <ul style="list-style-type: none"> ○ To simplify communication (G) ○ To shorten the time for handling (G) • Customer expectations (S)
Actor	<ul style="list-style-type: none"> • Actor clarity (BP, D) <ul style="list-style-type: none"> ○ Service provider (SI), Service producer (S) ○ Customer (BP, S), User (U), Receiver (SI)
IT	<ul style="list-style-type: none"> • Enabler (BP), Support (IS), Complement (G), Self service (S) <ul style="list-style-type: none"> ○ Focal/Additional/Co-existing ○ To be used but not to replace face-to-face meeting • A match to the context - between system and the real world (D) <ul style="list-style-type: none"> ○ To let the system speak the users' language ○ To follow real-world conventions, making information appear in a natural and logical order ○ To categorise information ○ To provide menu items that are unequivocal ○ To provide contextual information ○ To present information for cumulative knowledge building • Channel clarity (IS), parallel to others <ul style="list-style-type: none"> ○ To use one or multiple ways of communication e.g. website forms, phone, mobile application, social media, email, mail, face-to-face • Actability (SI, IS) <ul style="list-style-type: none"> ○ To provide possibilities to read, print, submit, answer ○ Permit, promote and facilitate actions in a social context

	<ul style="list-style-type: none"> • Usability (IS) <ul style="list-style-type: none"> ○ To support the user to perform in the way that he/she wants and expects, without hindrance, hesitation or questions and is efficient, easy to learn and remember, secure to use and difficult to do wrong <ul style="list-style-type: none"> ▪ Intention ▪ Contextual based on interaction ▪ Overview/Easy to find ▪ Matching categories ▪ Unequivocal menu items • Visibility of system status (U) <ul style="list-style-type: none"> ○ To keep users informed about what is going on
Action	<ul style="list-style-type: none"> • Clear action repertoire (SI, G), <ul style="list-style-type: none"> ○ To provide a service catalogue • A match with intention <ul style="list-style-type: none"> ○ Sufficient communication need and functionality (D)
Information	<ul style="list-style-type: none"> • Richness (G)/Sufficient (D) <ul style="list-style-type: none"> ○ To provide user with as much information as possible/needed • Affordance (SI) <ul style="list-style-type: none"> ○ To give invitations to action i.e. the citizens' ability to communicate with public sector • Guide user to effective use (G) <ul style="list-style-type: none"> ○ To design system that can be used without documentation (D) and/or ○ To provide information that should be easy to search, focused on the user's task, list concrete steps to be carried out, and not too extensive (D) • Consistency/standards (U), to avoid words, situations, or actions meaning the same thing <ul style="list-style-type: none"> ○ To follow conventions, users' language/familiar phrases
Interaction	<p>Clarify the social relation (SI) To define actor and role in business (IS) process (BP) Exchange messages with intentional meaning according to the social relation (SI)</p>
Result	<p>A match with intention (D) A significant value for customer (BP) and in customer use (S)</p>

4 Evaluations and Implications in the Municipality Case

The e-Office was launched in 2008 “- *The introduction of the first e-Services started with a citizen perspective with some simple types of services, this would not have been profitable in the first step. There was a need to start the process and the priority was the citizens, for them to be able to do their errands, and what we could learn from them.*” (System developer, 2012) Evaluations of e-Services have been conducted by a utility calculation to define benefits to the government and included a business perspective on e.g., the turnaround time and how cost-effective the process was in terms of e.g., postage as well as all aspects of IT such as calculations on the operation. With Google analytics, the e-Office has the opportunity to estimate, what services are being used and at what stage in the service process they might exit to indicate need for improvements. Additionally, some email services such as fault reporting and citizens' views have different types of follow-up entered into the strategic plan and include annual follow-ups outside the e-Office. The municipality has certain services that are seasonal, such as summer swimming lessons and some improvements are made between their appearance on the website. “- *Based on the experience we have today, we*

should be able to go through the services and make improvements we already have but there has been much focus on developing more services for the municipality..." (System developer, 2012)

Sambruk is a joint venture working for a development of e-Services based on the idea that all Swedish municipalities have identical missions, responsibilities, and challenges to undertake. The overall purpose is to create a foundation for an effective development programme, comprising both the technical and functional aspects of e-Services, as well as the need for re-engineering the municipalities' internal business processes. Similarities and differences between the service offerings of different municipalities are analysed and results are presented in both enhanced services locally and overall benefits on a national scale. A collaborative approach throughout the analysis, specification and procurement phases will ensure a better result from both economical and functional aspects with a common technical platform. (Sambruk, 2013)

The e-Service portal is further developed in collaboration with other municipalities in Sambruk, which means that a significant development takes place in cooperation where improvement needs are identified and shared. There was a list from the e-Service portal supplier (Abou, 2013) with more than 50 existing e-Services that could be chosen and adapted to local administrations. When it comes to improvements, other municipalities in the community may have resolved functions and features that were put on hold, i.e. member municipalities can benefit. (System developer, 2012; Business developer, 2012)

One problem with having too many e-Services may be that they are too similar. The e-Office often works with form services, the simplest type of e-Services, but the municipality has about 200 forms, and many could be conflated. "*The more services that are implemented and the more the e-Office grows, the more we need other ways to categorise and make other information efforts on services to make it easier for citizens to search. The citizens act in "the Google way", they are not looking for e-Services today, they are seeking*" (System developer, 2012). Outreaching information has become increasingly important. As a result, the municipality home page will release a new version providing an extensive update on how to access information on the web (Business developer, 2012).

Although administration units provide content on e-Services to the e-Office, or write and change content themselves, it is often the communicators who pass along the content changes. "*We have tried to stress some things about the communication of e-Services such as at least provide three questions in the FAQ etc.*" (Business developer, 2012) The idea was that one person in the role of communicator would communicate guidelines to the units' communicators. Some guidelines are used when writing and follow the graphic identity but it has been "sluggish". The various administration units like to use their own model and tend to ignore guidelines and templates. When the differences were too great, the e-Office tried to show different solutions and examples to achieve a more uniform appearance. It is desirable that the text that describing the service process is also illustrated graphically so the user can see the flow, roles, what should be done and what should be produced as part of the service to achieve the desired end result. "*A great debate has been going on internally about the right level of detail in process descriptions, where some believe that people do not understand the process descriptions, which I claim they do. What we still got*

through and managed on this trip was to get officers to even comment on the turnaround time."

Time is measured on all actions performed in the e-Service and although the e-Office does not follow up case management, it monitors the incoming cases and the status of these. If they are untreated, or if it takes longer than expected in the case handling, the e-Office might "raise the issue". The officers are usually skilled at performing their cases, even if they do not know if the promised turnaround time is kept. This is a feature that could be build in to keep track of cases and see if they are handled within the promised time but this is not something the e-Office has chosen to spend time on. When the municipality started its journey towards e-Services, they started with an in-house service development. "*- We had officers who were angry that the citizen was submitting items in a holiday through e-Services, so it's about turning an organisation into a service mind-set.*" (System developer, 2012) The lack of service thinking might be reflected in the external communicative actions.

The e-Service development in the municipality has gone from a monologue via status flags to the portal of services now in use within the municipality, which has given better opportunities for communication on a case: the citizen may submit information and the officer can interact with citizens through dialogue in the service delivery. For these services e-ID is a prerequisite because it is only then that the municipality knows with whom it is communicating. Additional channels could be SMS (text messaging) and even links between portals (where, in turn, pressure screens and apps can be part of a service). Technically, it is very difficult to get all the files to go through a platform so the challenge is camouflaging transitions between different systems so that the user experiences it as one application. The municipality is working specifically on standard and cooperation before uniqueness, so they will not make drastic design changes over the coming year as they focus on starting to interact with other municipalities in the region. Design changes on web pages are made for the better but it also involves a lot of testing, "*- ... so sometimes you know you ought to change but it takes too much energy to be worth it*" (System developer, 2012).

4.1 The pilot evaluation

The e-Service start page (see Appendix) is the scope of the pilot evaluation together with the e-Service - Application of Direct Debit used as an example. Findings include compliance to the *web page structure* e.g., the use of tabs to find general information ('FAQ' and 'Contact us'), *information in connection* to specific e-Services ('About the e-ID') and *information on* e-Service offerings ('The Handling'), *categorisation* (e.g. basis for classification, placement of e-Services) and *concepts* (on e.g. tabs vs. title of e-Service vs. description of action and information in action).

The information on the start page reads: "*For some services you need an e-ID*". This message raises the question of which services have this condition? "*- We could put the information in connection to the service definition. Now there is a description of the services that need e-ID in the home section for each service.*" (System developer, 2012) Moreover, the same information appears on two different tabs, so it is difficult for users to understand the difference between 'My Cases' and 'My Details'. There are several entrances to the same service and they are presented in slightly different ways depending on the entrance page. The services are generally presented briefly and concisely, which the evaluator appreciates, but some services are set forth with more extensive text and a more or less general process map with a time-step in

the procedure. One explanation may be that some administration units themselves write the information on home page for each e-Service and the service description, so there is a huge variety. *“- Sadly, a lot of e-Services still reflect what the organisation looks like internally... these results are really good for us, we were supposed to have better guidelines”* (System developer, 2012). See example in Figure 5 on the case handling description in the e-Service Application for Direct Debit together with the evaluation matrix in Figure 6. Text in italics is found on the website and findings are marked in bold to note and reflect on in addition to the compliance.

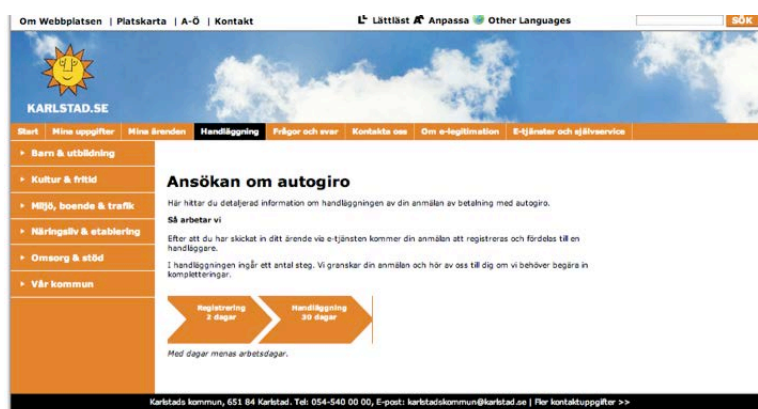


Figure 5: Application for Direct Debit (Karlstad, 2012)

In relation to the element ‘Information’, the criterion ‘Placement’ might be valuable to reflect on where information provides support to the user. One example is the information about time for result in terms of an account ready to use in Application for Direct Debit. In the evaluation matrix, this is noted as “missing” but if the user goes to the tab Handling (see Appendix) information is provided in terms of case handling days (even though the user is not sure how to interpret turnaround time, processing time, and handling time). However, the process description is on a high level and actions are implicit, i.e. the citizen will not get an answer to when the case handling is expected to deliver a result (how many working days from application date, if the time is related to response, decision or an account) as in the statement on the website *“We want to tell you about the processing time so you know when you can expect a response or decision.”*

Overall findings in the pilot evaluation reads: Multiple entrances to e-Services (e.g., from the home page, the e-Service start page, in several categories as the case of Application for Direct Debit, in e-Service lists with e.g., 36 e-Services (in a total of 70) structured from A-Z, in ‘Popular services’, besides the search function. Moreover, there are multiple similar services for e.g., the e-Services Suggestions, Point of views and Complaints, providing the same action for citizens, which might be confusing. Additionally, different naming/meaning on tabs (which made the evaluator wonder about differences between ‘My Cases’ and ‘My Profile’), titles of the appointed page and actions provided might cause some confusion as well. One example of the latter is that the tab Handling, described above with a clear purpose and the following information on the site: *“... a list of our e-Services, their average turnaround time and responsible business for each service. If you click on an e-Service a description of the*

steps involved in the process is provided.” The evaluator’s comment on this information is that if this is the service catalogue (a list of e-Services), then the placement of actors (responsible business) should be given in the service process description, i.e. in its context. Finally, categorisation is based on administration units in the organisation, instead of results and actions provided. Visitors are not a target group in e-Services but might be users in some. Overall there is a lack of defined actors/roles in relation to performance (e.g., in case handling with employees as producers) in the service process as well as information exchange and intended action mode (e.g. a request, an answer, a decision, an offering, an invoice and so on).

Elements	Criteria	e-Service description	Compliance
Purpose Context Interaction	Intention/ Value	<i>Here you can find detailed information on the handling of your registration for paying by direct debit.</i>	(-) The intention and value of the e-Service is not explicit. (+) Overview of the focal service (-) No intended/established relationship is communicated
Actor	Service provider Customer/ User		(+) Service provider explicit in footer (0) Customer/user in target group is not mentioned
Action	A guide for an effective use	<i>Register 2 days</i> <i>Handling 30 days</i>	(+) An overview of the case handling sub processes (-) The process description is without actions and actors
Information	Overview Intention Sufficient Message exchange in a social relation	<i>How we work</i> <i>After you submit your application via e-service your request will be recorded and allocated to an officer.</i> <i>The processing includes a number of steps. We will review your application and will contact you if we need to ask for additional information.</i> <i>With days we mean working days.</i>	(+) Overview description of the service (-) Only description of actions by the service provider (-) Why mention e-Service in the e-Service on the website? (-) The process description is without actions and information exchange
Result			(0) Not mentioned (what and when?)

Figure 6: Evaluation matrix for the e-Service - Application for Direct Debit

4.2 Use of a social interaction dimension in practice

To validate the usefulness of a social interaction dimension in e-Service solutions, the findings of the pilot evaluation were presented to discuss the e-Office's views of such feedback and the relevance of using an evaluation matrix. It appeared in the interview that all types of feedback (+, -, 0) were regarded as interesting and the pilot was commented on with keen response. Several of the overall findings have been discussed internally, such as understanding the e-Service concept and the importance of the service catalogue. When the first version of the catalogue was created, others said

that the citizen does not quite understand this. Many questions arise: "Who is the citizen?" "What is and where is the self-service?" and "What is the "e" that is not online?" There is no further use of the concept of self-service besides the tab for the e-Service start page. There is an on-going discussion about which concepts should be used. "*- What we have seen in the municipalities in Sweden is that they are more inclined to talk about service and self-service instead of the two concepts of e-Service and self-service where e-Service makes it a self-service.*" (System developer, 2012) There is clearly a need for an understanding of e-Services as a part of the municipality service delivery and of the role as service provider as well as service producer in an established relation with citizens. By communicating objectives to everyone involved in an e-Service context, as well as roles, actions and results, clarity in the service process and support to citizens' use might increase. "*- This is great, this would get communicators to join and listen too, the picture that you present here...*" (System developer, 2012) Regarding the findings in the pilot evaluation on for instance categorisations the system developer continues; "*- It is an on-going discussion, but it's great, this is precisely the sorts of things we're looking for*".

Commenting on areas in which to use the results in the pilot evaluation and on a social interaction dimension, the system developer (2012) says: "*- It could be a checklist ... which allows you to tune in if you have gotten it right... yes, it is such a list we want in the e-Office. The fact is that when we're driving workshops we want and try to invite communicators, those who have this perspective, but they don't have this perspective always either. I think when it comes to getting a uniform language on the whole to follow the services, there is a risk in the way we introduced the service, when we started to duplicate services from another municipality ... with their language, it was important that we "washed services" so that they felt like Karlstad.*" If the evaluation findings turn into a handbook or a guide, she says "*- Then we should also strictly follow the municipality home page structure with categories and so on.*" (Business developer, 2012)

4.3 Communicability in e-service use

In usability testing, an end user evaluates the usefulness of a particular IT solution with the focus on if the system meets specific usability criteria (Nielsen, 1995; Rubin & Chisnell, 2008) or identifies problems, which arise when using it (Benyon, 2010). In the user tests we had two different tasks: *to navigate* from the e-Services start page (in the e-Service portal test environment based on the former municipality homepage from 2012) *to find* the e-Service, *to use it* and *determine case status and expected turnaround time* (case handling time). The other task was *to navigate* from the new home page (Karlstad, 2013) in order *to find* the e-Service, *to be able to describe its purpose* and *expected turnaround time*. Using the search function was not allowed. In total, 31 test sessions were conducted based on seven different e-Services. The target was citizens' experiences regarding overall aspects on the service provider's ability to communicate e-Services, thus no attention was given to website version or type of e-Service. A comprehensive report on the conducted usability test is beyond the scope of this paper (cf. Christiansson & Wik, 2014). Findings from user tests (based on analysis from 5 hours gaze replays and 30 pages of log notes) are analysed in relation to the theoretical foundation in Table 2 and summarized in pros (+) and cons (-) with a categorisation as follows:

To find the e-Service

- (+) All users found the appointed e-Service in “Popular Services” in test 1
- (-) Some users did not find the appointed e-Service at all in test 2
- (-) Categorisation is based on administration units in the organisation, instead of results and actions provided
- (-) Some concepts (e.g. direct debit) were not familiar to the users matching with the categorisations in pictures and menus, i.e. the user did not find the context. “- *You must connect the direct debit to some e-Service, or?*”

Additionally, the user search patterns show a range of variation, from finding the service directly, frustrations and missing the target service.

To understand the e-Service

- (-) The intention and value of the e-Service is not explicit
- (+) An overview of the appointed e-Service context
- (+) An overview description of the appointed e-Service
- (+) Service provider explicit
- (-) Only description of actions by the service provider
- (-) It is not mentioned what kind of result is to be expected and when

To use the e-Service

- (-) Customer/user as the e-Service target group is not mentioned
- (-) No intended/established relationship is communicated
- (-) “- *But, I’m already logged in*”, i.e. the user felt an established relation with the service provider system and found it confusing when they had to resubmit their personal details
- (-) Some e-Services had a lot for the user to register, which made some users asking if all this information would really be used and if it was required
- (-) “- *I have already done this!*” was one of the comments when the form required the same information a second time
- (+) An overview of the case handling sub processes
- (-) 75% of the users did not find the information concerning case handling time (some users tried the tab e-ID, the tab ‘My Cases’ and several users opened a .pdf)
- (-) The users had major problems to determine case status as they did not know what to look for, i.e. they did not comprehend the concept of “status”, status on what?
- (-) The process description lacks actions, actors and information exchange
- (-) Information was missing to guide users in entering the required data to go on to the next mode in the e-Service

(-) Overall findings were that no one looked at important information from the e-Service provider marked with "Attention!" on the right hand side with important information and contact information

(-)"- *What am I suppose to do now?*" as well as "*- Am I suppose to do something?*" indicates a lack of defined roles in performance as well as information exchange and intended action mode (e.g., a request, an answer, a decision, an offering, an invoice)

(+) Instructions in forms to be filled in, i.e. actions required

(-) "*- If I press my case number, I will expect to find the processing time there*" as well as "*- There tends to be information relating to the page I'm on instead of having to go elsewhere*" might indicate that the placement of information should be in relation to actions

(-) When the button with the message "*I sign with my identification*" was used to approve the application, the user "clicked" additional times when there was no response to the submitted message

Our young users (in average between 19-23 years old) might explain the lack of knowledge on what the service was all about is some test sessions. We used the name of the e-Service in the course assignment. The service provider terms some e-Services as actions (e.g., apply and register), others as the result (parking permission), or place/function (design archive) and still others are based on topic (e.g., food poisoning, composting, and civil marriage). The different approaches might explain some confusion as well. The time from start to finding the appointed e-Service varied from 30 seconds to 1 minute in test 1. The time from start to finding the appointed e-Service varied from 1 minute and 45 seconds to nearly 5 minutes in test 2.

5 Conclusions

The definition of the concept "communicability" in e-Service solutions is based on a combination of a business process orientation and social interaction approach in the e-Service context, see Figure 7.

To find (user) To clarify (provider)	<ul style="list-style-type: none"> • the e-Service purpose/goals/role with a match to expectations • the service catalogue with e-Service offerings • the e-Service business process and its prerequisites • multiple channels for service delivery
To understand (user) To explain (provider)	<ul style="list-style-type: none"> • actors and roles in the social relation • business context • action repertoire • valuable actions with a match to intention • sufficient information, affordance, guidance and consistency • results with significant value in use
To use (user) To establish (provider)	<ul style="list-style-type: none"> • interactability (action modes and message exchange) • actability • usability • visibility • simultaneously (service in many/all channels)

Figure 7: Communicability in the e-Service context

To improve e-Service use, one idea is to focus on the users' ability to find the e-Service, i.e., to clarify "why" the e-Service is a good idea. Furthermore, the e-Service provider needs to explain "what" the e-Service is about to improve the citizens' ability to understand the service. Additionally, to provide effective use of the organisation's e-Services is to establish "how" the e-Service will support the user along the performance. In this paper four different "layers" in communicating e-Services have been identified; the organisation home page, the start page for the e-Services, the information about the e-Service and in its use.

The conclusions to be drawn from this study are that using a social interaction dimension in an evaluation matrix will identify potential improvements in e-Service solutions. Suggestions for potential development put forward by the e-Office include adjusting the results in this study to produce "a handbook" (guidelines) on communicating e-Services, designed to be useful to administration units. Reflections made in the interview with the e-Office show that the municipality leans towards developing guidelines for communicating the e-Services, rather than making design changes and time-consuming tests. Since 20 municipalities interact within Sambruk on the same portal for e-Services and thus offer much the same e-Services that are structured in the same way, they would also find the evaluation matrix and results of this study interesting, particularly in the community formed by people from the various municipalities working in similar roles as the e-Office staffing. The e-Office found the results useful as a basis for discussing the sensitive issues that had been discussed earlier in the municipality, but were now illuminated by an independent researcher drawing some conclusions about the municipality as service provider and producer.

5.1 Limitations and suggestions for further research

There are limitations in this study, and the suggestions for further research include more in-depth studies in each of the central knowledge areas as well as the combination of areas for the purpose of defining the e-Service context more in detail. One study should be based on more literature from business service research (e.g. by Chesbrough, Spohrer, Vargo & Lusch to mention a few). Moreover, the organisation context communicating e-Service solutions is essential to ensuring a return on investment and should also be studied further.

Usability studies together with surveys may provide municipalities with information about their customers (e.g., to provide preferred channels and e-Service solutions as such). Furthermore, the ability to communicate e-Services can be tested; the problem is finding and gaining access to the "customers", i.e. users from different target groups in a public setting. Besides cooperation with the university, one suggestion is to involve the contact/customer centre, which has the opportunity to get close to citizens, companies and visitors; another suggestion is to use a recently developed conceptual framework for identifying, characterising and involving stakeholders (Lindgren, 2013). E-Services can also be evaluated based on findings in this paper and, together with the e-Office and supplier. An inter-organisational maintenance process to improve and sharpen the requirement specifications to the e-Service portal supplier can be developed. Besides, correcting the built-in communication is a challenge in standard e-Services lacking real-time communication.

The case study shows no evidence that a web page and e-Service design based on a social interaction dimension will be more appreciated by citizens or increase their ability to use the e-Services. However, there are indications that this could be a proper

direction to follow in communicating e-Services. Although the paper does not elaborate on other evaluation tools and instruments for analysing e-Service initiatives, this will be an interesting topic for further research, i.e., not only on content but also on approaches and tools and if it is fruitful to combine a business process oriented and e.g. a level based approach (e.g. Goldkuhl et al. 2009) in evaluation. The experience of using the evaluation matrix shows that it might be difficult to use without the theoretical grounding, i.e. a deeper understanding of the meaning of elements and criteria. Since it is not obvious how to use elements and criteria, some normative recommendations and guidelines will be necessary to support practitioners. Elements and criteria might be used separately until empirical studies show more practical evidence. Moreover, key elements and criteria may work as a focus or as a "check-list" in an e-Service specification to describe and analyse on the basis of common principles of communicability for local practice. The evaluation matrix needs to be used in a more comprehensive study. Thus, more research on the methodology is required.

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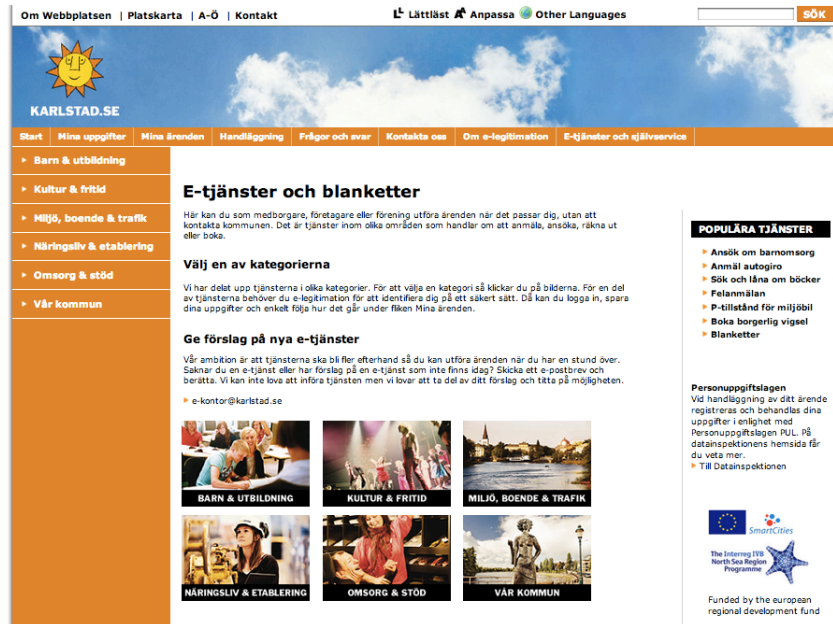
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Appendix



Screenshot from the e-Service start page (Karlstad, 2012)

Elements	Criteria	e-Service description	Compliance
Purpose	Customer	As a <i>citizen, company or association</i> you may perform your cases at your convenience, without contacting the municipality.	(+) Explicit customers
Context	Intention Relation		(-) Are e-Services not a part of the municipality?
	Value	<i>Our aim is that the amount of services will increase so you will be able to conduct business when you have a spare moment.</i>	(+) Explicit intention and value
	Action repertoire	<i>There are services in various areas related to register, apply, calculate or book.</i>	(+) Explicit type of e-Services (-) Lack of a direct link to e-Services
Actor	Service provider	<i>The municipality, the e-Office</i>	(+) Contact information in multiple channels (phone, mail, email)
	Co-producer	<i>The Data Inspection Board</i>	(0) No contact to/link
	User	<i>Citizen, company or association</i>	(0) Which services are directed to each target group? (0) No contact to/role of employees
Action	Actability	<i>Choose one of the categories: Children & Education, Culture & Leisure, Environment, Housing & Traffic, Industry & Establishment, Care & Support, Our Municipality</i>	(-) Is it possible with a uniformed action-, customer- or result oriented categorisation?
	Service catalogue		(-) In the e-Service <i>Suggestions</i> there are similar but also additional categories: Environment & Housing, Tourism & Conference, Politics & Influence,

	Interaction	<i>Give suggestions for new e-services</i>	Streets & Traffic, Other/Do not know (+) Possibility for customer co-design (0) e-Office only a "suggestion box"? Questions can be sent by the <i>FAQ</i>
Information	Clarity	E-services & Forms	(0) Relation e-Service & Form?
	Overview Placement	<i>We have divided the services into different categories... For some services you need an e-ID to identify yourself in a safe manner. Then you can log in, save your data and easily track the progress under the tab "My cases".</i>	(-) No overview of services or service catalogue on the start page. (+) Introduction to some of the tabs but (-) not all of them.
	Richness	<i>Then you can log in, save your data and easily track the progress under the tab "My cases".</i>	(-) Is the intention to use all services with a start from "My cases" or what kinds of services need this point of departure? (0) Not contextual based in relation to intended e-Services.
	Relation	<i>Do you miss an e-service or have suggestions for an e-service that does not exist today? Send an e-mail and tell us. We cannot promise to introduce the service, but we promise to examine your proposal and look at the possibility.</i>	(+) A request to customers (-) No answer is to be found nor a plan for upcoming services as a result of conducted co-design
	Secure Context	Privacy Act <i>In the handling of your case ...</i>	(+) Explicit pre-conditions (-) Not in connection with use
	Shortcut	Popular services <i>Apply for Child Care</i>	(+) A possible shortcut (0) More types of actions are identified sign, find, report, print...
	Result/ Significant value	<i>Apply for Direct Debit Find and Renew books Fault Reporting P-permit for Green Cars Book your Civil Ceremony Forms</i>	(+) Results can presage: account, book, and fault report, P-permit... (-) Results of e-Services not explicit

Evaluation matrix for the e-Service start page

About the Author

Marie-Therese Christiansson, PhD, Assistant Professor in Information Systems at Karlstad Business School, Karlstad University, Sweden. Her research interests cover Business Process Management in practice, business modelling, business process improvements and e-Service innovation. She has conducted research in public as well as private organisations from a change management perspective during 20 years. The collaboration with the e-Office in Karlstad municipality started in the Smart Cities project in 2009. Based on experiences in practice and her research, she has developed methods to support inter-organisational information systems development, a framework for a 'close-to-business' requirement specification in acquisition of component based information systems, as well as a lightweight process methodology to facilitate process orientation in practice. She is the founder of the PoP approach (Process Orientation in Practice), which is a network with a wide range of practitioners from various industries and organisations to promote knowledge sharing and co-producing PoP methods.