International Electronic Government Approaches

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Abstract
The most apparent proof of changes in the public sector because of modern information and communication technologies are electronic services like general online-information procurement or various inquiry possibilities which are made available to citizens by administration authorities and political institutions. Electronic Government causes an improvement of the relationship between administration, citizens and business. It includes all governmental measures at administrative levels (union, states and local governments) for qualitative improvements in citizen's different spheres of life and for optimization of business processes within the administration. Possible interaction partners in the area of Electronic Government are Government, Citizens / Customers and Business.

1. Introduction
Since the 1990's economies experience changes because of information and communication technologies [19,25,20]. These changes take place in the public sector too [29,26]. The use of information and communication technologies enables the development of Electronic Government and causes an improvement of the relationship between administration, citizens and business [38,30,46]. E-Government includes all administrative measures at all levels (union, states and local governments) to improve the requirement satisfaction for citizens (qualitative improvements in many spheres of life) and businesses and to optimize the business processes within the administration (structural changes). In reaching these targets there are used information and communication technologies [2,20,22]. Possible interaction partners in the area of Electronic Government are Government, Citizens / Customers and Business [32]. In section 1 of this work are shown the Electronic Government strategies and incentives of the top level of government. Secondly, there will be shown selected strategies of states and territories, like the New South Wales Initiative, the E-Government strategy of Canberra and the South Australia Strategy [5,8,11,14,15]. In section 2 there will be given a short overview about Electronic Government activities of the leading group within the European Union (EU) followed by a short description of initiatives of members of the European Union [22]. The main part will deal with Electronic Government strategies and incentives in Austria, a country which is one of the leading members within the EU in doing E-Government [2]. In section 3 can be found an overview about Electronic Government activities in Switzerland, because of its federalistic structure interesting for further comparisons. After stating governmental objectives there will be shown the concept of the Guichet virtuel, a portal which should enable access to all relevant information at all levels of government (union, cantons and communities) [3,9]. One interesting aspect would be to evaluate the different national strategies and draw up a ranking - European Union wide or worldwide. But all members of the European Union (and all other countries) deal in different ways with information technologies and Electronic Government. Therefore it will not be wise to compare the national strategies and to rate them with points. In section 4 there will be drawn up critical conditions for Electronic Government, like demand orientation and other general conditions followed by a short comparative view of the mentioned strategies and portals in the field of Electronic Government according to the relevant criterions.

2. State of the art

2.1. Australia - a pioneer in doing electronic government
Australia can be seen as a pioneer in doing Electronic Government. In the early 1990's Australia already has had a clear Electronic Government vision and began to
develop its own strategies for doing E-Government [4]. Today the administrative authorities of Australia - both at government top level and at the level of states and territories - can be seen as leading in the area of E-Government [17]. In this section firstly, there will be shown governmental initiatives for implementing E-Government. Secondly, there will be presented E-Government initiatives of selected states or territories.

**Governmental initiatives**

The Australian activities of E-Government can be found in all possible areas: information, interaction and transaction [4]. In 1994 there have been published different strategies for doing E-Government, followed by the formation of several governmental councils and departments like NISC (the National Information Services Council), the NOIE (the National Office for the Information Economy) or the OGO (the Office of Government Online) [35]. The purpose of forming several national institutions was to create conditions and to be able to take steps in enabling both the administration and its customers (citizens and business) to participate at the worldwide development of information technology [4].

The OGO develops strategies for information and communication technologies for the governmental top level. Among other things this institution has generated a metadata standard in 2000 [35,7]. One central portal should show references to most electronic services at all levels of administration (union, states and territories): online-auctions, general online business contacts online-payments, Government Information Center (GIC), Gatekeeper (strategy for implementation of public-key infrastructure), Commonwealth Procurement Online (CPO) and FedLink (Commonwealth Intranet) [21,21,35,11]. The FedLink is an cost-effective tool for secure communication between institutions in the government (departments, agencies, Ministerial offices and the Parliament) [21]. Figure 1 shows the FedLink tool.

**Electronic Government in Canberra**

Another E-Government approach has started the national administration of Canberra in the early 1990. There was developed the Austouch Citizen Information System which based on public touchscreen-kiosk systems. Today Austouch is an internet based platform which is shown in figure 3. It offers information about government and community services in Canberra and makes it possible for citizens to identify responsible agencies easily and...
making payments for the following areas: housing and land rates, business payments and commercial licences, motor vehicles, gazettes, publications and legislation, tickets, permits, bookings and fees [5,15].

**Figure 3: Canberra web portal**

Additionally there was implemented an Business - Gateway and the ATC Buyers and Sellers Information Service announcing online-auctions in the territory of Canberra [13,1].

**The South Australia Strategy**

South Australia has published in the early 1990 its first Information Economy Vision [24]. The national administration has aimed to integrated its citizens directly into the information management till 2002 [24]. The Information Economy Policy South Australia (IEPO) has the following priorities: economic output, education, health, infrastructure, legal requirements and local government [24,16]. In 1997 there was established the South Australia Central portal which includes references to all administrational and business WebSites and online-sources[24,41]. The Business Channel was established to make it possible for the business to do online-auctions with the administration [12,10]. With SA Tenders and Contracts it is possible to submit online offers for tenders [37].

### 2.2 Electronic government in the EU

In 1994 some members of the European Union began to formulate their specific strategies for the development of their national information society [25,18,46,28,43]. Some members like the Netherlands, Finland and Denmark started before 1994 with the announcement of reports and action plans [25,46,18,42]. Other countries started much later to deal with the new information and communication technologies. In 1996 Sweden, Germany and Luxembourg published strategies and national programs [18,45]. Most countries have chosen different ways in developing their own national strategies [18,19]. There were founded national committees for information society (Belgium, Finland), consulting institutions (Sweden, Ireland), committees of ministers (France, Spain, Greek, Portugal), public control committees for information technologies, (Ireland, Italy), groups of experts (Austria, Spain, Denmark, Netherlands) [46,25,20,19,18]. Most stated initiatives and strategies were basis for further discussion and not followed by concrete action plans [18,45]: Greek: first white paper in 1995, second white paper in 1999, no action plan. Italy: Government agenda in 1995, reference scheme in 1997, no action plan. Other countries like France or Austria prepared concrete action plan all after having published their first strategies [18,6]. Austria: first initiative in 1994, action plan in 1997. In the following section there will be shown how Electronic Government is realized in Austria, a country which is partly leading within the EU in doing E-Government.

**E-Government strategies in Austria**

There are three different supply models for doing Electronic Government: information, communication and transaction [43,36,32]. In most countries there is realized the first level: information [18]. In some countries you an find approaches of the second level: communication. Most of the time this communication is limited to offering e-mail functions for users. The third level - transaction - is not at all or not sufficient realized in the countries of the European Union [18]. In Austria there are realized services at level 1 (information) and level 2 (communication) in a sufficient way AND partly in level 3 (transaction) too [2,38]:

- information provision to citizens from the administration (citizen information systems)
- access for users to relevant data from a coordination authority (mostly for business relevant data)
- creating of value-added products (mainly for geographic information systems)

For the first level (information) Austria offers a very sufficient citizen / business information system with components for level 2 (communication): the information system [help.gv] [6]. Figure 4 shows the Austrian help.gv governmental portal.

**Figure 4: Austrian governmental portal**

With this tool there has been taken the first step in the area of Electronic Government. This information system is a classic example of how E-Government should be
done. Therefor some other countries, like Switzerland, have adopted the main ideas of help.gov for developing their own information systems [40,44]. The main ideas of the help.gov concept are as follows [6,18]:
- Creation of a Citizen Information System (divided into about forty spheres of life): the user can select from these topics organized in alphabetical order.
- Creation of a Business Information System (divided into different topics of business life): enterprises have the possibility to choose the appropriate topic for receiving the wanted information.
- Combining the two created information systems within one unique portal. The user can enter the help.gov portal and can choose whether to enter as a citizen for getting citizen related information or entering for getting business related information. Figure 5 shows the business information area of the Austrian help.gov portal:

Figure 5: Austrian business information portal

Within the scope of the citizen information part corresponding to the selected topic you can find the appropriate forms for download (information level) [6]. But there is still a media break in the chain of the processes of this Citizen Information System. Till now you can download the form, have to fill it out, give it to the corresponding authority which has to register your data separately. According to governmental strategies most mentioned media breaks should be eliminated till 2003 [18]. Having removed these media breaks the third sort of contact - the transaction - will be realized (planned for 2005) [2,18]. Additionally to the information procurement, you can contact administrational authorities via e-mail options (communication level) [6]. The Business Information System is organized in the same way as the Citizen Information System. You can search information corresponding to the appropriate topic, you can get information, download forms and contact administrational authorities. Transactions are realized partly, too [2]. In Austria there have been implemented electronic record archives in 2000 where all prepared records are available for specific members [2,23].

2.3 Electronic government in Switzerland

According to the strategies published in the Swiss area of Electronic Government there seems to be a strong dependence on the Austrian concept of help.gov [40,27,43,28,39]. Therefor the description of the Swiss way of dealing will Electronic Government will be accordingly shorter than the former sections. The main idea of Electronic Government is networking all governmental offers digitally [40,27,32]. Especially in federalistic structured countries, like Switzerland, citizens have to deal with heterogeneous cantons and local governments[32,45]. In this case a networking of all governmental offers is necessary for the functioning of electronic administration [29,27,28]. In 1998 the Swiss government has published a Strategy for the Information Society [43]. One instrument for reaching the targets of the strategy is the Guichet virtuel [31,29]. It is a web portal which will allow a customer oriented and service oriented access to the electronic administrational supply at all levels of government (administration, parliament, courts, union, cantons and local governments) [26]. The Guichet virtuel is a planned web portal; it will go online at the end of 2001 [44]. One aim of the Guichet virtuel is to improve the relationship between administration and citizens. The Guichet virtuel will not be a citizens information system like help.gov it is in Austria. Nevertheless, the main ideas of the Guichet virtuel are following the concept of the Austrian Information System [6]. The planned web portal will be an entry point for citizens and business in searching relevant information at the top level of government (union) or at the lower levels (cantons, local governments) [30]. There will be implemented a link system with references to already existing webpages of the union, single cantons or various local governments. The Guichet virtuel will be realized in three phases (information procurement (one-way communication), communication (interaction) and transaction) and structured in spheres of life like education, business, finances, health, government, security and society [30].

3. Critical conditions for electronic government

For the successful implementation of Electronic Government - Systems there exist some critical general conditions [2,19]. Principles are public access, possibility to select whether the conventional method of contact or the electronic one, prevention of abuse, creation of trust in the service's quality on the part of the users, measurements for adjusting the administrational processes (redesign or optimization of processes) [19,20]. Areas for reaching a sufficient development of E-Government are demand orientation of the services, organizational, legal
and technological conditions which will be explained in this section [2,19,20].

Demand orientation:
The demand for electronical governmental services has been proved empirical. The main interests of citizens as users of governmental services are simple and fast information procurement and transactions to simplify the contact to the governmental authorities. The use of electronic administrational services therefor should be demand and impact orientated. As criteria for the demand you can use empirical surveys, user-feedback-possibilities or the number of visitors or the volume of contacts to administrational authorities [2,19,23,20].

Organizational conditions:
Redesign of administrational processes and structures according to the New Public Management (NPM) approach: reform of tasks and structures as well as 'within' modernization for higher efficiency and better control of transactions. The premise is that the development of Electronic Government and the redesign of administrational processes and structures must agree with each other and have to be synchronized.

Coordination has to take place in three areas:
- Coordination of organizational and technological redesign
- Coordination of technical organization decisions at all level of Electronic Government
- Synchronization of internal (administrational) changes and external offers services of administration [2,19,22].

Legal conditions:
Mainly there should be met the following legal conditions:
- formulation of an information policy
- definition of rules for access and use of electronic services by citizens and businesses.
- Regulations about security infrastructure [2,19,22]

Technological conditions:
Use of modern information and communication technologies [25,19]. According to these general conditions the Electronic Government strategies of the above mentioned countries could be evaluated as shown in figure 6: There exists a lot of pro's and contra's within the area of Electronic Government. In Australia there should be more nation-wide coordination and synchronization, however in Austria there should be reached the transaction level much faster and in Switzerland where exists no concrete portal at all. There is no country you can say that there is reached a sufficient standard for E-Government applications.

<table>
<thead>
<tr>
<th>Critical conditions</th>
<th>Positive (+)</th>
<th>Negative (-)</th>
</tr>
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<tbody>
<tr>
<td><strong>Australia</strong></td>
<td></td>
<td></td>
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<tr>
<td>Demand orientation</td>
<td>early activities in the area of Electronic Government demand oriented offer of services, information-, communication-level realized, transaction level partly realized</td>
<td>less empirical surveys wide range of sometimes confusing procurement possibilities (portals) in all States and Territories no overall portal</td>
</tr>
<tr>
<td>Organizational conditions</td>
<td>concrete redesign initiatives coordination of organizational and technological redesign</td>
<td>Poor coordination of technical organization decisions</td>
</tr>
<tr>
<td>Legal conditions</td>
<td>information policy available regulation for access to administrative services good security infrastructure</td>
<td></td>
</tr>
<tr>
<td>Technological conditions</td>
<td>effective use of information and communication technologies</td>
<td></td>
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<tr>
<td><strong>Austria</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demand orientation</td>
<td>Sufficient surveys before doing E-Government Highly demand oriented Citizens Information System Information and communication levels realized, transactions planned Information System clearly arranged in two parts: citizens, business</td>
<td></td>
</tr>
<tr>
<td>Organizational conditions</td>
<td>Partly realized organizational redesign Sufficient coordination when redesigning Concrete strategies for redesign of processes and structures</td>
<td>Poor coordination of technical organization decisions</td>
</tr>
<tr>
<td>Legal conditions</td>
<td>Most regulations are formulated by the European Union (EU) information policy available regulation for access to administrative services good security infrastructure</td>
<td>Too less legal adjustments in the legislation for required E-Government security issues</td>
</tr>
<tr>
<td>Technological conditions</td>
<td>effective use of information and communication technologies (regulations by the EU)</td>
<td>Partly insufficient effectivity in using information and communication technologies</td>
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<tr>
<td><strong>Switzerland</strong></td>
<td></td>
<td></td>
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<tr>
<td>Demand orientation</td>
<td>Good surveys about citizens/users needs; high degree of demand orientation</td>
<td></td>
</tr>
<tr>
<td>Organizational conditions</td>
<td>Partly realized organizational redesign Sufficient coordination when redesigning</td>
<td>Web appearance of single local governments - national coordination too slow</td>
</tr>
<tr>
<td>Legal conditions</td>
<td>information policy available On average good legal adjustments to E-Government issues</td>
<td></td>
</tr>
<tr>
<td>Technological conditions</td>
<td>effective use of information and communication technologies</td>
<td>No concrete web portal available (online start at the end of 2001)</td>
</tr>
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</table>

Figure 6: critical conditions
4. Conclusion

Within this work was analyzed international E-Government applications with different aspects, like demand orientation, organizational, legal and technological conditions. For further analyses it will be necessary to consider additional critical circumstances, for example ergonomic factors or information content, and to analyze Electronic government approaches according to these conditions.

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