

Understanding the Advisory Needs of Citizens

Birgit Schenk¹, Gerhard Schwabe^{2}*

*¹Fachbereich Verwaltungsinformatik,
Hochschule für öffentliche Verwaltung Kehl
²Institut für Informatik, Universität Zürich
schenk@hs-kehl.de, schwabe@ifi.uzh.ch*

1 Introduction

For several years the public sector has experienced substantial changes. First the widespread use of the Internet and the e-government discussion led to an extended offer of information for each governmental level (federal, state, regional, local) of the public authorities and a broad offer of online applications. The recent discussion of citizen-centred e-government focuses on governmental services and resources tailored to the actual needs of users including citizens, residents, government employees and others. Secondly, New Public Management supported the perception of citizens being customers which resulted in major changes e.g. long opening hours, centralized citizen offices. Despite these improvements citizens still don't perceive public services as customer centred and helpful in all aspects of life especially in complex ones like having a baby or moving to another city. Strict division of labour, protection of data privacy and fragmented databases in the public sector encourage this perception. The work described in this article is the first step to a citizen-centred e-government application which combines online and offline components to generate an "all around" service including information, planning and organization. It focuses on the understanding of the need for citizen advisory.

To get insight and overview of the field of advisory as well as advisory, as well as advisory in public administration, we started with literature research (see 2.). Based on this, field research followed to gain further experience and knowledge (see 4.). Both steps lead to the results (see 5.) with design requirements for an information system supporting citizens' advisory in public administration.

* authors appear in alphabetical order; both have contributed equally to this paper

2 IT and Citizen Advisory

In the time before the Web, there were already citizens' advice bureaus in British local communities. It was their task to advise local citizens in claiming their benefits from the state (Citron 1989). As those benefits were paid by the central government, it was in the interest of the local administrations to give their citizens the best possible advice. In 1980 Whitaker (Whitaker 1989) had already analyzed the value of a solution "co-produced" by citizens and advisors. The coming of the Internet and the Web then led to a shift in the discussion by the middle of the 1990s. "Citizenship information" was the focus of research and practice (for an overview see (Steele1996)) as the actors were expecting dramatically improved access to relevant information over the Web. The state of the art was advanced by a better understanding of the structuring (e.g. in portals on a large scale (von Lucke 2008) and according to life circumstances) and of the organizational prerequisites of providing information over the Web. We are still seeing advances in the provision of citizenship information, mainly as a result of large government initiatives (like UK online, Deutschland online or e.gov in Austria). Ambitious governments (like in the UK or in Australia) claim that most of their services can now be accessed over the Web.

While "self-information" and "self-service" over the Web have been greatly enhanced in recent years, the quality of citizens' advisory services has not advanced at the same speed, although there have been important innovations: Citizens' advice bureaus integrate information and service provision in one physical location (Citron 1989) and provide "one face to the citizen". Innovative pilot schemes even promoted decentralized citizens' advice bureaus in rural areas that were linked to the central administration via collaborative technologies (Lenk, Klee-Kruse 2000). However as the necessary redesigning of the organizational structures and the administrative processes did not happen (Lenk 2002, Lenk, Klee-Kruse 2000) the citizens' advice bureaus are still ill-prepared to handle complex issues crossing organizational boundaries. Exclusive responsibilities of the public authorities and their governmental employees are still a barrier for citizens (Lenk 1995, Lenk 2004, Lenk 2005, Lenk 2007).

Some may argue that good electronic citizenship information and subsequent self services might replace good personal advisory services. However, research in information behaviour shows that there is a whole class of problems where the human advisory service is superior to electronic information provision for the foreseeable future. In some situations people cannot express their information needs effectively until they know what the possible answers look like and what terms are relevant in the first place. Belkin (1982) calls this problem an „anomalous state of knowledge“: The objective information needs, the needs expressed, and the information available only partially overlap. There are some information needs not expressed and therefore not satisfied. And even if they are expressed, they may not be available. It is typical for this situation to arise when a person moves from a

known context to a novel context. He/she may be able to express his/her situation but he/she may not be able to ask about a specific situation. Examples of such situations are moving to another city or country or a mother giving birth to her first child. Natural language information services offered by human advisors may increase the overlapping area in comparison to direct access to an information product because humans can be empathetic and proactive and can use the appropriate (im-)precision and richness of natural language to query, give feedback and ask for clarification. Note that this potentially richer information provision from human advisors still requires their sound knowledge.

Structuring the citizens' information according to "life circumstances" contributes to the solution of this problem, as it only requires the citizen to identify his or her current situation. However, those websites can again only describe a few standard life situations. The specific situation of a citizen may not be covered or may differ from the standard situation. In federal countries like Germany and Switzerland each public information source only covers at best one government level. Many public websites still mirror the public authority in bricks-and-mortar. Schedler/Proeller (2003) describe the situation of an information seeker with the word "public authorities rally" and this leads to a so called "website rally" (Brüggemeier et al. 2006), because he/she has to click on the various websites of each public authority to find some of the information needed. Access to information becomes even more inefficient if parts of the information require a personal login (Kitsing, Tacit 2008) or the usability of the website is poor (Bertot et al. 2008). As the structure and quality of web-based citizenship information varies between countries, states and communities and even subject areas, citizens have not yet developed a clear understanding of what information quality they can expect. Thus they do not know whether they can generally expect an appropriate information structure, and complete and correct information. Current web-based citizenship information is even less satisfactory for groups with special needs, e.g. groups lacking technical skills, or with language problems (e.g. if they do not understand legal terminology) (Bertot et al. 2008, Van Dijk, Hacker 2003). Thus there is still a widespread need for personal advisory services.

Research on information behaviour has developed models on how the advisor and the citizen interact and come to a good understanding and fulfilment of citizens' information needs. In their literature review Ellis et al. (2002) distinguish between pre-information seeking behaviour (where the user i.e. the citizen, becomes aware of his inadequate state of knowledge) and information seeking behaviour (where the user identifies the intermediary, and where the user and the advisor jointly formulate the question, search for information and evaluate it - these steps can be iterated several times) and a post information seeking behaviour (where the user evaluates and uses the information).

These research streams leave the issue open as to how advice is best provided by public advisors and how it can best be supported by information technology. Yet, the press and research literature is full of reports of failures in public advisory

practices (see e.g. Hielscher, Ochs 2009)). In the financial sectors a standardized advisory process is a key to a consistently high quality advisory service (Mogicato, Schwabe 2009). Most prominently (Swiss) banks have moved to standardized advisory processes. For example the four-step advisory process of UBS distinguishes the steps “Understand”, “Propose” “Agree & Implement” and “Review” (UBS). For each step the banks provide detailed guidelines for the advisors as to how to interact with the customer, what output each step provides and how it is created.

An analysis of the diffusion of IT into the actual advisory meetings leads to some surprising insights. Although the banking sector is traditionally a leader in IT usage and although there is a lot of research on IT-support for the advisory process, investment advisors hesitate to use computers in advisory meetings (Schwabe, Nussbaumer 2009). Reasons are a misinterpretation of the customers’ interests, principal-agency conflicts and poor usability of the tools. We are not aware of any systematic study of IT-use in citizen advisory. From reports on pilot studies (e.g. Lenk, Klee-Kruse 2000), one can conclude that IT is mainly used for accessing simple internal information during the advisory sessions, e.g. giving people way-finder information or forms and regulations. This information is neither complete, nor tailored to complex information needs nor does the use of the system create pleasure.

Thus we conclude from our literature review that, as in other service sectors (maybe even more so) there are complex information needs that currently appear not to be met by the public administration and there may be a potential for a modern IT support. However, there is a need for more evidence from the field to identify whether there is really a problem. If there is, we need to establish a deeper understanding of its causes and then we can come up with requirements for the design of a computer support for the advisory service. Thus this paper addresses the following research questions:

- 1. Is the citizen advisory service in complex circumstances satisfactory? If not - where are the problems?
- 2. What are the causes of these problems?
- 3. Which requirements for IT-support can be derived from problems and causes?

The next section will introduce our methodology and data collection, before we turn to the results.

3 Methodology and Data Collection

The work described in this paper is part of a larger research project on cooperative advisory services in public administration. The ultimate objective is the designing of a prototype for a cooperative advisory service. In design oriented research, generic requirements have a similar role for designers as theories and frameworks have for behavioural researchers. As Hevner et al (2004) point out,

such design foundations are a viable contribution to IS research. We choose the method of scenario-based development (Rosson, Carroll 2002) and the scenario “Having a baby”. Parents expecting their first child have a lot of questions in mind based on the as yet unknown experience. For questions concerning birth and child care, their counselling partners are doctors and midwives, as well as employees at counselling centres for pregnancy matters etc.

Scenario based design emphasizes understanding the users’ needs. A deeper knowledge of individuals’ behaviour within a smaller population is more important than broad statistically significant data gained through the sampling of a large population, yet delivers a limited depth of understanding.

The data collection took place in two major steps and was ethnologically inspired and exploratory. Step-1 helped to get a first insight in the needs, wishes, and perceptions of the citizens coping with the situation of having a baby. Step 2 focused on a deeper insight of the needs, wishes and perceptions of citizens and their understanding of them through the governmental employees.

In Germany there is a so called “Bürgerservice” (citizens’ service centre) in each municipality where citizens can address their questions via telephone, personal advisory centres or via the Internet (email or webpages). In step 1 we have chosen two ways of getting information based on the scenario which was evaluated by women expecting their first child: personal advice via telephone calls and personal advisory centres. We started with phone calls to the public service in 14 municipalities in Southern Germany. This was followed by mystery shopping (Van der Wiele et al. 2005). Three researchers visited 18 public services in 17 municipalities. The Mystery Shopping was structured according to the dimensions of the Needs Driven Approach (Schwabe, Krcmar 1995). The first two shoppings were made by a woman who had given birth to her first child a month before accompanied by a researcher. The subsequent mystery shoppings were made by a female researcher and 4 female students following the pattern observed in the first two episodes.

Step 2 was necessary to verify and broaden the findings of step 1. The specific questions asked were influenced by the first step and will be introduced in the description of the results of step 2. In this second step two workshops were held. Ten citizens from the city of Sindelfingen and four citizens from Ditzingen took part. All were expecting a child or had just given birth. Each workshop lasted 120 minutes. In a third workshop we selected 9 government employees from the city of Sindelfingen responsible for different aspects of advice. They answered pre-tated questions and discussed their impressions for 105 minutes. In all three workshops GroupSystems was used to collect data. The second step was necessary to verify and enlarge the findings of step 1. The specific questions asked were influenced by the first step and will be introduced in the results description of step 2.

The workshop with employees added their perspective concerning different aspects of advisory services as well as the different themes they have to cover, the perception of citizens and their needs/wishes, the assessment of further development within the administration as well as design wishes for an advisory manage-

ment system. The gap analysis of citizens and advisors combined core parts of the Servqual model (Zeithaml et al. 1990) on service management and information behaviour variables from Wilson's model (1997).

4 Results

4.1 Mystery Calling and Mystery Shopping

Step 1 started with *mystery calling*. The conversation started with the statement: "I'm pregnant, due in August. I need information about what has to be done regarding legal aspects and what governmental financial and other support is granted by public authorities".

Fourteen calls were made. Two ended without any result because the chosen numbers led to answering machines. Three calls ended after 3 minutes. The answer was more or less "Oh, these questions are hard to answer. I don't know. Maybe you should visit our website or come to us after the child is born." Two of the fourteen calls were answered with the information that we should ring after the child was born. However the mystery caller had specifically asked to receive information now. The rationale of the public agents obviously was to advise as to when there is an optimal amount of certain information available. From the point of view of the agents this is efficient. We interpret these as the agents' *uncertainty avoidance*. In combination with conflicting preferences of the citizen, this leads to *advisory synchronization problems (P1)*.

Two calls were very informative and efficient. In about 10 minutes the employees helped to create a checklist including where to get application forms for financial support and advice, how to fill them in (state, regional, local), what to do if a passport is needed for the baby, how to change the tax level, etc. Thus, good advice is possible, but it currently solely depends on the knowledge of the public servant. Thus citizens face a problem of *high variance in service quality (P2)*.

Four agents made the mystery caller an offer to come and pick up application forms for financial support for parents and financial support for children. However they were not responsible for further information about these forms because these forms are issued by the State bank (Landesbank Karlsruhe) and the District Council (Landratsamt). In five out of fourteen phone calls agents stated that after the birth of the child the civil registry office needs to be informed. This multiple referral to different authorities indicates a *fragmentation of the advisory services (P3)* and a *lack of responsibility recognized by the agents (P4)*.

The agents reacted differently to their inability to provide services. The majority demonstrated social competence and apologized for not being able to help. Only in six cases did the employees signal that this kind of question annoyed them. One expressed it thus: "We are not responsible for this, go to the District Council and the "Familienkasse". In none of the calls, could the mystery caller identify a

structured advisory process. Given the fact that the question was beyond the scope of most of the agents, this is not surprising. However, even in these situations a structured process could have helped to identify the issues more specifically. Thus telephone advisory services *lack structured processes (P5)*.

To summarize: Mystery calling confirmed four problems (*high variance in service quality, fragmentation of the advisory services and a lack of responsibility recognized by the agents as well as a lack of structured processes*) that have support in our literature analysis but also revealed one new problem (*advisory synchronization*).

Mystery shopping supported many of our initial observations. In addition we had insight into the material used, surroundings and atmosphere. The conversation followed the same pattern. After greeting us with a “Hello” the employee simply waited for us to address our questions. The expectations and needs as well as the situation of the citizen were neither explored nor documented. Regarding the conversation, the service centres gave a negative impression. The mystery shoppers had to cope with professionally incompetent, murmuring or monologising employees. In seven centres they were dismissed quickly with no satisfactory result after 3 to 5 minutes. Only in one case did the employee ask a lot of questions and try to find out who could give more information, where to go next and what to do. In general, no precise information or solutions were offered. Normally information was given as to where responsibility lay for answering questions (Standesamt, Landratsamt, Landesbank, Jugendamt) and that they might have application forms. Three clients got nothing but a hint to come back after the child was delivered. In seven cases the shoppers got application forms for financial support for parents and for financial support for children. Cross-selling was an aspect in 7 out of 18 cases. The shoppers were advised to go to the adult education centre, to look at the website and to look for information in family counselling centres. None of the advisory sessions was comprehensive or complete (for example parenthood has tax consequences). Thus we found additional support *for a lack of structured processes (P5)*.

But insufficient advisory services are caused by insufficient organization, too. “Incidents”, where a citizen has a quick specific question or needs a form, are not separated from “problems”, where the citizen needs deeper advisory. If there is a lot of traffic in the administration, problems cannot be solved because urgent incidents are waiting. And even if there is no other person waiting, the advisor has to structure the session in such a way that he can terminate it within a short time when a new citizen arrives. Thus there is a *lack of facilities for problem management (P6)*, such as specific appointments or time reserved for problem management. Also, specific places for problem management are lacking. In one case the employee called his colleague at the other end of the room telling him, that he needed help to answer the questions of an unmarried man whose girlfriend was pregnant and who needed to know what financial support could be applied for. Everybody present then knew about the situation of this one “citizen”. In 12 out of 18 cases there was no privacy offered. The conversation took place in a big hall where one desk stood beside the next desk with hardly any distance between, so that one could overhear

the conversation of the next citizen. The shoppers didn't feel comfortable with this.

The written information given e.g. brochures, leaflets, was very complex and difficult to understand. In 10 brochures information varied only little, but we had to go through all of them to get the whole picture. None of them offered all the necessary information. The employees simply handed the written information to the shoppers. They didn't use them in the conversation with the shoppers to explain or show them something. When the shoppers were sent to another place they had to tell their whole story a second or third time, because no data had been collected and passed to the next employee. Thus we observed a *lack of integration* (P7), a *lack of personalization* (P8) and an *information overload* (P9) as problems for the citizen.

IT was used only to look up the citizens' personal registration information. Although ten out of 18 administrators had access to sufficient information about citizens' regulations and benefits on their city's website none of them used this information. We asked the advisors of Sindelfingen in the workshops later on, why they did not use the website. They stated that they did not know this information existed. Thus we conclude that there is a *lack of awareness of IT-resources* (P10) and a *lack of usage of IT-support* (P11). The information on the Website is intended for self-service, not for advisory purposes. None of the advisors used specialized advisory tools, such as (electronic) checklists or forms.

To summarize: Mystery shopping confirmed problems already known (most important: *lack of structured processes*) but also revealed new problems (*a lack of facilities for problem management, lack of integration, a lack of personalization, information overload, lack of awareness of IT-resources and a lack of usage of IT-support*).

4.2 Workshops

After gaining a good understanding on advisory issues from the customers' perspective, the second step focussed on the current information behaviour and the citizens' expectations. The citizens were asked in their workshops:

- (1) what information they perceived as important and which information sources they used
- (2) how they evaluated the quality of the different information sources, e.g. how comprehensive or efficient they were.
- (3) what functions a support system for them should have and how it should be designed.

The members of the administration received the same set of questions on the evaluation of information sources and support functionality. In the spirit of the Servqual model, they were not asked about their perception but rather about how they saw the citizens' expectations. In addition, they were asked which topics they advised citizens on.

ad (1) Three kinds of information are of interest to parents: Information about financial support as well as legal obligations, information about municipal offers for expectant parents and for parents in general which varies from child care to the possibility of networking with other parents and medical information about pregnancy, birth and baby care.

The most important one was information about financial support. Are there offers of governmental financial support? Are there other beneficial offers for parents? Does my situation match the requirements for an application? Where can I apply for it? Where can I get the application forms and who will help me to fill them in? Regarding municipal offers, the expectant parents asked questions like: To whom in the municipal administration can I go to to get my questions answered? Are there additional offers for families (second-hand markets for baby clothes etc.) When do I have to apply for a place at Kindergarten or for child care? Which is the best Kindergarten/place? Where can I meet other parents? Where can I go if we have family- related problems?

The majority of the expectant parents stated that their need for medical infor-

Table 1: information sources in the order of frequency of use, n=13

Information source	Mean	Variance
Family, friends etc.	2,46	2,22
Professionals like doctors, hospitals etc.	3,38	1,19
Professional information on the internet	4,00	2,20
Guide books and other Books	4,00	2,48
User-generated information on the internet	5,56	2,79
Media such as television, broadcasting, press etc.	5,62	1,89
Public authorities	6,38	2,22
Social organizations like counselling centres, clubs	7,31	2,1
Employer	7,92	2,29
Other information sources	8,46	2,47

mation was sufficiently covered by other sources. As both the information on the financial consequences of birth and municipal offers can best be provided by the administration, we conclude: There is a need for birth-related information from the administration (lack of advice P12).

ad (2) After the collection of the information sources they used, they had to put them in order according to the frequency of their use. Table 2 shows the re-

sult.

The most important information sources are the close personal network of family and friends. Three sources of professional information follow: personal advice from doctors or the hospital, professional information on the internet and books on the topic. Public authorities rank 7th after user generated content on the internet and the media. Only social organizations, the employer and “Other infor-

mation sources” are less important. Thus we conclude: Information from *public advisory services is comparatively seldom used (P13)*.

The quality of the information received from the administration explains the low frequency of use: The information is difficult to understand. On a scale from 1= not at all to 7 = very good, the citizens rated the comprehensibility of the information given by family and friends to be almost very good (6.3). On the other hand, official websites were rated 4.8 and advisory services within the administration 3.0 (on a scale from 1= not at all to 7= very good)! Obviously, the personalized information at the administration is far more difficult to understand than the standardized information on the web. However, the participants pointed out that better comprehension comes with a price: Each person in the personal network has had different experiences and everybody gives out different information. Not all information is reliable. Thus, the personal network is a very comprehensible and efficient information source, but its use may not be effective and information may be outdated. On the other hand, the Internet is regarded as more reliable, less comprehensible than friends, but its use can be inefficient. One participant called it “very time intensive”. Another participant pointed out: “My frequent Internet usage does not say how well I’m coping nor how long I need to find something of use. If I really need to know something important, I ask a person.” Thus it is no surprise that the citizens agreed to the statement that the public advisory services are inefficient (5.8, 1= complete disagreement, 7 = complete agreement). Another participant explicitly quoted what has become known as Belkin’s ‘anomalous state of knowledge’: “How do I know what I have to look for? I have no idea [...]”.

Printed guidebooks can be good, but there are too many of them and all covering only partial aspects. And another participant voiced concern whether they are really up-to-date. Thus no alternative to advisory services within the public administration really fulfils all the citizens’ needs. However, in their current state, public advisory services are neither comprehensible nor efficient nor effective. Thus we conclude: 1) *No one current information source provides a satisfying information quality.* 2) *There is a need for personal advice.*

The members of the public administration were not fully aware of the citizens’ problems. They expected the citizens to rate their services as comprehensible and efficient. On a scale from 1= not at all to 7 = very good, the comprehensiveness of authorities was rated at 3.0 by citizens and 4.7 by employees. On a scale from 1= very low to 7 = very high, the necessity to invest a lot of time (inefficiency) was rated high by citizens at 5.8 and low by employees at 3.43. On the other hand the members of the public administration confirmed some of our observations. When they were asked about possibilities to improve advice and advisory processes, they pointed out that cooperation between different departments within one authority and also cross-organizational cooperation should be increased to avoid citizens having to come to the administration many times and to avoid citizens having to fill in the same information in multiple forms. Thus the customers had perceived a *lack of comprehensiveness of advisory services (P14)* and *high individual time investment (P15)*.

ad (3) To what extent can IT contribute to a better advisory system? Here the perceptions of the administration differed significantly from the citizens.

The workshop participants (citizens and advisors!) were asked to rate their agreement with the following statements on IT use on a scale from 1= I strongly disagree to 7 = I strongly agree:

a) IT-based information access: I expect that in very good advisory sessions up to date information is used and the corresponding IT systems are used.

b) Process support: I expect that in a very good administration, IT systems are used to support the execution of a process in order to improve advisory sessions (e.g. checklists).

c) Decision support: I expect that in very good advisory sessions IT systems are used that allow for simulating and visualizing complex options, e.g. by taking life circumstances and events into account.

Citizens rated information access at 5.42 (advisors: 4), process support at 5.25 (advisors 3.86) and decision support at 5.83 (advisors; 3.29). This indicates that employees cannot anticipate the expectations of the citizens (their customers!). Thus there is a *lack of understanding of the citizens' needs and expectations on IT support by members of the administration (P16)*.

Is there an objective need for IT-support? The agents were asked about the different cases they have to handle. The result was astonishing: a citizen advisor has to answer questions about 25 cases varying from gun law, right of residence, passport applications to simple registration of residents. This explains why they can't have detailed knowledge of each subject. The variety of products offered by public authorities is so broad that they need IT-support. This is even more the case if the advisory services become more comprehensive.

Asked about their wishes concerning information and advice in citizen service centres, the citizens came up with the following vision. They wanted to have one department for family matters where they could get all the information they needed and which offered personalized advice. One citizen added that he would appreciate house calls by the employee to advise them at home. They expressed the wish to be linked to people like doctors, midwives, and any necessary advisors, so that they could contact them more easily. In addition, they wanted to have a personalized log-in on an official website (offered by the local, regional or state administration) where they could find all the information needed for their special aspect of life such as to-do lists, link lists, a calendar with all the appointments to be met (e.g. what to do in the 7th month of pregnancy) and forms which have to be filled in. Regular advertisements of offers, changes of legal aspects in print and online would be welcomed.

Thus we noticed that there is *a need of (1) one-stop government, (2) an information system to support citizens' advisory services throughout the whole process: before, during, and after personal advice.*

5 Requirements

The problems observed lead to a set of requirements for advisory support in advisory services for citizens (Table 2). An advisory approach must not only fulfil requirements on information provision, but also requires changes in the organizational structures at all levels and in the advisory process.

Citizens' problems and life situations (such as being pregnant) frequently cross administrative boundaries. Our observations further support the need for an integration of information and processes and (!) advisory services together at one face to the customer. We call this *one-stop-advisory service*. As we showed in our literature review, researchers have long called for an integration of information and processes, but as we see in our study, many efforts of the public administrations have led to window-dressing rather than real integration. The creation of integrated advisory workplaces does not only require organizational integration, but may also advance it in a positive feedback loop: if public advisors are responsible for giving

integrated advice to the citizens, they may gradually push for increasing integration of their back-end processes. At an advanced stage, the advisor may become process owner for most citizens' problems. Integrated advisory services also support the comprehension of information because citizens can directly ask for explanations.

A one-stop-advisory service requires a sufficient organizational and physical set-up *separating incidents from problems*. Incidents can be handled at the information point and problems can be handled in a separate

Table 2: Requirements

Requirements	Problems
Organizational Requirements	
Provide one stop advisory	P7, P14, P13
Separate incidents from problems	P6
Process Requirements	
Start advisory process when "being pregnant" instead of after "baby is born"	P1, P3, P4
Provide standardized, but customizable process	P2, P5, P15
Include support to elicit the citizens' implicit needs	P4, P12
Train IT-enable advisory work practice	P10, P11
Information and IT Requirements	
Integrate advisory process with offline and online information resources	P8, P9
Preserve citizens' information, if he/she agrees.	P7, P6
Integrate local, regional, state and federal information	P7
Integrate internal and external information.	P7
Improve comprehensiveness of information	P14
Provide useful, easy to use, transparent and fun support	P11, P16

advisory area by experts in that particular situation of the citizen. In addition this provides competent advice as well as privacy.

The process itself should be structured according to the needs of the citizens rather than to the needs of the administration. This requires the process to *start when the woman is pregnant rather than when the baby is born*. It is emotionally and rationally understandable that pregnant women want to be prepared before the baby arrives so that she is able to devote all her time to the baby once it is born. The need for early advice may lead to a redesigning of some services. Some services may already be made available for the pregnant women (such as new public housing), other services (such as notification of social welfare benefits) may be prepared in advance and ready at the time of birth. As we have argued in the literature section, *standardized processes* lead to an improvement of service quality and a reduction of its variances. The current improvised advisory service is clearly insufficient. Although citizens currently rely mainly on other information sources, the few necessary contacts with the public administration are still regarded as inefficient. Standardized processes could be based on guidelines of the conversation process and checklists with questions to elicit citizens' needs.

As citizens' needs vary, the one-size-fits-all process is not sufficient but the process should rather be *customizable*. Similar to a scheme in insurance advisory services (Schwabe et al. 2006), we propose that the advisor and the citizens should agree on a customized process in the introduction based on the citizens' life circumstances, his/her prior knowledge and his/her process preferences.

Human advice is most valuable to citizens, when they do not yet know what information they need. The advisors need to have communication skills to elicit those needs. A *dedicated needs elicitation process phase* is required for more complex implicit needs. Good IT-tools can support this process, but this support, as well as any other advisory support, must be embedded in the advisory process. This requires *the training of new IT-enabled advisory work practices* rather than that of tool functionalities.

Our analysis of IT-related matters primarily points toward *information integration needs*. As the professional and the user generated content provides very useful information sources they should be integrated into the advisory process. For example, Google maps could be used to discuss all location related issues (e.g. where are the Kindergarten?). The integration of information from non-government sources requires careful expectancy management by the advisor: The citizen cannot rely on all the information to be complete or correct. A good solution for each important issue could be a package of official information (quality-assured, but general and difficult to understand) and information from other sources (not quality-assured, but personalized and easy to understand).

We were most astonished that hardly any of the advisors we observed knew the state portal on life circumstances. This portal integrates some information from the State and the federal government. We suspect that there are two major reasons for the non-usage: *Lack of integration of IT-use in the advisory process* and the

image of IT in the public sector. The integration of IT and different information sources (online and offline) into an advisors' work is primarily an issue of process designing and training (see above). The non-adoption of existing valuable sources may also be a problem of the image: The IT used in public administration mainly consists of old-fashioned transaction systems and bureaucratic information systems. Even official information on the internet does not fit to this mindset. IT, as perceived in their daily work, seems to be inapt in contributing to advisory processes and has nothing to do with the useful and entertaining IT that they are accustomed to from their private Internet use (e.g. with face-book). Advisory research in the tourism sector indicates that *tools should provide useful, easy to use, transparent and fun support* (Novak, Schwabe 2009). At a minimum, such a support lessens the advisors' anxiety of failing in front of the citizen, a major reason, why banking advisors resist IT use during the advisory session (Schwabe, Nussbaumer 2009).

6 Conclusions and further work

This paper presents an in-depth analysis of problems which pregnant women face when seeking advice in the public administration sector. Public administration offices are currently ill-prepared to provide adequate advisory services. The primary reason is the lack of adequate processes. Adequate processes then require the integration of currently disjunct administrative responsibilities and adequate IT support. Public administration has stayed remarkably stable in the face of a changing environment – maybe too stable, if we look at the quality of the service in this area. Pilot projects are needed in this area, because examples of best practices are particularly powerful change mechanisms. These pilot projects should develop appropriate processes and IT-systems and demonstrate their benefit to the citizens and the public administration. They would then allow IS-researchers to have a better understanding of how to design socio-technical systems that elicit hidden needs and co-create personalized solutions.

References

- Bertot, JC, Jaeger, PT, McClure, CR (2008) Citizen-Centered E-Government Services: Benefits, Costs, and Research Needs. The Proceedings of the 9th Annual International Digital Government Research Conference, 137-142. Montreal, Canada, May 18-21.
- Belkin, N J, Oddy, R, Brooks, H (1982) Ask for information retrieval. Part 1: Background and theory. *Journal of Documentation*, 38, 61–71.

- Brüggemeier, M; Dovifat, A; Kubisch D; Lenk, K; Reichard, Ch; Siegfried, T (2006) Organisatorische Gestaltungspotenziale durch Electronic Government: Auf dem Weg zur vernetzten Verwaltung. Band 8. In der Reihe: Lenk, K.; Brüggemeier, M.; Reichard, Ch.: E-Government und die Erneuerung des öffentlichen Sektors. Edition sigma, Berlin.
- Citron, J (1989) *The Citizens' Advice Bureaux: For the Community by the Community*, Pluto Press.
- Deutschland online: www.deutschland-online.de
- e.gov in Austria: <http://www.australia.gov.au/>
- Ellis, D; Wilson TD; Ford, N; Foster, A; Lam HM, Burton, R; Spink, A (2002) Information Seeking and Mediated Searching. Part 5. User-Intermediary Interaction. In: *Journal of the American Society for Information Science and Technology*, 11, 883-893.
- GroupSystems: <http://www.groupsystems.com>
- Hevner, A. et al (2004) Design Science in Information Systems Research. *MIS Quarterly*, 28 (1), pp. 75-1505
- Hielscher, V; Ochs, P (2009). Arbeitslose als Kunden?: Beratungsgespräche in der Arbeitsvermittlung zwischen Druck und Dialog. Band 32, *Modernisierung des öffentlichen Sektors*. Edition sigma.
- Kitsing, M (2008) Tacit Web: A Look at the Digital Divide Below the Tip of the Iceberg. Annual Meeting of the American Political Science Association, August 28-31.
http://www.allacademic.com//meta/p_mla_apa_research_citation/2/8/0/1/5/pages280158/p280158-1.php April 24th 2009..
- Lenk, K (1995) „Business Process Re-Engineering“: Sind die Ansätze der Privatwirtschaft auf die öffentliche Verwaltung übertragbar? In: Traummüller, R (Hrsg.), *Geschäftsprozesse in öffentlichen Verwaltungen. Neugestaltung mit Informationstechnik*. Heidelberg, 27-43.
- Lenk, K (2002) Elektronische Bürgerdienste im Flächenland als staatlich-kommunale Gemeinschaftsaufgabe. In: *Verwaltung & Management* 8, Heft 1.
- Lenk, K (2004) *Der Staat am Draht. Electronic Government und die Zukunft der öffentlichen Verwaltung – eine Einführung*. Berlin: edition sigma.
- Lenk, K (2005) Vielfalt der Geschäftsprozesse in der öffentlichen Verwaltung. In: Klischewski R, Wimmer M (editor), *Wissensbasiertes Prozessmanagement im E-Government*, Muenster: LIT-Verlag, 43-55.
- Lenk, K (2007) Bürokratieabbau durch E-Government. Handlungsempfehlungen zur Verwaltungsmodernisierung für Nordrhein-Westfalen auf der Grundlage

- von Entwicklungen und Erfahrungen in den Niederlanden. Informationsbüro d-NRW.
- Lenk, K; Klee-Kruse, G (2000) Multifunktionale Serviceläden. Ein Modellkonzept für die öffentliche Verwaltung im Internet-Zeitalter. Berlin.
- Lenk, K; Traunmüller, R (2001) Broadening the concept of Electronic Government. In: Priens, J (editor): *Designing E-Government – On the Crossroads of Technological Innovation and Institutional Change*, 63-74.
- Mogicato, R; Schwabe, G (2009) Beratungsqualität in Banken. Was der Kunde erwartet. Was der Kunde erlebt. Solution Providers, Duebendorf, Switzerland.
- Novak, J; Schwabe, G (2009) Designing for Re-intermediation in the Offline World. In: *EM- Elec-tronic Markets*, Vol. 19 (1), 15-29.
- Prestipino, M; Schwabe, G (2005) Tourismus-Communities als Informationssysteme, 7. Internationale Tagung Wirtschaftsinformatik.
- Rosson, MB; Carroll, JM (2002) *Usability Engineering: Scenario-Based Development of Human Computer Interaction (Interactive Technologies)*, Academic Press.
- Schedler K, Proeller, I (2003) *New Public Management*, 2. Auflage, Bern etc.
- Schwabe, G; Gerber, M; Bühner, N (2006) Beratungsqualitaet in der Versicherungsbranche. Solution Providers, Duebendorf, Switzerland.
- Schwabe, G, Krcmar, H (1996) *Der Needs Driven Approach - Eine Methode zur Gestaltung von Telekooperation: Herausforderung der Telekooperation - Proceedings der DCSCW*. Berlin, Heidelberg.
- Schwabe, G; Nussbaumer, P (2009) Why IT is not being used for financial Advisory. In: Newell, S; Whitley, E; Pouloudi, N; Wareham, J; Mathaissen, L (2009). *Information Systems in a globalizing world*, Proceedings of 17th European Conference on Information Systems.
- Steele, J (1996) *Information for Citizenship in Europe*, Policy Studies Institute, London.
- UBS:
http://www.ubs.com/1/e/ubs_ch/wealth_management_switzerland/relationship/advisory_approach.html, Abruf am 2009-07-22
- UK online: www.direct.gov.uk
- Van der Wiele, T; Hesselink, M; Van Iwaarden, J (2005) Mystery shopping: A tool to develop insight into customer service provision. In: *Total Quality Management & Business Excellence*, Volume 16, Issue 4, pp. 529 – 541.

- Van Dijk, J; Hacker, K (2003) "The Digital Divide as a Complex and Dynamic Phenomenon". *The Information Society* 19, 315-326.
- von Lucke, J (2008) *Hochleistungsportale für die öffentliche Verwaltung*, Forschungsbericht, zugleich Habilitationsschrift an der Deutschen Hochschule für Verwaltungswissenschaften Speyer, Reihe Wirtschaftsinformatik, Eule-Verlag, Lohmar.
- Whitaker, G (1980) Coproduction: Citizens participation in Service delivery, *Public administration review*, Vol. 40, No.3, 240-246.
- Wilson, TD (1997) Information Behaviour: An interdisciplinary perspective. *Information Pro-cessing and Management* Vol. 33 (4), 551-572.
- Zeithaml, VA, Parasuraman, A, Berry, LL (1990) *Delivering quality service*. New York: Free Press.