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Information and Citizenship in Germany

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Information and communication technology for citizenship information in Europe

This chapter will first sketch a rough picture of the current use of communication technology for citizenship information. Then some innovative technology for citizenship information is presented. From these examples and further research key determinants in the use of communication technologies and future trends in information technology and citizenship information services in Germany are deducted. Some ideas for opportunities for the information industry end the chapter and the paper.

** based on the German situation, but enhanced by the situation in Norway, Great Britain, Ireland, Portugal, the Netherlands and the European Commission as reported in [Steele 1996].

Communications technology and citizenship information services - the current picture

Most citizenship information in Germany is presented without communication technology support. Citizens get their information by asking friends [Lenk 1990], directly asking administration officials or using one of the many information brochures. Up to now the telephone is the only widely used communication technology. More advanced but less frequently used is the videotext system BTX. Databases contain a lot of very specific information, but are little used by the ordinary citizen, because he is charged for the queries.

Telephone services: The telephone is mostly being used as a general communication medium for citizenship information. However there are also specific information services that add value to the normal telephone service. In Norway an electronic register stores information on car debts (in Norway the debt goes with the car and not with the person). Citizens phone into this systems and pay a small fee to receive the information on the total debt on a given car. This system is the most successful technology based Norwegian citizenship information system, because it has a clear benefit for the citizen's day-to-day life. The German Sozial Info Telephone is a private nonprofit organization providing guidance information on social matters over a toll free telephone line. Information is offered about more than 100.000 public and private nonprofit social organizations and their special expertise for any region in Germany. Those communities and organizations that fund Sozial Info Telephone are covered in more depth than others. Sozial Info sees its particular value in translating fuzzy descriptions of a problem into specific requests for help that can be fulfilled by some nonprofit organization. A lot of effort goes into keeping the information up to date. If a request for information cannot be satisfied with information from the Sozial Info database, Sozial Info starts an investigation and calls back the person.

Videotext (BTX): When the German Videotext system was originally introduced, the German Telecom expected that citizens would use information from administration such as the dates of council meetings or local decrees [Deutsche Bundespost 1977 p. 17]. Beginning in early 1980s many local administrations and some central administrations¹ put citizenship information on BTX - the German Videotext System. The example of Stuttgart may illustrate a system that was canceled after two years, the example of Berlin illustrates a system that has been operating for more than a decade and has grown to a large information system.

The example of Stuttgart is based on a telephone interview with the Stuttgart press office on February 25th 1995. Stuttgart offered citizenship information in the years 1990 - 1991. The information ranged from an electronic version of the official city newspaper (Amtsblatt), over content information on housing subsidy and students support (BAFÖG) to detailed overview information where a citizen could find what services and when the administrations were open. The user could search for information using a keyword feature and electronically order further written information. It was however not possible to interactively calculate benefits. In the final stage the information covered 1200 pages and was used in 600 calls per month. However the project was canceled in 1991 by the city council for two reasons:

1. The system cost the city 50.000 DM per year. This was much too expensive for the amount of usage.
2. The system was used by the wrong users. The city of Stuttgart intended to provide citizenship information to their own citizens. The system was however mainly used by people outside Stuttgart - e.g. from northern Germany. These users became expensive as they also ordered large amounts of written information. The most successful areas in the Stuttgart BTX-project were not citizenship information but the flight and train schedules.

The main problem with BTX seems to be the low acceptance rate of the BTX-service in Germany. There were only about 40.000 households connected to BTX in 1990, so the small numbers of Stuttgart citizens did not make the efforts worth while. Furthermore the system had a poor character based interface, an awkward tree structure for information content, and the user terminals were only connected over 1200 Baud modems. By 1992 the acceptance rate of BTX was still so low that it was considered a failure by many authors (e.g. Seeger [1992], Kubicek [1993b]). However in a large marketing offensive BTX has gained a more widespread acceptance (700.000 user in the beginning of 1995 [Spiegel Spezial 1995 p. 83, Zeit 1995 p. 102]) but is still far from being an exhaustive service. Furthermore the Internet threatens to pass the BTX in user acceptance.

¹ e.g. the federal press and information office.

There are still cities active in supplying citizenship information via BTX - most of them concentrate on tourist information. In Berlin the administration already planned to offer BTX-services to their citizens in the early 1980s [Loyson-Semering, 1984]. There is a central BTX-office and citizens can access information in public BTX-terminals in their local district administrations and at home [Brücker-Gärtner 1994, Engel 1991]. After some enthusiasm in the beginning, the Berlin BTX was questioned when BTX appeared to become a failure in the beginning of the 1990s. The system support was reduced. As BTX is currently regarded as a success, the Berlin BTX citizen information system has stabilized, too. In 1995 the system contains 12.000 BTX-information pages.

The following sections briefly give an overview over the information content, the structure, the target groups, and some usage statistics.

The general system contains information on:

- general administrative matters,
- social matters,
- construction, housing and environment,
- business, finance,
- culture,
- sports and leisure,
- others.

On each item the information is structured into six parts:

- content,
- legal basis
- prerequisites/ needed document
- forms/information material
- special advice
- place to go, office hours.

Special information systems provide further in-depth information. The includes:

- information on civil, social and political entitlements and responsibilities such as income support, housing subsidy, study support (BAFÖG), disaster control and military service;
- information for democratic participation such as public planning information, reports, summaries of the public household and discussion groups on the unification of the states Brandenburg and Berlin;
- general and day-to-day information such as environmental information and consumer information incl. a small electronic market on used household goods.

Information can be sought either over hierarchical menus or with key-words.

The Berlin BTX-service reaches four target groups:

1. Young Berlin citizens below 40 years old: These citizens belong to a generation that has grown up with the computer. The value the service and the administration may even improve its image by electronically providing information.
2. Citizen advisers: The citizens advisers in the districts (i.e. local administrations) of Berlin are frequent users of the system. They translate a visiting citizens concern into a search for information, query the system and give the result to the citizen. They also provide 'guiding help in all life situations' in answering citizens' questions that arrive over BTX-EMail.
3. Handicapped: Handicapped users have more trouble approaching an administration than ordinary citizens. They particularly value the (EMail-) communication features. They have already have requested the administration to enter handicapped specific information (e.g. on special stairs for wheel chair).
4. Citizens outside Berlin and even outside Germany: As in Stuttgart, the BTX-service is not only used by the Berlin citizen, but 40% of all users come from outside Berlin. In contrast to the Stuttgart administration, Berlin regards this wide distribution of information as a benefit, because it is regarded beneficial for the city image.

The Berlin BTX service has been accessed 8.000-16.000 times per month creating a total demand of 180.000 -200.000 pages per month in the first half of 1995. The users access BTX information in the following order of frequency : 1. Official newspaper (Amtsblatt), because they contain the job vacancies in the public administrations and call for bids on public building projects 2. environment 3. culture and leisure 4. housing 5. Social issues. I can be argued that information on social issues is least frequently accessed because few socially weak persons have a private BTX- terminal. The Berlin BTX-editors stress that the package as a whole is important - including the less frequently used information. Taking out less frequently asked parts would endanger the image of a comprehensive service.

Information Databases: In the 1970s, the German government launched the large information and documentation program IuD. The IuD-program aimed at bringing the knowledge of the world to the citizen [Stroetmann and Schwuchow 1992]. The program has only been a partial success, because it was too ambitious and the acceptance of databases was low in the German public. However the databases still exist and some contain citizenship information. For example a lot of information on health can be found in the DIMDI-Database.

Strategic importance of electronic citizenship information

In Germany there is no general policy on citizenship information. Therefore a strategic role for information provision can also not be recognized. In contrast the European Commission stresses the importance of citizenship information, because the Commission regards it as an important step to an involvement of European citizens into the European unification process and ultimately as a condition sine qua non to the success of the European unification efforts. In 1994 the European Commission has established a policy on citizenship information based on the principles of "Information, Communication and Openness". Information and Communication aims at overcoming the fragmentation of information. Information provision should be based on the citizens demand and be provided in a user-friendly manner. The work of the Commission (particularly DG X) is restructured to implement the policy. Openness is implemented with an open document policy.

An important role of new information technology is recognized as part of the overall information and communication strategy: "The European public's main information sources have shifted from the written word to the audiovisual and electronic media. The Commission must therefore seek not only to further improve its publications but also to exploit the possibilities offered by newer forms of communication" [Pinheiro 1994 p. 10].

Innovative technology and citizenship information services

Technological opportunities appear to be the most important driving force to better citizenship information. In this section the Citizens' bureau in Unna will be discussed first. It was developed in the 1980s and is the classical administrative innovation that is widely discussed in the scientific literature and newspapers. Afterwards a new model of a 'citizens' bureau' for rural areas is presented. As in Unna the local administration is the core of the system. The Magdeburg citizenship information system presented next is interesting, because it tries to be userfriendly by following a knowledge based approach. The citizenship information system in Bremen, World Wide Web servers in German University cities and the 'citizens network' in Berlin go a different way: They embed citizenship information into larger information system. A brief discussion of the implications of those pilot sites close this section.

Citizens' bureau in Unna: The most frequently quoted citizenship information project is the citizens' bureau in Unna [Dunker et al. 1985, Dunker 1988, Liedtke 1990, Krause 1990]. The project was started in 1980 and aimed at providing each citizens of Unna with one responsible official for all his concerns. Thus a large number of officials had to be well-informed generalists. They were to be enabled to solve most of the concerns of a citizen or at least to know where the problem could be solved if it was out of the scope of the Unna administration.

This plan required a large computer based information system. Part of this system was a general citizenship information system. The system provided information on what rights and entitlements a citizen had and where a citizen could claim his rights (if not in the citizens bureau itself).

The citizenship information system turned out to be largely a failure [Liedtke 1990]: The critical mass of information necessary to make the use of the system worth while was very large. It was not possible to keep this critical mass of information up to date. Thus the officials relied mainly on their own knowledge and other sources and did not use most of the system. Only the guidance information continues to be used. The designers argue that the basic problem is an imbalance between costs and benefits on the personal, the organizational and the political level: On the personal level the information editor could do more interesting work with his qualification than entering information into the system. On the organizational level it was not possible to convince the rest of the administration to deliver the information from their own initiative (information push). It was much more to their benefit to deliver information only when asked (information pull). On a political level there are often more urgent problems to be solved than to further a possibly failing citizenship information system.

Although the comprehensive information service was not a success the concept of citizens' bureau was regarded as a success and copied by other cities (e.g. by Bielefeld [Städtetag 1988], Rastatt [Städtetag 1994]). As the experiences in Unna were very widely published (see e.g. Weinberger 1988) and received high visibility they shaped the mindset of interested other cities in the last couple years. The idea of a one stop shop for citizens information and service is also currently implemented in Norway [Totland 1994 p.8].

Model of a decentralized citizens' bureau: Klee-Kruse et al [1995] develops a model of decentralized citizens' bureau for rural areas. The British 'citizens advice bureau' and Scandinavian rural administrations serve as a model for this concept. While traditional citizens' bureaus are located in the center of the local administration, Klee-Kruse et al [1995] propose to create many small decentralized citizens bureaus in the local neighborhood. By bundeling basic administrative services with private services such as banking, post and lottery, these citizens bureaus could even be feasible in rural areas, where the administration is currently not present any more at all. The decentralized citizens' bureaus are connected to central service providers over an telecooperation infrastructure (figure 1).

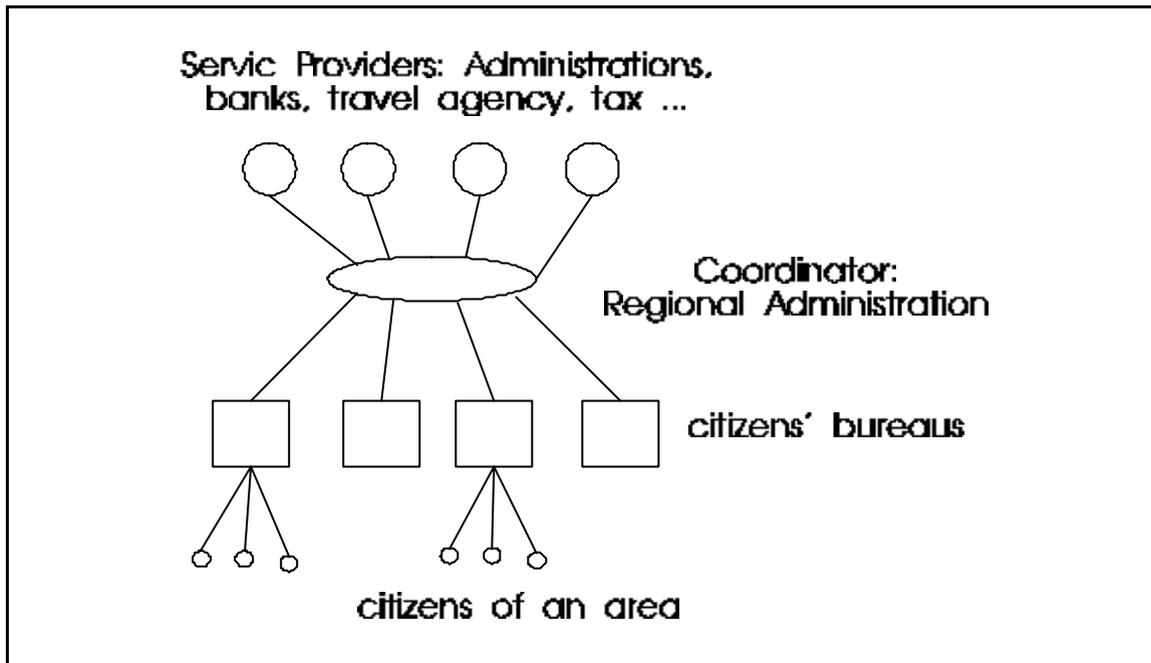


Figure 1: Citizens' bureaus in rural areas

The citizens' bureau functions as a one-stop shop. The official in the bureau can provide all the simple services himself. More difficult questions are solved with the help of the administration that can be accessed via multimedia terminals. The local official then serves as an information broker who translates the multimedia information to the citizen. Citizenship information are an integral part of this concept: General guidelines and simple information can be given by the local official; more advanced information is accessible over multimedia terminals.

The Magdeburg citizenship information system: The citizenship information system in Magdeburg was born out of necessity: In 1990 East Germany got a complete new administration unknown to the citizens. Furthermore the agencies of the administration kept moving from place to place as the buildings in the city were renovated to West German standards. A largely confused population was the result. The Magdeburg answer was a knowledge based citizens information system that is piloted in cooperation with the University of Magdeburg [Stuchlik et al. 1995]. The system is currently implemented on an information kiosk, in a public library and with three citizens advisers. The first usage experience indicate a wide acceptance in the administration, in the population of Magdeburg and particularly with the citizens advisers. The major innovation of the system is a problem driven approach and a large knowledge base structured according to the observed usage patterns of different user groups. The user observations resulted in a sophisticated (but for the citizen simple) question and answer interface that guides the citizen from his problem to the information where he can find some help or service. After testing several alternative approaches the entry screen offers

- an SOS-Button for urgent help,
- access to a keyword search for advanced users

- and the questions whom the problem concerns ('the person himself', 'the personal environment' or a 'contact to the public administration') for the inexperienced user.

The categorization may appear fuzzy to some users but this is no problem as typically there are several paths to the same information. Different user groups need different paths. Any chunk of information contains a brief description of the activity (e.g. getting a passport), the necessary documents, the address incl. telephone number of the responsible public official and the business hours of the responsible administration. The citizen can print this information out and take it home. Future versions will allow telephone access, include interactive multimedia features, and will have additional functionality for citizens participation in politics. The experiences of the research group can be summarized as follows:

- Anonymity turned out to be a surprisingly useful features as particularly high status citizens (politicians, top managers ...) are normally reluctant to approach the administration.
- The organization of a consortium that acquires the knowledge, reviews the texts, runs and administers the system is as important as the implementation of the system itself.
- The inclusion of the citizens advisers is helpful to the project, because they deliver the service to the older generation and give feedback to the system developers.
- An appropriate language and a simple interface is crucial to the success of the system.
- Updating the information takes a significant amount of work as up to 25% of the information changes during one year. A good updating concept based on the different life-times of different chunks of information can limit the update efforts. In Magdeburg updating the information requires two half-time persons.
- Location is crucial for the success of kiosk systems. It is a good idea to put the information kiosk, where citizens wait for service.

The Magdeburg system will be distributed to more locations in Magdeburg and the basic shell is ported to other cities.

Citizenship information system in Bremen: A research group around Prof. Kubicek is building a citizenship information system in Bremen [Kubicek et. al 1993a; Kubicek et al. 1993b, Wagner et al. 1994a, Wagner et al. 1994b, Kubicek et al. 1995]. They are supported by funds of the German ministry of research.

Although the system is called 'citizenship information system' Kubicek et al. [1993b p. 81] recognize that the system is more general than a citizenship information system. Citizenship

information is embedded in a set of day-to-day information. In 1994 the following topics were realized [Wagner et al. 1994b]:

- a district guide for Neustadt
- leisure time and initiatives
- events calendar
- sports
- garbage compass
- knowledge market
- charity archive
- Bremen - Information
- book - tips
- council minutes
- bulletin board
- statistics.

System components supporting the following topics were in development:

- Bremen public transport
- oversees museum
- continuing education database
- administration guide

In preparation were the following topics:

- statistical yearbook
- open channel
- mail boxes
- yellow pages
- environmental data
- digital city map

Three types of services are provided: There is information retrieval (e.g. what concerts are running tonight), information matching (e.g. matching several persons with the same interest) and information processing (e.g. calculating the kindergarten fees according to the parents' income).

The group has set up interactive multimedia information kiosks in a public library and in a local administration. The pilot site in the public library was evaluated in 1993 and considered a partial success. The interface was very well accepted by the users. A particular advantage seems to have been the inclusion of video and sound. However the pilot installation contained too little information. Therefore the group aims to enlarge the information base and open it up to other information providers, e.g. computer mailboxes and local publishers. They realize that information brokerage and keeping information up to date become a central problem areas.

The group also wants to build new access points in shopping malls, cafes and other public places. In 1995 the group has decided to also implement the system on the Internet.

Benefits of such computer based citizenship information systems include (Kubicek et al. 1995 p. 24):

- Targeted information search in large information databases
- Better presentation of information
- Linking of dispersed information
- Easier Updating of information
- Individualization of information
- Communication possible
- Transactions possible

In the eyes of Kubicek (1995) editing the information is the key challenge for the success of citizenship information systems: The information content needs to be structured so that it is easy and pleasant to retrieve information and the editorship needs to be assigned to a capable organization (possibly of several information providers). Kubicek explained in an interview: What is currently the "press" has originally started with using printers to produce broadsheets. It has taken some time until newspapers and the structure and organization of press agencies, correspondents, advertising agencies etc. has been established. Compared to the current press, citizenship information systems are in the broadsheet phase. A concept and an organization for editing the information still needs to be developed.

Different roles in this organization can be:

- Information source
- Information provider
- Editor
- Database provider
- Network provider
- Terminal provider
- Location owner (e.g. cafe)

Experience in Bremen has shown that kiosks systems alone do not have a sufficiently large audience and therefore may only be economical if the information is also distributed over an on-line service. Therefore Kubicek (1995) is planning to set up a World Wide Web Server.

European citizenship information access points: The Commission intends to explore information kiosks in rural areas of Europe [Malivoire, 1995]. The terminals will provide three kinds of information: 1. General information on the European Union (e.g. how many countries) 2. What the European Union brings to the individual citizen in the area where the terminal is

placed (e.g. funding for a local museum, or local farming subsidy) 3. A channel for precise questions to the Commission. They can contact their local member of the European parliament, the relays in the region, e.g. via Fax and telephone. This project is in a pre-pilot phase. It has the potential of improving the availability of citizenship information and of getting the citizens closer to the Commission.

World Wide Web Servers in the Internet: In the last year there was a large buildup of World Wide Web servers in Europe. The World Wide Web is a multimedia distributed hypertext environment on the Internet that presents information in linked text, picture, sound, and video chunks. The European Commission, central governments (e.g. in Germany and Norway) and many local administrations are presenting citizenship information on WWW-Servers. Many other administrations are expected to follow this trend and at least test the Internet. Furthermore the major political parties are currently moving to the Internet trying to get the younger generation involved in politics [Mack 1995]. Many universities by now are present in the World Wide Web and present some information about its city. Mostly this information is only for tourist and contains information on events and city maps. One noteworthy exception is the citizens' network in Berlin.

Citizens' network: In Berlin the private non profit organization 'Handshake' has founded the citizens' network 'Electronic city' [Koenig 1995 p. 102]. The Electronic city is accessible from any Internet station. A world wide web (WWW) server provides both information and communication services. Information is for example provided on

- cultural events, e.g. concerts and cinema
- local train and subway schedules
- opening hours of public institutions

Communication services for example include chat services between local pubs.

Handshake wants to be more than just an information kiosk. The inhabitants of the city are invited to open up their own WWW- servers and offer information there, e.g. on local cultural events. The information can either be publicly available or be only accessible to closed user groups. This open attitude follows the general ideals of the Internet: Control should be decentralized and information provision should become a grassroots movement.

Citizenship information shall be one focus of Handshake's future activities. In close collaboration with Berlin Senate, the citizens should get an electronic townhall. In this electronic townhall citizens should gain access to their elected representatives and to electronic records. It is too early to judge if this effort will be successful, but as the German BTX is opening up to the Internet [Zeit 1995, p. 102] it is easy to imagine that all the Berlin citizenship information services provided over BTX will be accessible over the Internet in the near future.

Experiments with community network in the USA and the 'digital city' in Amsterdam served as an example for the electronic city. Handshake plans to collaborate with Amsterdam on the

further buildup of their electronic city. They are particularly impressed by the high acceptance rate of 10.000 'inhabitants' of the digital city and 3.000 visitors to the digital city. New partner projects will include the cities of Prague and Vienna and will make the electronic city part of an international 'megametropolis'.

The Norwegian ODIN System: The Norwegian government has launched several effort to put citizenship information to the Internet, for example transmitting the sound tracks of plenary debates in parliaments. The most important effort on a central government level is the World Wide Web (WWW) server ODIN. ODIN mainly contains information for the 'active citizen': speeches in parliament, important documents, newspaper articles, press releases, a presentation of different departments, names and telephone numbers of officials. In collaboration with the authors the government library puts some efforts in editing the information, e.g. by putting keyword links to other databases into the texts. If for example a speech by the prime minister contains a reference to the 50th birthday of the United Nations in the text there is a link to an external server with information on the United Nations. Working as a hub for pointers to other meaningful information (e.g. to the EU) is regarded as one of the main function of ODIN.

A lot of the Norwegian government official publications are already coded in SGML-code as part of a project on media-independent publishing. SGML-code can automatically be converted into HTML for the WWW. This makes it technically possible to put large volumes of documents on the WWW (e.g. a couple of thousands of documents a year).

There is great interest in ODIN on the political side. However from the discussion of the citizens' information needs it remains doubtful, if many citizens will really use it. Will they really be interested in information that is far away from their day-to-day concerns? If it is used in the current form or not, it at least is a beginning for publication of government information on the Internet and it shows that there is a willingness in the government to try out new technologies.

Key determinants in the use of communication technologies

A few researchers have come up with criteria for the acceptance of communication technology: Lenk et al. [1990 pp. 130 ff] see at least five critical success factors for computer based citizenship information systems. Liedtke [1990] distinguishes between database requirements, user interface requirements and organizational requirements. Kubicek [1993 p. 38] argues that Citizenship information systems have not been accepted, because they are not user-friendly enough, or because they contained the wrong information, or because they presented information in a confusing manner. Kubicek [1995] also points out that information behavior is always structured in space and time. Thus the location of the information access points and the typical time of use is crucial. Their contributions can be synthesized with the experiences of the interview partners as follows in a set of criteria.

1. *Sufficient Promotion*: The project has to be sufficiently promoted. The promoters have to have a sufficient financial staying power and should not be discouraged by a low user frequency in the beginning.
2. *Clear responsibility*: There has to be an organization with sufficient manpower responsible for running the system. This organization has to be responsible for keeping the information in the system up to date.
3. *Completeness of information*: If a citizen searches for information in an electronic system, the information he finds should be complete. It is more important to provide in-depth information on a few areas than incomplete information on a broad range of topics.
4. *A sound editing concept*: Publishing citizenship information on an electronic medium requires an editorial effort comparable to publishing a newspaper. The collection, selection and structuring of information as well as its presentation requires professional skills.
5. *Regular Information updates*: The information in the system has to be kept up to date. The organization has to assure that the information is delivered to the responsible department by the other departments. This is the most difficult requirements, as the information originates from administrations that do not normally cooperate with one another.
6. *Citizen friendliness*: The system has to present the information in citizen-friendly manner. The language has to be the language of the citizen and not of the administration. This requires the use of professional editors.
7. *User friendly interface*: The product should have a user friendly interface and sufficient bandwidth between the information servers and clients. The information should be accessible quickly and not require extensive navigation. The hypertext interfaces to the world wide web (e.g. Mosaic) are a good example for a user-friendly interface.
8. *User centered design process*: Currently we are still in a learning and experimental state. As long as the system has not matured, a user centered design process is appropriate: The system has to be developed in a way that keeps the technology in the background and the information needs and interests of all involved parties in the foreground. The system development process should be incremental and understood as a continuous learning process.
9. *Inclusion in a larger electronic environment*: Citizenship information systems can benefit if they are embedded into a larger electronic environment, e.g. BTX or the Internet. It is also much easier to reach the critical mass that makes an information system worth while in an embedded system than in a closed system. If citizenship information is part of a bundle of

services the marginal cost for learning to use and running the system become acceptable and citizens begin to access the information from their homes.

10. *Right Location*: Citizenship information can be accessed in city halls, cafes, train stations, unemployment offices, libraries, at home or at other places. It is crucial for the success of the system that the content of the provided information fits to the location of the information access point². For example, a citizen will not electronically fill in his tax form in a train station.

Future trends in information technology and citizenship information services

Most interview partners agreed that there is a future for information technology in citizenship information. Particularly the increasing diffusion of PCs into the households and the increasing acceptance of On-line services indicate a rapid growth of electronic citizenship information. Interview partners expected the main market to be the home market with some supplementary kiosk systems. Many German city, state and central administration have reacted and begin to set up information servers on the World Wide Web or on other On-line-Services.

However one should not become too optimistic. Some reasons are:

1. Less educated people may not know how to use the computer. This issue may be a question of time as computer interfaces improve and a generation of computer literates is currently growing up.
2. Only a minority of the population owns a computer and only a part of those computers has a modem. Again this problem may be a generation problem that time may solve. In the foreseeable future information kiosk in public places may ameliorate the situation.
3. People with social problems may prefer to speak to somebody in stead of searching a computer databases.
4. Citizens may not be able to translate their problem into a query for information.

The last two problems already appear with written information.

Furthermore one has to be careful not to divide the society into the information-haves and the information-have-nots. This indicates that there always needs to be a human access point to

² Location is also crucial for conventional citizenship information. In Osnabrück the citizens advice center was primarily visited by old people, when it was located in the center of town. since it has moved to a new administrative building 1 km outside the center, fewer old and more young people come.

citizenship information. Supporting these human access point with information technology may therefore be as important as electronically providing information directly to the citizen.

Having said these words of caution we will now introduce four increasingly advanced types of information technology for citizenship information that are being discussed in Germany: pure information systems, communication systems, simple services systems and a combination of service with telecooperation. Each type will be illustrated using examples (based on [BTÖV 1995]) and it will be speculated on its chances of realization for citizenship information in Germany.

Many current manual and electronic citizenship information systems only provide information as shown in figure 2:

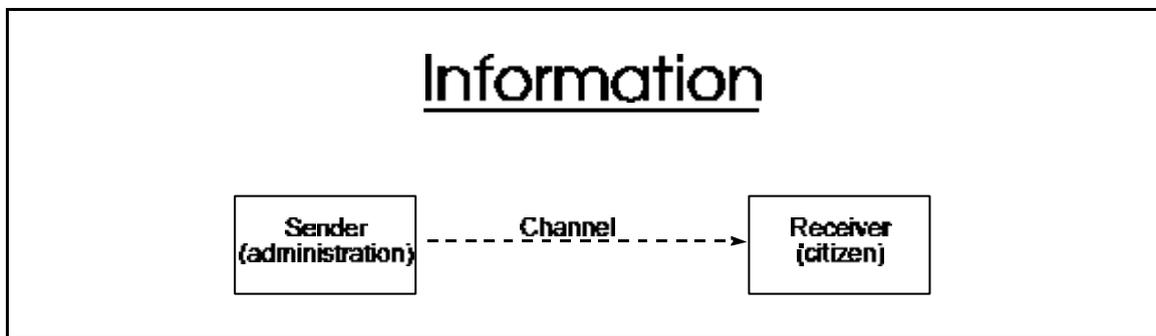


Fig. 2: The information approach

The administration provides the citizens with information over a one-way channel. This channel can be a brochure, that is sent to the citizen, or a page on a BTX-System.

World Wide Web movement: The World Wide Web makes citizenship information to a grassroots movement. Advocates envision the 'global village' being connected over the Internet with many local World Wide Web server. Anybody can easily access information and add information allowing the information to grow from the roots. The main advantage of this scenario is that the work of information supply is distributed. The realization of the World Wide Web scenario is initially driven by the idealism, enthusiasm and playing interest of the computer science subculture. Increasingly public administrations put serious information on the Internet and commercial companies become interested in it. The long-term acceptance depends on the further dissemination of networked Personal Computers. As Germany is quickly adopting the Internet it appears quite probable that the young generation will build their global village. However it remains open, if other groups will gain access to it.

There appears to be an increasing necessity to not only provide citizenship information, but to integrate information with communication. Communication allows the citizen not only to receive information with the administration, but to exchange messages with the administration (figure 3).

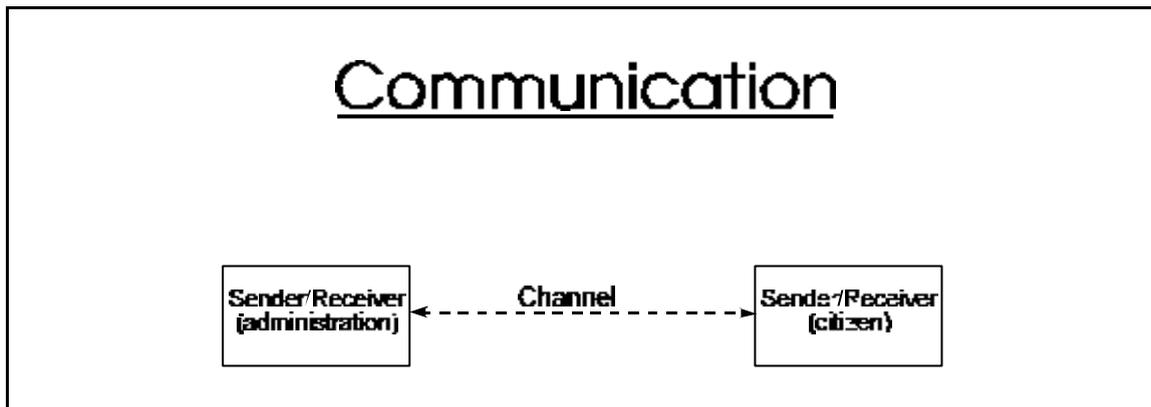


Figure 3: The communication approach

If, for example, a citizen electronically finds information about a public service, he should be able to send an EMail asking for further information or clarification. As one interview partner pointed out: information and communication features benefit from one another and creates synergy: Much needless communication is saved if the information is provided with the communication channel and the citizen can move from information to action if a communication channel is provided with the information.

Integration of communication with information is fairly easy. An integration of information, communication and service would be more difficult but also more beneficial. For example, a citizen could not only find information on how to register his car, but also do much of the car registration itself interactively on the PC. In a simple system, the citizen receives all the information from the administration. He then fills out an electronic form to trigger an transaction (figure 4).

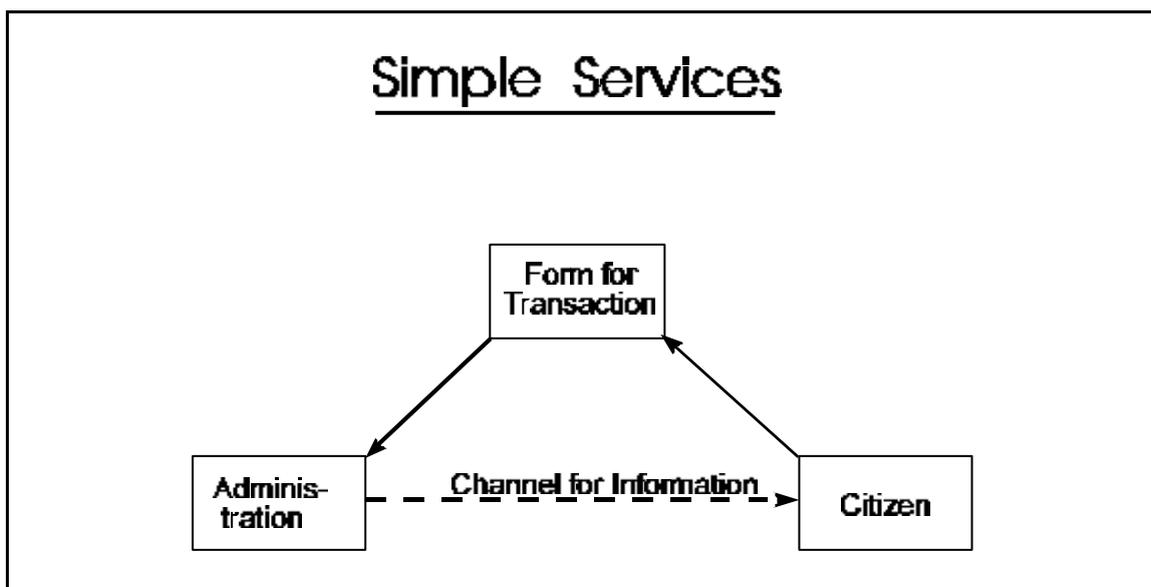


Figure 4: The simple services approach

Advanced information kiosks: Information kiosk can be started by local administrations or by research organizations. They provide information services in public places such as libraries, shopping malls and cafes. Services can for example be public transportation tickets, personal registration (after moving) or theater tickets. IBM Germany plans to test some similar electronic services in the city of Soltau-Fallingb.ostel.

The acceptance of automatic teller machines and telebanking indicates that many citizens are interested in such and automated service. However, unsolved issues in personal identification, legal liabilities, data protection, electronic signatures and electronic payment are obstacles to such an improvement of citizens service.

The most advanced systems allow the citizen to directly interact with the administration. There is a two-way-communication channel and a shared material that both the administrative official and the citizen can work on (figure 5).

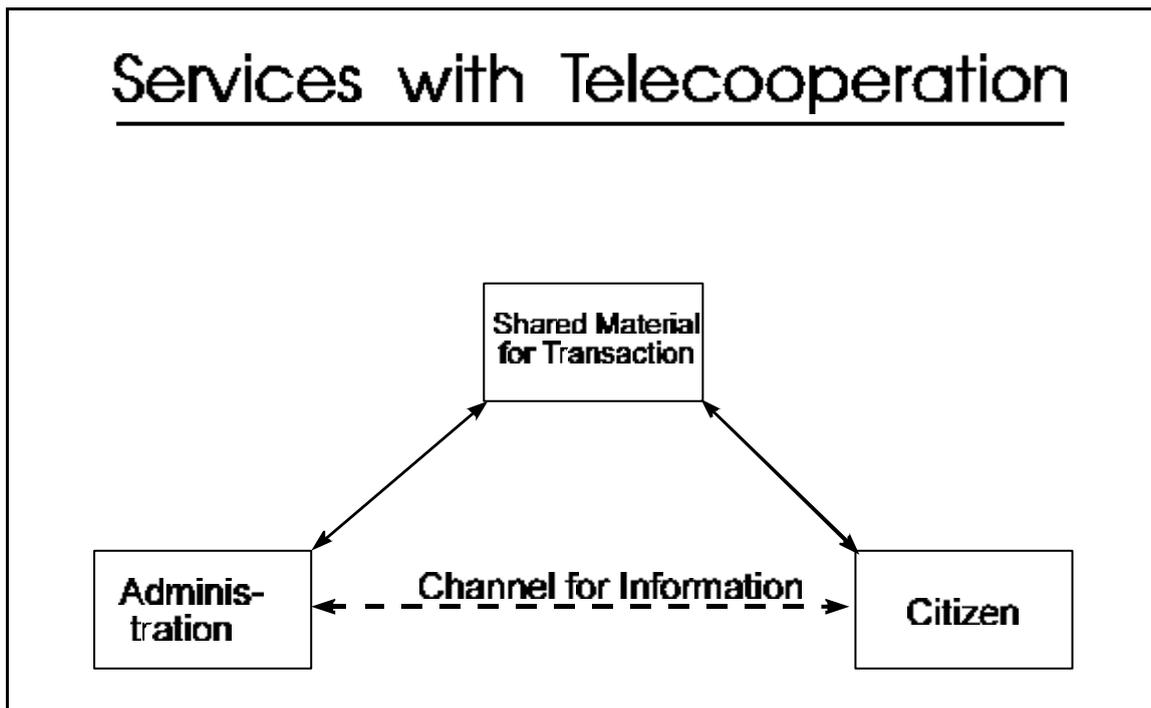


Figure 5: The approach of services with telecooperation

If for example a citizen has to fill out his tax form, he might need help from the tax office. He can call the tax official and the official can show him on a shared electronic form, where he should put what information.

Decentralized citizens' bureaus: In decentralized citizens bureaus there can be a triade of users: the central administrative official is on one end of the line; the citizens bureau official and

the citizen are on the other end. They jointly work on an electronic application, e.g. for welfare. They are also connected over an electronic communication channel (e.g. voice). Citizens bureaus provide a particularly interesting combination of personal information and service (from the citizens bureau official) and remote information, service and cooperation (from the central administration official) that might be appealing both for the computer literate and the less computer literate citizen. The official in place also makes the barriers of personal identification, signatures and payment less important than in home telecooperation situations.

Citizens do have a need for better information which in Germany means a better integration of scattered sources. Thus the scenario of a computer supported decentralized citizens bureau that provides the most important services and information in a one-stop shop certainly fills a need. However it depends on the willingness and ability of an administration to change. The citizens themselves can only pressure politics towards facilitating that change.

As ISDN is widely available and many households already own a Personal computer, the telecooperation between administrations and citizens might become increasingly popular in the future. Citizenship information then will be an integral part of a larger telecooperation scenario. The success of a telecooperation scenario depends on diffusion of telecooperation technology in the private and public sector. We do not expect citizenship information to be a driving force; however it might benefit from a widespread adoption.

The German government will be distributed between Bonn in Berlin in the near future. Several research projects are under way in Germany to establish pilot test site for the telecooperation between distributed administrations [Hoschka et al. 1992]. If these pilots turn out to be a success it might further the cause of citizenship information systems in two aspects:

1. There will be a growing awareness of the benefits of telecooperation.
2. Much information that is now stored in paper form will be stored in computerized forms in a distributed administration. It will thus become much easier to enter data into a citizenship information system.

Thus the distributed government is not itself a scenario for citizenship information services, but its success will influence its further development.

Opportunities for the information industry

Electronic citizenship information services may be interesting for several sectors of information industry. The interview partners indicated the following areas:

1. The providers of automatic teller machines can expand their market into information kiosks and electronic services (e.g. ticketing)
2. The advance of communication and electronic services open a market for the producers of 'SmartCards', as SmartCards are needed 1. for personal identification, 2. as a local store for personal data, that can be automatically loaded into the information system and 3. for payment.
3. IT-Companies can offer an integrated service and support to public administrations.
4. Professional editors for multimedia information can help an administration prepare the information in a way that is appealing to the citizen. This is particularly important with information on the border between citizenship information and political marketing.
5. On-line services may buy information from the administration, add value and sell it to the customer. Selling information is relatively difficult in Germany as Germans are used to getting information for free.
6. The more citizenship information is presented in multimedia, the more interesting the market becomes for the Telecoms. Currently the German market is observed with interest by the German Telecom, but it does not yet see a specific market segment.
7. There is a lot of citizenship information that is generic for Europe, Germany, a German state or a German region. As long as the central administrations do not take up the responsibility for coordinating the efforts of the local administrations, there may be a market for citizenship information shells. These shells contain a generic structure for local information content, a generic interface and pointers to general information on Europe, European countries and regions within the countries.
8. Consultants can help administrations start a system, build an organization that runs the system and establish a sound editorial concept.
9. The biggest market is for administrations themselves who can save money and provide better service.

A specific European market can be seen in information content, as it is dependent on culture. Thus a European IT policy should concentrate on content. Generally the interviewees were cautious about the influence of citizenship information on the information market. Electronic citizenship information is still mainly in an experimental stage in Germany with only a few serious applications. Electronic provision of citizenship information has however raised more interest than citizenship information and citizenship information policy itself. Electronic citizenship information provision has become sufficiently interesting both for the administration

and for the public to become a major source of citizenship information within the next ten years. Whether the market for these system will mainly remain inside the administration or have a major impact on private companies remains to be seen.

** There already exist a market for European electronic information. Reuters earns a lot of money selling information that they get from the Commission to commercial customers. The Commission recognizes that there may be a market for electronic provision of citizenship information, both for the European telecoms and for information providers. If the Commission widely uses the Internet for information provision it may become competitor to commercial European companies. The major challenge for electronic provision of citizenship information will be information overload and choice: If you give citizens a wide array of information choices, they tend to ignore most of them. Providing the right kind of citizenship information remains a challenge both for the Commission and commercial companies.

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