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E-Government and E-Commerce – German Experience in the Construction of Virtual Town Halls and Market Places

The „Occasional Papers" are a collection of articles in languages other than German that have been written for various events such as conventions and conferences. They also contain summaries taken from selected publications of the institute. All papers of this collection are also available online: http://www.difu.de/english/occasional/

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Contents:

Introduction

This essay deals with the experience of German municipalities in the construction of vir[tual] halls and market places by reference to the example of MEDIA@Komm. It aims to s[how] efforts which are being made in Germany to promote e-commerce and e-government [and] experience that has been gained and is still being gained in the process. To this end, f[irst] the framework of the project MEDIA@Komm will be outlined and the municipalities of [Bremen,] Esslingen and the Nürnberg municipal association will be presented with their concepts [and] results. Finally, current issues and obstacles will be described which have become [apparent] during the project and which are closely linked with the spread of e-comme[rce and] e-government.

Since the mid-1980s the Business and finance department of the German Institute of Ur[ban] Affairs has dealt with the question of the effects of new information and communication technology and new media on towns and cities. For some time now, the subject of e-government has increasingly been at the centre of interest. We are therefore also tryin[g to] offer the local communities guidance and assistance in this area.

Not least because of its extensive experience in this area, the Institute was commissione[d by] the Federal Ministry of the Economy (BMWi) to act as the consortium leader and provide[s] academic support and guidance to the federal government's largest multimedia initiative. Together with three other academic institutions, each of which deals with specific aspect[s of the] subject, Difu deals with economic issues and questions of administrative science. In add[ition] specialist events are held and a cooperation and communication network is being establ[ished] which also includes the Internet presentation on MEDIA@Komm.

Use of the Internet

Percentage of users by population groups (über 14 Jahre) 1997 to 2000, in %

	1997	1998	1999	2000
	6,5	10,4	17,7	28,6

Source: ARD/ZDF-Online-Studie 2000.   Deutsches Institut für Urbanistik
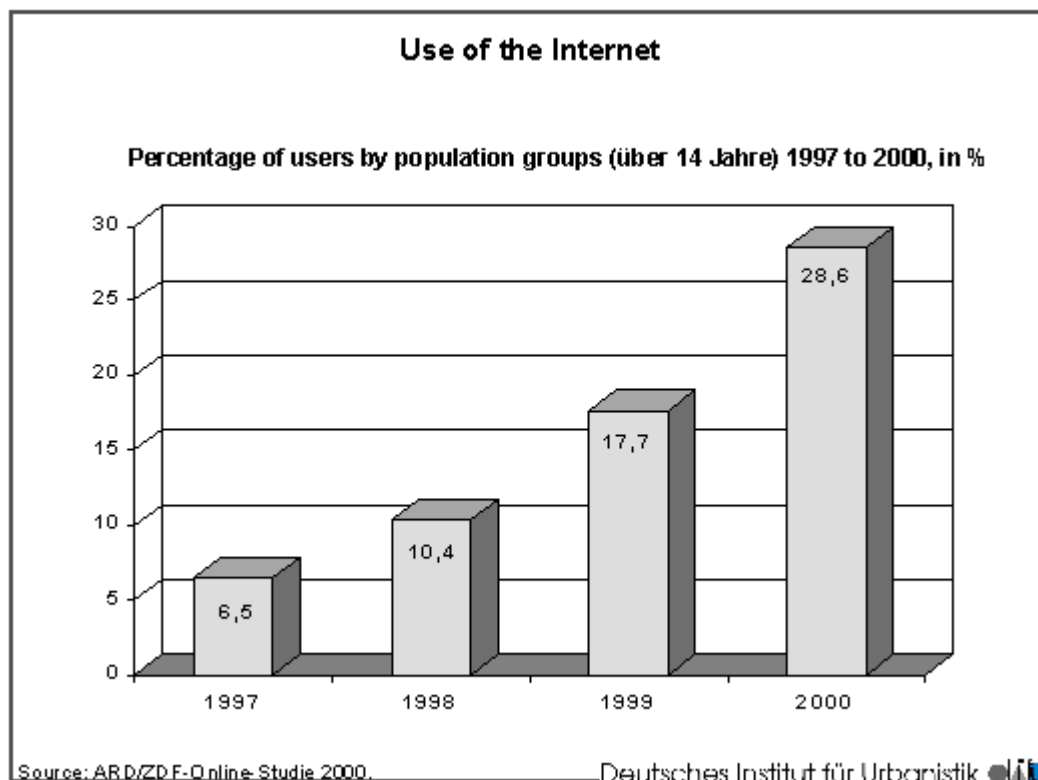
Surveys show that the number of PCs in German households is constantly increasing. 3
a computer in 1998, but the figure rose to 45 % in 2000. The number of people using the
Internet is also growing constantly: almost 30 % of the total population above the age of
claim to use the Internet regularly. It can be said that PC and Internet are becoming an e
medium in Germany. The Internet is no longer regarded as merely an instrument to obta
information, as it was a few years ago; it is now being discovered as a means of commu
that can be used, for example, to send and receive e-mails. But it is also used as a "serv
instrument" which can be used at any time to call up news, shop on-line or call up advice

PC and Internet are not only increasingly used in the population, technological informati
processing is now also an established element in the administrations of the national
government, the federal states and local communities. The infrastructure in German tow
cities has improved considerably over the last three years. Almost 90 per cent of the
administrative staff now have a PC, and almost half have internet access and can be co
by e-mail.

With the increasing use of technical equipment in the administration and the continuous
increase in the use of PCs and the Internet by the citizens, a change is also taking place
self-presentation and self-image of towns and cities. Almost every German municipality
be found on the Internet under "www.placename.de". Most of them, especially the small
towns, offer information about their history or the local sights and provide details of their
hours. With increasing experience in handling the new technology, and with the aim of
improving the service quality for the citizens, towns and cities then extend their Internet
presence. "Progressive" towns and cities offer their citizens the opportunity to communic
electronically in addition to the provision of information. In recent years, work is increasir
being done to enable transactions to be carried out on-line, so that citizens can carry out
"visits" to public authorities from home. In many municipalities, so-called virtual market p
are arising which aim to provide the citizen with attractive on-line shopping facilities.

On-line services of the administration are already offered in many forms by many towns

cities. Recently, a number of municipalities have been trying to combine their administra
services and the e-commerce facilities in a single system. From an early stage, the discu
Germany centred around the question of how such transactions could be made absolute
secure legally and how they could be seamlessly integrated across different media. The
Signature Act, which was passed in 1997 the Federal Republic, took this subject into ac
provides a basis for the use of chip card-based electronic signatures.

MEDIA@Komm offers the framework for the initial use of signatures in practice and the
compilation of legally secure on-line-transactions. Over 100 transactions are being move
digital network, and more than 30 have already been implemented. Residential registrati
change of address, planning approval applications and information from the registers wil
seamlessly integrated across different media by electronic signature. And this includes
electronic payment with chip cards in the same process.

MEDIA@Komm has a pioneering role in the use of digital signatures as a precondition fo
introduction of secure and convenient on-line services. The emphasis in Germany is on
card solution, which is especially secure. Accredited and certified trust centres which co
with high security standards have been established for the issue and implementation of
electronic signatures.

The MEDIA@Komm initiative

MEDIA@Komm is currently the largest multimedia initiative of the federal government. T
is to exploit the new information and communication technology for the benefit of the citi
The contact between the state and its citizens is closest in towns and cities, which is wh
MEDIA@Komm is working to advance the all-round creation of virtual town halls and virt
market places. The project is part of the federal government programme "Innovation and
the information society of the 21st century".

The implementation of the MEDIA@Komm model projects goes back to a municipal com
declared in 1998. 136 towns, cities and local communities took part with their concepts.
the jury determined the three prizewinners: the Hanseatic city of Bremen, Esslingen and
Nürnberg municipal association. A fourth town - Rathenow in Brandenburg - was awarde
special prize for the implementation of an individual project, electronic access to records
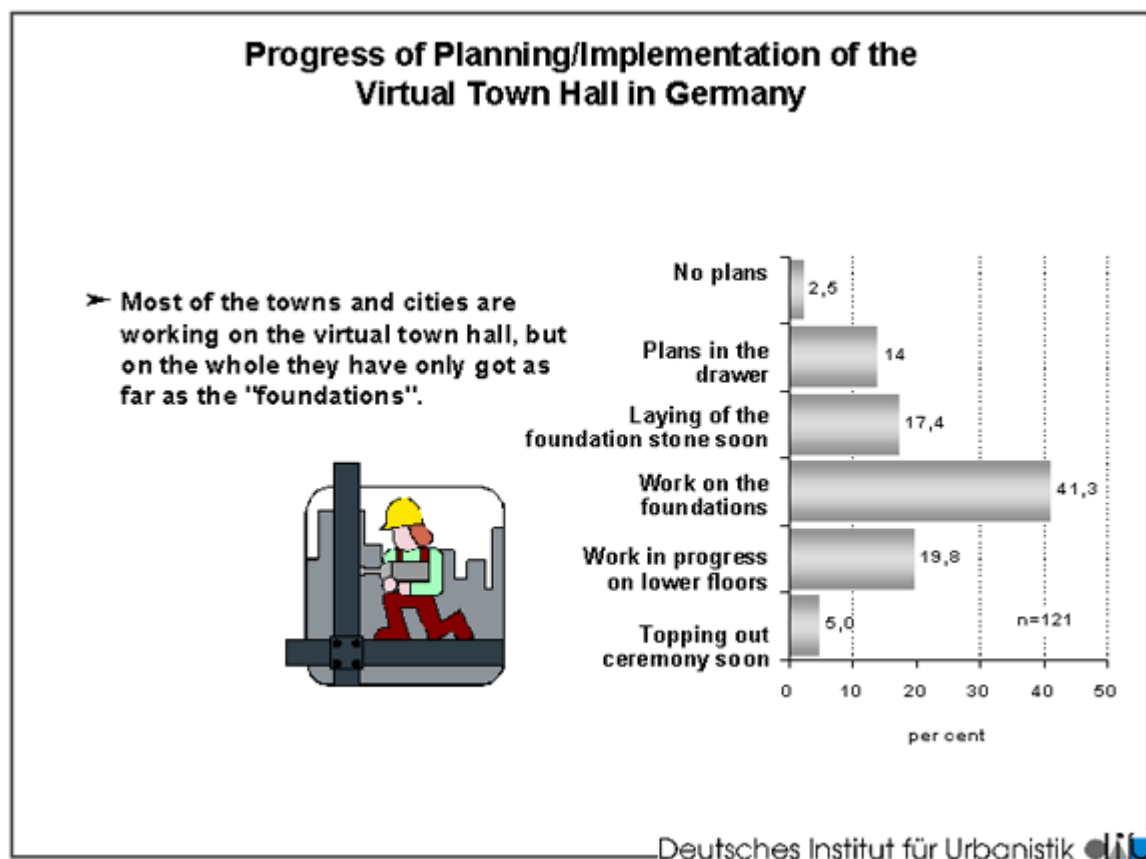
But not only the prizewinning municipalities are working on the implementation of their c[...]
Even towns and cities which were not among the winners of the competition are continu[...]
develop their virtual town halls. A survey carried out by Difu among German towns and c[...]
2000 showed that almost 10 per cent already "had their plans in the drawer". Almost 18 [...]
that they would soon "lay the foundation stone", and 43 per cent are "already working on[...]
foundations". 16 per cent claimed that the "lower floors are already built", and 6 per cent[...]
celebrate their "topping out ceremony" soon.

As an example of the experience of e-government and e-commerce in Germany, the co[...]
and results of the prizewinning municipalities of Bremen, Nürnberg and Esslingen will n[...]
presented. The implementation of the projects started at the beginning of 2000, and they[...]
be completely implemented by the end of 2002. A total of over 120 mill. DM are being in[...]
in the projects, including 50 mill. DM in subsidies from the Federal Ministry of the Econo[...]
Technology (BMWi).

The prizewinning municipalities: Bremen, Nürnberg municipal association, Esslingen

All MEDIA@Komm municipalities aim to carry out legally binding transactions by electro[...]
means from start to finish by using the digital signature. It will now be explained how the[...]
municipalities aim to achieve this goal and what milestones they have already reached.

Free Hanseatic City of Bremen

Goals and project structure

The Bremen MEDIA@Komm project "Legally binding multimedia services with digital sig[...]

in the Free and Hanseatic City of Bremen" is being implemented by bremen online servic
GmbH & Co. KG and comprises three large core areas with further sub-projects:

- *Access to secure and legally binding on-line services:* Here, in addition to access f
  home, further opportunities will be created, e.g. via supervised user stations in pub
  places and kiosks. The widest possible distribution of signature cards and scanner:
  necessary to increase acceptance and gain initial practical experience of applicatic
  these facilities also come under the heading of access.
- *Platform and OSCI™:* This includes the creation and operation of a platform on wh
  communication between the administration, citizens and businesses is structured b
  use of forms. To this end a uniform communication standard OSCI™ (Online Servi
  Computer Interface) must be developed and then harmonised with other local
  communities at the national level. And finally, different payment procedures should
  integrated.
- *Applications / life situations:* The applications transported via the platform are grou
  so-called life situations. The guidance of the citizen in virtual visits to the public aut
  calls for information is based on his current interest, his "life situation" which leads
  contact the public authority. In the Bremen project these situations are building a h
  buying a car, communication between lawyers/notaries and courts, communication
  between tax consultants and the revenue office, residence and change of address,
  of public contracts, applications for students and leisure/on-line ticket sale. In the c
  the Bremen project, a total of nine life situations and sub-projects with more than 7
  transactions and well over 20 external service providers are to be implemented.

Bremen - Application Areas

Citizens	Professionals	Business	All Users
1 Moving & housing	5 Building (homes)	9 Procurement	10 Electronic pay ment of fees e to public auth ties
2 College/university	6 Car purchase		
3 Marriage	7 Communication with lawyers and courts		
4 Ticketing and leisure activities	8 Communication with tax consul- tants and revenue department		

70 business processes with 26 service providers
(Administration, public companies und national service providers)

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Progress to date

Access - how to get e-government to the citizens

Many measures were adopted in the Bremen project to facilitate access to the card and
applications. A total of 1000 signature cards have been issued since the project began. A
the other MEDIA@Komm municipalities, it is assumed that the banks in Germany will in
issue combined cards for payments (EC card) and digital signatures, so that in a few yea
citizens will have chip cards which can also be used for electronic signatures. The signat
cards can be obtained at various points in the city such as the municipal library and the
Sparkasse bank. The necessary scanner can also be obtained for a modest charge - in a
to signatures, this scanner can also be used for purse card payment via the Internet. To
users to familiarise themselves with the signature card, the scanner and the services offe
the bremer-online service under professional guidance, supervised user sites have been
A completely equipped computer can be used free of charge, and supervisors are availa
answer questions. There is a free telephone hotline for technical questions and further
information on the project.

Platform and products

The development of a local community protocol standard for on-line administrative transa
is the ambitious goal in Bremen. The development of such a standard known as OSCI (O
Services Computer Interface) is constantly moving forward. To achieve standardisation o
community transactions, the German standardisation institution DIN has taken on the tas
coordinating various working parties in the framework of the accompanying research of
MEDIA@Komm. The goal is to develop specifications which are available to the public s
exchange and electronic processing of documents are possible throughout Germany.

OSCAR (On-line Service Computer Interface Architecture) is the latest development in tl
Bremen project. This name stands for a system architecture for secure and legally bindir
applications in the area of public administration. For the first time, a platform has thus
successfully been developed for e-government on which it is possible to carry out on-line
transactions irrespective of the technology used and the manufacturer. It enables forms
provided, filled in and electronically signed on-line, then sent back to the public authority
secure data transmission.

Applications, applications, applications

The first "visit" to a public authority carried out completely on-line, in which a marriage ce
was ordered and the fee was paid directly with a purse card via a secure Internet link, wa
presented in September 2000. Since then, the citizens of Bremen have been able to call
various on-line services of the administration and private service providers. In the life situ
residence and change of address, for example, they include registration and cancellation
electricity and water with the municipal utility companies, changing bank accounts at the
Sparkasse and mail forwarding arrangements with the post office. Birth, marriage and de
certificates, copies from the family register and information about the time of birth can als
ordered on-line from the registry office in Bremen - and paid for electronically. Since Jun
the residential registration office of the city Bremen has also offered on-line services. The
legally binding entries and deletions can be made in the residential register via the Intern
using the electronic signature.

Since May 2001, applications for students have also been in place. Changes of address,
registration of semesters on leave and exmatriculation can be carried out on-line with the

signature card by students at the University of Bremen and the higher education college Bremen and Bremerhaven. In the course of the year, other applications will also be offer students of these higher education institutions.

A service for solicitors and businesses is currently in the test phase. They can call up information in electronic form free of charge from the register of companies database at Local Court (Amtsgericht). A further process, which is also likely to interest small and medium-sized companies, is the on-line debt collection application, which is being devel the Free Hanseatic City of Bremen by bos GmbH in cooperation with a Düsseldorf softwa company. With this software, applicants will be able to file debt collection applications electronically via the Internet, thus saving time, effort and costs. And finally, the prototyp digital tender platform for the award of public orders in the construction industry is curren being developed in Bremen. The process is being developed in cooperation with the priv company Conject AG and will make it possible in future to read announcements and dov tender documents over the Internet.

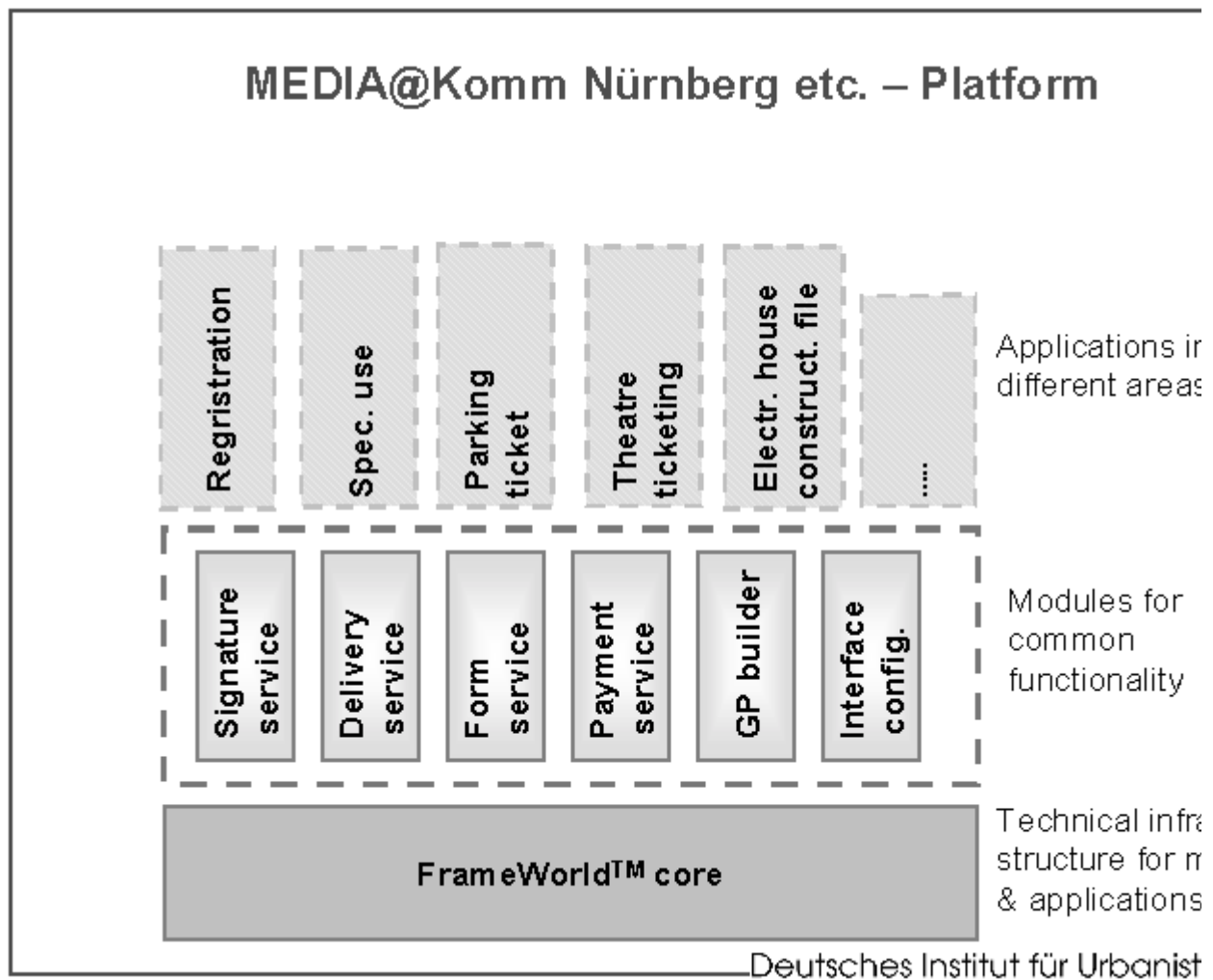**Nürnberg municipal association - Nürnberg, Fürth, Erlangen, Schwabach, Bayreut**

Goals and project structure

The goal of the project "MEDIA@Komm in the Nürnberg region", implemented by the pro sponsor: Curiavant Internet GmbH, is the same as in the other municipalities - to offer le binding multimedia services with digital signatures in the municipal association. A region communication platform is to be created which will support secure communications and citizens various communal and private services. The Nürnberg municipal association con five municipalities of different sizes in the region. The special challenge here is to develo on-line services and products which are equally "fitting" for all municipalities.

On the basis of past experience and the difficulties in transferring pilot projects to the ind municipalities, it was decided to develop a series of software modules (e.g. for signature payment etc) which can then be used for the implementation of the respective individual services.

In Nürnberg, as in Bremen, there are three pillars of the project, but they are "sorted" diff

- *Cross-section projects* denote the individual projects such as the platform, security concept, digital signatures, payment function, document management, user interfa regional on-line platform (operation) and proposals for standards for administrative procedures (geographical information systems). The cross-section projects provide important services for all communal and public-private partnership projects.
- *Communal projects,* e.g. the educational region, parking permits for residents, elec support for the council, electronic house construction file, geographical information residential register (entries, changes and deletions), information from the residentia register, information from the trade supervision register, business registration, char and closure, vanity vehicle numbers, on-line libraries, invitations for tender, award contracts and public participation in communal construction planning processes.
- *Public-private partnership projects,* including for example applications for the regio virtual market place, medical Intranet, support for business start-ups, on-line judicia practice, public transport tickets, company identity cards and the establishment of a card operating company for the multi-functional chip card/bank card. Work is being being carried out to facilitate access to the Internet not only via a PC, but also to pr communal on-line services on the Internet via TV sets and mobile appliances (cellu phones, hand-helds etc.).

MEDIA@Komm Nürnberg etc. – Platform

Regristration

Spec. use

Parking ticket

Theatre ticketing

Electr. house construct. file

....

Applications in different areas

Signature service

Delivery service

Form service

Payment service

GP builder

Interface config.

Modules for common functionality

FrameWorld™ core

Technical infra structure for m & applications

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Progress to date

Cross-section projects

Curiavant Internet GmbH has developed a platform which has already been used as the
for the communal application "Resident's parking permit" in Nürnberg, Erlangen and Für
(Nürnberg October 2000, Erlangen and Fürth 2001). To offer additional communal servic
business partner with a similar technological orientation was sought and found. In future,
companies will work jointly on the modular on-line platform to provide the other planned
communal and private commercial applications.

In Nürnberg, too, the ability to enable electronic signature and payment is mandatory. Lil
Bremen and Esslingen, it is hoped that the chip cards can be used for multi-functional pu
as far as possible. Thus, there is now a proprietary "flip chip card" developed by Curiava
chips on both sides) which can be used for electronic signature and payment. On one si
contains a purse card from the Sparkasse which is not linked to a bank account, and on
other side it contains the digital signature from the Deutsche Post subsidiary Signtrust. C
payment modes are currently being designed for use in on-line services and implemente
communal sub-projects. An important aspect is the integration of the payment process in
internal work flow of the local authorities.

In the next task building blocks, modules such as authentication, verification, entitlement
checking, encryption, key management in the administration, archiving etc. will be implen

in practice.

Communal projects

The first pilot project, which was successfully transferred to the different computer
infrastructures of the municipalities in the association, was the parking permit for residen
Thus, not only the residents of Nürnberg can now apply and pay for their parking permit
their digital signature - inhabitants of Erlangen and Fürth can also do so with the same s
At the latest in the autumn of 2001, the next steps will be the implementation of the appli
"Residential registration" and "Special use of public traffic space.

Of the total of 19 different local community sub-projects, 12 have already begun in Nürnl
further 7 sub-projects will start shortly (trade registration, information from the trade regis
vanity vehicle registration numbers, TÜV (Technical Control Board) registration, invitatior
tender/award of contracts, dustbin orders, citizen participation). The overview shows whi
projects are now being successfully transferred to other local communities.

Public-private partnership projects

In the virtual market place which is developing in the Nürnberg region (independently of
MEDIA@Komm), the prototype of an interactive electronic leisure and tourism agent nov
visitors with their questions. The user is automatically sent tourist information and propos
selected to suit his interests.
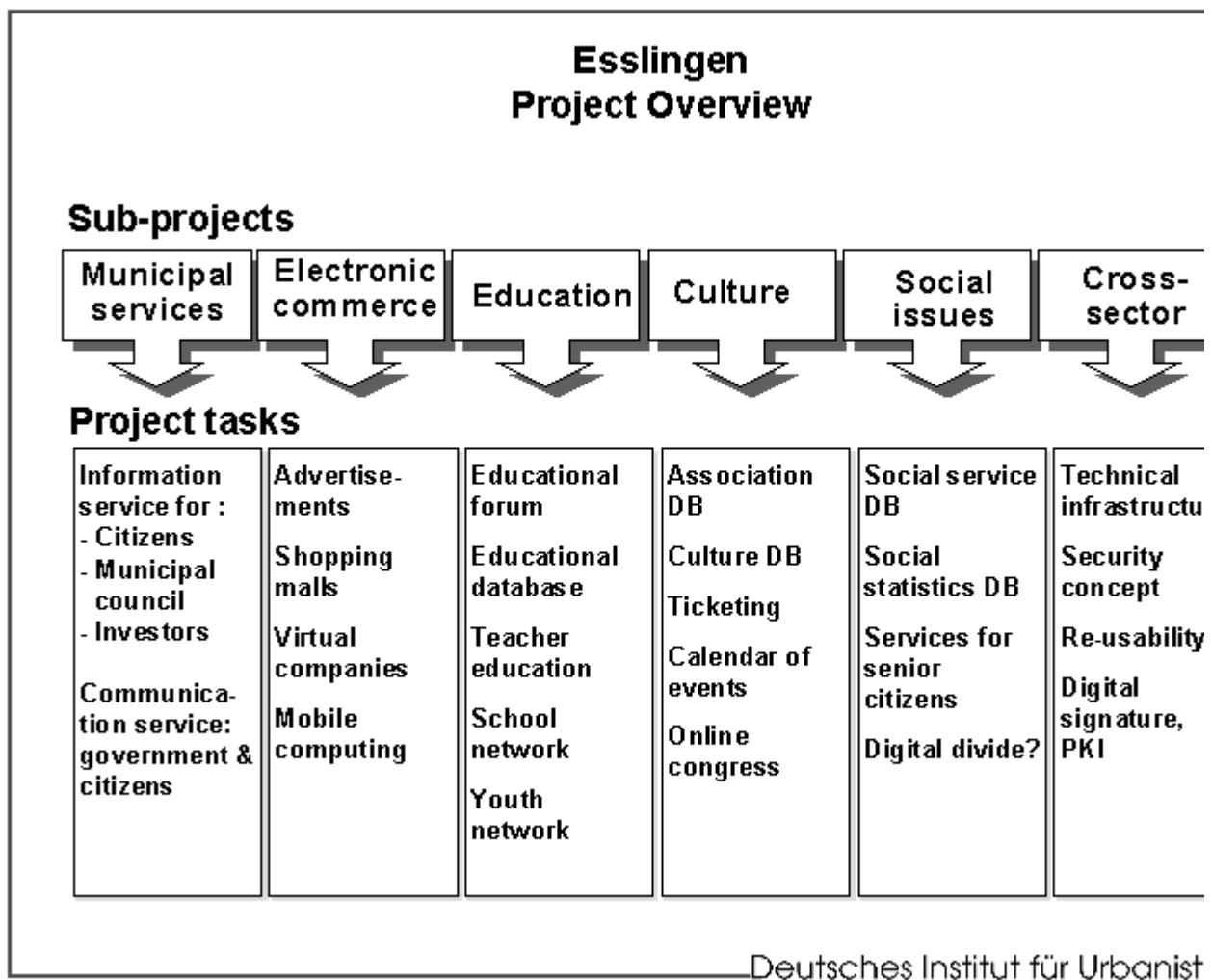
To ensure alternative access to the communal on-line information service for all groups (
population, a prototype is being developed for TV access via a set-top Internet box in
collaboration with a local major manufacturer of home electronic entertainment applianc
solutions will be presented at the end of the summer.

Esslingen

Goals and project structure

There are two special features of the projects in Esslingen: the underlying principle and t
starting situation. The "local community of citizens" is the principle behind all activities, a
aim is to strengthen citizen participation and involvement. This includes the goal of deve
away from a mere approval body and becoming a service provider for citizens and busin
A further major goal of the Esslingen project is to set the threshold for on-line use by the
as low as possible and to create a high degree of acceptance in the population, for exam
the use of signature cards.

With 80,000 inhabitants, Esslingen is the smallest of the municipalities in MEDIA@Komn
therefore has the ambition to develop solutions specifically for medium-sized towns. By c
with Bremen and Nürnberg, the computer infrastructure for the virtual town hall is still lar
available in Esslingen and Ostfildern. And the town information system www.esslingen.d
now being designed. This provides an opportunity to develop a homogeneous and integr
solution without the need to make allowances for any existing structures. At the same tin
information facilities must be developed to a far greater extent than in the other MEDIA@
municipalities to enable the "triangle" of information, communication and transactions in
Internet to be created.

**Esslingen
Project Overview**

Sub-projects

Municipal services	Electronic commerce	Education	Culture	Social issues	Cross-sector

Project tasks

Information service for : - Citizens - Municipal council - Investors Communication service: government & citizens	Advertise-ments Shopping malls Virtual companies Mobile computing	Educational forum Educational database Teacher education School network Youth network	Association DB Culture DB Ticketing Calendar of events Online congress	Social service DB Social statistics DB Services for senior citizens Digital divide?	Technical infrastructu Security concept Re-usability Digital signature, PKI

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Six sub-projects make up Mediakomm Esslingen:

- *Communal services.* After thorough analysis and definition of priorities for on-line s which are equally useful and attractive for citizens and the administration, informati services are to be established for citizens, business and the town council. The nam should not be misleading: in addition to information, the services should also includ communication and secure and legally binding on-line services. >
- *Education.* This sub-project includes, for example, the creation of an education foru an education database on the Internet, a school and education network and a yout network.
- *E-commerce and e-business.* This heading covers various individual projects such creation of a regional on-line shopping mall and a "small ad market" on the Interne Tele-cooperation in virtual companies is to be supported, WAP applications (mobil computing) should appeal especially to citizens involved in the business life of the community.
- *Culture.* Databases should provide an overview of the clubs and cultural life, and it be possible to buy tickets on-line. A further goal is to provide all-round on-line servi congresses in the region.
- *Social affairs.* Information is also the initial concern in the social sector, for exampl directories of social services or a social database. In addition, the project aims to p access for disadvantaged groups and to encourage the development of competen
- *Cross-section.* The base technologies and a basic infrastructure must be provided these projects and sectors. This includes the technical platform, the security conce

the preconditions for the use of digital signatures (PKI).

The responsibility for each sub-project lies with a different institution or company; the spo
body Mediakomm e.V. in Esslingen is responsible for communication.

Progress to date

To achieve goals such as greater transparency of the administration, customer orientatic
better accessibility for the citizen and faster handling of administrative procedures, the E
citizen information service ESSOS ("Esslingen On-line Service") was founded. In additio
catalogue of information, concerns from the areas of foreign residents, vehicles, trade ar
industry, children, social benefits and changes of address will be offered on-line under th
heading of life situations. Applications which are currently in the pilot project stage incluc
resident's parking permit applications, the trade register (registration, change of details,
deletion), information from the trade register, dog registration and deletion, dog tax and f
reports. The virtual lost property office is also already available on-line. Many other Interr
services are planned.

Since the summer of 2001, some citizen services have also been available for mobile ph
via WAP. For example, a mobile phone car park guidance system is heavily oriented tow
the users. This service can be accessed from anywhere at any time, and it provides infor
on the available space in the indoor car parks in Esslingen.

In accordance with the principle of the local community of citizens, projects have now be
implemented or are shortly to be implemented which provide information for the citizens
involve them in the process of discussion on developments in the town. Thus, citizen forr
have been set up on the Internet which enable interested persons to discuss topics relev
Esslingen. The zoning plan provides an even more practical example. The formal partici
of the citizens in the development of a new construction area in Esslingen was also
implemented via the Internet.

For construction projects an on-line planning approval procedure is also offered as a ne
service in which all information (plans, illustrations, correspondence) is available via an I
platform - after the user has identified himself with his digital signature. This can be usec
by the administration, the citizens, contractors and architects.

To counteract the "digital divide", projects such as the supervised citizen PC (Bürger-PC
were implemented, which particularly aims to help population groups in Esslingen with lit
experience of new media to make use of the Internet and digital signatures. At central pc
the town (e.g. in schools), PCs are available for the use of the public. They are equippec
standard software and have Internet access and signature card scanners. To ensure dal
security and confidentiality, each user is assigned his own profile which is created once i
location and then given to the user on a disk. The PC is configured so that whenever the
is rebooted, every user is presented with the original status from his disk, and the PC itse
contains no traces of the data of the previous user.

Great attention was attracted by the world's first legally binding on-line election of a publ
the Municipal Youth Council in Esslingen - which was (partly) carried out via the Internet
aid of digital signatures (from 9.7. to 12.7.2001). The on-line election fulfills all legal
requirements; the municipal regulations had to be adapted for this purpose.

Current issues

In the implementation of the individual projects in the towns and cities, it soon became a
that many questions are still unsolved, that progress depends on technical and economi
in many cases and that the legal and regulative framework is largely not yet in place to e
the goal of legally binding on-line transactions which are seamlessly integrated across di
media. Some important factors which are still being discussed in the complex area of
implementing e-government and e-commerce will now be enlarged on.

Diffusion of electronic signatures

From the outset, the towns and cities assumed that signature cards, which are earmarke
use in many areas, would become established in the market during the period covered b
project. This expectation was mainly addressed to the banks, and it was assumed that th
would add the digital signature to their EC cards, which are in widespread use in Germai
wish has not so far been fulfilled, which means that the distribution of signature cards is
and the price is still far above what citizens are willing to pay. The cards which are now a
on the market, which citizens can purchase from state-certified trust centres, are still ver
expensive. At present, the citizens must pay about DM 100.- for a card, plus an extra DN
for the necessary scanner. But there are still only very few applications for which the citiz
can use the card. Many on-line services - especially in e-commerce - can also be used v
the expensive card, which means that the card and the necessary infrastructure are still
expensive in relation to the benefits offered.

User friendliness and user benefit

A further problem lies in the lack of user-friendliness. At present, the cost and effort neec
be able to use a signature clearly outweighs the benefit, because there are not enough
applications for general use. Standardisation and interoperability questions also need to
dealt with, because the products which are available on the market at present are not
compatible

Creating a technical platform to handle on-line transactions

Creating the necessary technical platforms in towns and cities to enable on-line administ
services to be handled is not a trivial matter, as the experience of the MEDIA@Komm to
and cities has shown. Problems need to be solved in detail in every single application. T
design of on-line services and the task of integrating them into the various heterogeneou
departmental procedures in the administration, the integration of digital signatures and ir
cases the integration of electronic payment systems demands a major investment of time
can rarely be transferred to all towns and cities. Creating a standard for communal on-lin
transactions, such as that which Bremen is now working on, is a small step forwards.

Re-engineering processes in the administration

The great challenge for the administrations is to create ways of seamlessly integrating di
media for uninterrupted communication and work processes. This not only means restru
the individual departmental procedures and integrating digital signatures - the present wc
procedures must be taken back to the drawing board and subjected to a re-engineering p
This involves an examination of whether changes are necessary in the structure and pro
of the administrative departments themselves.

Statutory framework

The idea of offering on-line services completely by electronic means still causes problem a legal point of view because administrative procedure law is not yet adapted to the prac of such services. It is true that there are some areas in which written form (e.g. in applica is not required; a dustbin, for example, can basically be ordered from the administration phone or e-mail (principle of freedom of form in administrative procedures). But written f mandatory requirement in a whole range of administrative procedures. Here it remains to determined in which cases written form can be replaced by an electronic format, and wh security features will need to be maintained. It will probably take until the end of 2001 be proposed revision of the Act on Administrative Proceedings will solve this problem.

Conclusion

E-government is the buzzword of the moment, and many German towns and cities have realised that they should also offer their services to citizens on-line. On the one hand, th and cities could improve the quality of their services by enabling citizens to deal with the concerns around the clock, irrespective of opening hours and areas of responsibility. On other hand, this could also lead to gains in efficiency for the administration, because if su transactions can be carried in a seamlessly integrated network of different media, this cr considerable potential for savings. And in the competition between local communities, th Internet and multimedia facilities are an important location factor which affects the econo viability of the location and the promotion of business. For the towns and cities, the issue therefore not so much whether they should follow the e-government trend - the current discussion focuses more on the "How". However, e-government cannot be taken for gra from the point of view of the users. The difficulties have already been mentioned: the ex infrastructure and the scarcity of available applications mean that such systems cannot k adequately used - and are therefore not widely distributed.

If e-government for the citizens cannot yet be taken for granted, it is worth looking at e-commerce and asking whether the experience gained there gives any indication of wh secure transactions can become established at all. In e-commerce we must distinguish k two different business relationships: business-to-consumer and business-to-business. In business-to-consumer sector, on-line transactions are very often handled even without a absolute demand for security, based only on trust. To use on-line shopping services via Internet, all that is needed is trust that the provider that will deliver the goods in a reason condition, and a credit card to pay with. Although there is a trend here, too, towards secu transmission and secure payment, there is still a considerable difference between on-lin shopping and on-line public administration transactions in relation to the necessary requirements and the effort required to satisfy them. This is different in the business-to-b sector. On the platforms on which business companies handle their business dealings, tl confidentially of Internet communication and secure authenticity verification are more or essential, so software certificates and chip cards are widely used.

Until we know how the two areas considered here - e-government and e-commerce - wil develop in terms of acceptance, use and turnover, it will also be difficult to assess wheth German approach of aiming for the maximum degree of security by using chip cards will become established. But the MEDIA@Komm towns and cities are subsidised by the nati government for this very reason. The aim is for them to show where the problems lie, wh requirements need to be fulfilled and what detailed solutions are, in fact, possible.

In closing, I will now look at the link between e-government and e-commerce. Many Ger towns and cities are working on solutions for a virtual town hall and gathering experience

creation of virtual market places. In the Federal Republic of Germany - and in the whole there is currently a discussion on so-called portals which can provide access to both the administration and private service providers. The life situation concept which is being implemented in Bremen is based on the idea that, from the user's point of view, a variety information and transaction facilities (both private and public) need to be combined, and is the only way to create benefits for all. This supports the idea of merging administrative services and private services on a single platform, in other words treating virtual town ha virtual market places as a single entity.

It is not yet clear what criteria can be applied to decide whether a portal which combines areas can be regarded as economically viable. Towns and cities are not always able or v integrate private service providers into their municipal portals. Nor are they eager to integrate their services into the portals of private enterprises without any service in return. Experience are currently in progress to determine what forms of public-private partnerships could be successful for both sides.

The debate about portals also clearly shows that the implementation of virtual town halls not only involve questions of e-government - although even this presents a major challer the administrations because of the necessary internal reorganisation. In fact, virtual town have an effect on the entire economic situation of the towns and cities, and it is also nec to integrate private service providers, citizens and institutions into the social and cultural The public discussion in the towns and cities is only just beginning to move in this directi Much research is therefore still needed to obtain a clear picture of the interdependence factors for success in the relationship between e-commerce and e-government.