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## Vision and Valuation of a Citizen-Centric Shared Information Portal

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### **Abstract**

*The administrative burden the government puts on citizens is substantial, whereas, generally speaking, service levels are low and a 'customer' orientation is lacking. There is a growing understanding that e-government can play an important role in tackling these issues by better exchange of information and electronic availability. This paper reports on the development and evaluation of an e-government vision as part of a strategic planning trajectory for the social security sector and other government agencies in the Netherlands.*

*The vision approaches governmental service delivery from the citizen viewpoint and helps governmental organisations to take service- and citizen orientation to a higher level. The concepts used in the vision were tested by boardroom sessions as well as a survey, and has become the guiding principles for a number of e-government developments.*

### **1. Introduction**

Governmental agencies moving into electronic services face serious problems. Expectations have risen sky-high, primarily for political reasons and boosted further under the never-ending promises of information and communication technology. In the Netherlands, for example, the goal has been to have 65% of all government services on-line by the end of 2006, and 55% should be on-line by now. Figures that are hard to meet, albeit that the Dutch government is coming close (Overheid.nl, 2005).

Unfortunately the targets put on the governmental agencies in the Netherlands are described in terms of services and governmental products and not in terms of customer effects. As a consequence, the strategy of many agencies is to copy their current services and product portfolios one-to-one to the electronic domain. That means that in many e-government initiatives the potential of the electronic channel with respect to citizen-focus, service bundling, and acting as an integral channel of a multi-channel strategy is neglected. At the same time, citizens are becoming more and more spoiled, as they receive better and better services in the private sector.

There are major differences between the public and private sectors in this respect. Van Dijk (2002) describes the role of political regulation, the fact that government is its own referee, its monopolistic position, and the fact that the government is a gigantic complex of organisations instead of a single entity, as dominant factors. Despite the differences between the public and private sectors that complicate moving into electronic services, there is also an important driver for e-government: the government has an essential service responsibility to the citizen. More and more, boards of governmental institutions are becoming aware of that responsibility and try to live up to expectations. Also, there is a growing awareness that the use of the most efficient channel in communicating with customers can enhance the overall quality of service delivery, even in times of budget cuts (Scott, Golden, Hughes, 2004). In the Netherlands, for example, this has led to the formation of the so-called *Manifesto Group* (“Manifestgroep”) in which different autonomously organised governmental agencies (such as the Tax department, agencies responsible for unemployment and other social security institutions<sup>1</sup>) jointly develop and publish their e-service strategy. Moreover, they account for their activities to the public on a yearly basis.

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1 At the time of this research, the Manifestgroep consisted of CVZ (association for healthcare insurers), CWI (employment agency), IB Group (student funding), SVB (Dutch state pension department), Tax Department, and UWV (illness and unemployment registration). Recently, the Chambers of Commerce and the Land Registry (kadaster) have joined.



Figure 1. Impression of the MyGovernmentAdvisor mock-up.

This study was done in the context of the Manifestgroep. As part of their strategic planning activities they wanted to improve their e-service strategy for the years to come on the basis of a high-quality vision for the e-services in government. For this purpose, they asked Telematica Instituut to support them in this. Features of an effective vision statement may include (Wikipedia, 2005):

- Clarity and lack of ambiguity;
- Paint a vivid and clear picture;
- Describing a bright future (hope);
- Memorable and engaging expression;
- Realistic aspirations, achievable;
- Alignment with organisational values and culture;
- Time bound if it talks of achieving any goal or objective.

In order to become really effective, the vision statement should also be assimilated into the government culture.

We developed a framework to effectively choose the right level of ambition in their vision by taking the overall effect to the citizens as a starting point: this ambition level can vary with the level of integration between different agencies, the service level of government services and the type of functionality introduced. The framework was then translated into a concept called “MyGovernment Advisor” (Figure 1), an information oriented portal, structured through citizen life events, instead of governmental services (Bijlsma et al., 2005). This vision was represented in a mock-up, following three different citizen scenarios, in order to achieve the clarity, vividness, and experience required. The portal was partly inspired by the Canadian portal, that has held the leading position in the yearly e-government rankings over the last five years (Accenture, 2005), but potentially moves far beyond this.

The ambition level was then determined in a number of board-room sessions with each board of directors of the six parties participating in the Manifestgroep, also to align it with the organisational values and identify the possible time scale for the vision. In parallel, the vision was valued in a large citizen survey, supported by a short film based on the mock-up. Both gave evidence of substantial support to the vision.

In this paper we report on the development of the vision and its valuation. The contributions of this paper are more of a practical than of a theoretical nature. We develop a vision for e-government and validate this vision, which encompasses many different stands of research: security and privacy (e.g. Briggs et al., 2004), technology adoption (Rogers, 1995; Davies, 1989) and channel strategies (Steinfeld, 2002; Scott et al. 2004). We see little research in e-government taking this holistic approach as well, with Scott et al. (2004) as a possible exception, discussing an Irish case study. It was beyond the scope of the project, and thus beyond the scope of this paper, to analyse these foundations in detail. A current follow-up project called B-Dossier has the theoretical foundation as its main focus point.

After describing in more detail our research approach, we define the underlying concepts of “MyGovernmentAdvisor” and “citizen profile.” We then give the results of the two parallel valuations, and link these to known results from the literature. We conclude with the identification of new research questions and challenges and argue that this field is of great importance from both an ICT point of view as well as an organisational and sociological point of view.

## 2. Research Approach

Goal of the research was the development and validation of a citizen-centric vision on e-government, with an emphasis on the parties in the Manifestgroep. In order to achieve this, we went through three phases: a study phase, a development phase, and a valuation phase.

In *the study phase* we looked into the different strategies of the Manifestgroep partners. These turned out to be rather rudimentary, when analysed from the perspective of strategic planning. We then studied a number of national and international best practices, including healthcare in the Netherlands, the existing government portal “Overheid.nl”, the Canadian portal ([www.canada.ca](http://www.canada.ca)), and a number of European best practices selected from Millard & Iversen (2004). These examples, and e-business literature in general, provide a multitude of aspects to take into account. Quite common are maturity models, such as the Canadian model with a transactional and informational dimension. Scott, Golden and Hughes (2004) give agency collaboration and citizen centricity as central challenges. From these examples, given the fact that the re-use of information is a critical measurement factor in e-government in the Netherlands, two major factors influencing the vision were identified:

- the level of integration/collaboration of government services;
- the degree to which citizen related information is made transparent under the control of the citizen.

On the basis of these examples and best practices, the project team went through a number of brainstorm sessions. Taking the essential features of a vision statement into account, they started with the definition of three different user scenarios, featuring a specific (non-existing) citizen, Johan de Zwart. The reason for limiting to three scenarios was project size as well a target audience (managerial level in general cannot cope with too much detail). The three scenarios were mapped onto the two dimensions that span our search space (Table ).

Table 1: Positioning of scenarios in search space.

	Degree of Information transparency (none - full)		
Level of integration of services (high - low)			Scenario 3: Partially disabled
		Scenario 2: Unemployment	
	Scenario 1: Starting to study		

We chose to map the scenarios over the diagonal; as a result, we could cover both dimensions full with three scenarios. As a consequence, we had to leave out interesting combinations (such as no integration and full transparency) and had to deal with the fact that in moving from one ambition level to the next, two dimensions changed. This complicated the valuating phase.

The *development phase* concentrated on a mock-up covering all three scenarios (Bijlsma et al., 2004). The mock-up was built to run in a standard browser using html and Java. As the mock-up aims to address citizens as well as government organisations and civil servants, it showed both the service delivered to the customer, as well as the inter-organisational communication and information build-up within organisations (Figure 2) in two different panes. Both panes are linked and evolve synchronously.

In *the valuation phase*, two lines of activities were conducted in parallel as a means of triangulation (Myers, 1997): first of all a line to determine the ambition at board level in the participating agencies; this resulted in strong support for an ambition level with substantial information re-user, strong integration, but visibility of individual organisation (the second scenario in Table ). This scenario was then valuated in a large group of citizens. For the board level valuation, six group sessions were organised, one with each party in the Manifestgroep. At these sessions, the full board was present, as well as selected experts within the organisations. Each session was lead by a researcher and the secretary of the Manifestgroep. The sessions ranged from 45 minutes to 1,5 hours, and all started with the three scenarios. The scenario in mock-up was changed slightly for the

session at the healthcare party, in order to make it as appealing and challenging as for the other parties. The ambition levels in the scenarios were left unchanged.

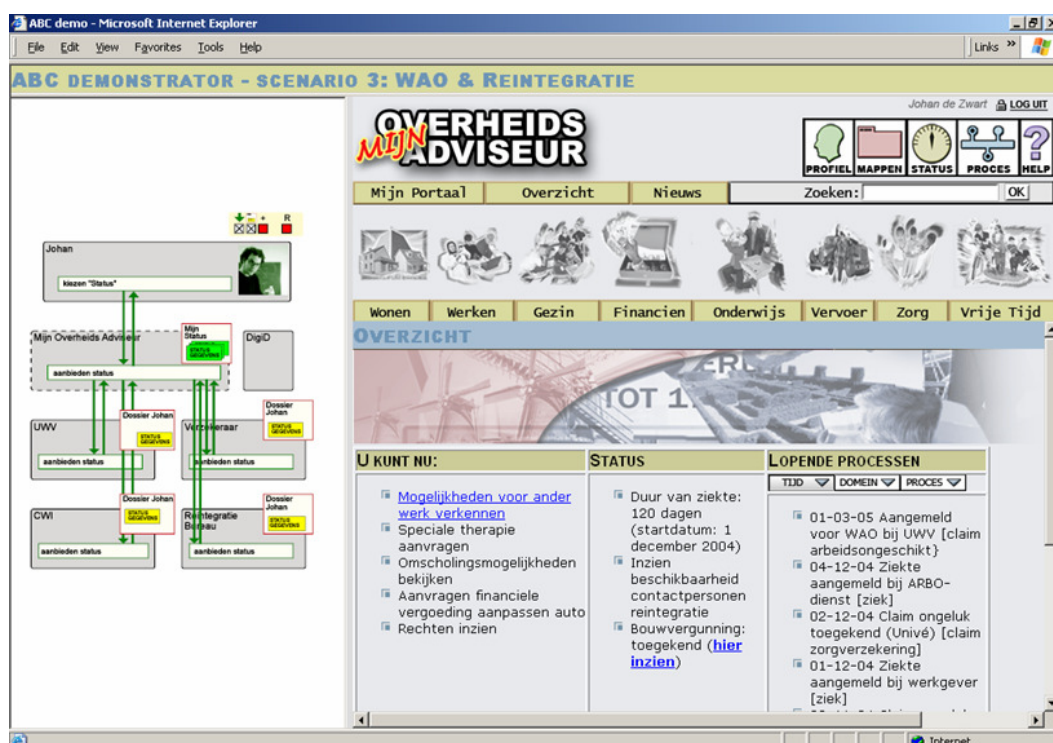


Figure 2: Structure of the mock-up, showing citizen portal (right pane) and inter-organisational communication, invisible to the citizen (in Dutch).

For the citizen valuation we used an internet-based survey carried out by NetPanel. In May/June 2005 a panel of 697 respondents answered a questionnaire to find out what their opinion was on the citizen centric, information oriented portal “MyGovernmentAdvisor”. These respondents came from a general public panel, called “Burger@overheid” that is asked for information on a regular basis. The panel consists of about 2.300 citizens, all competent in using the internet. Via an e-mail they are invited to participate in the survey. Part of the survey was a short film, discussing and showing the essence of the vision. Of the 2.265 person that were invited to the survey, 889 started the questionnaire, consisting of 30 questions, and 679 completed the questionnaire. This number was slightly less than usual response to the panel, due to the additional burden of playing the film. Still, the number is sufficient for reliable results, leading to a maximal uncertainty of 3,8% (Burger@Overheid, 2005).

### 3. A Citizen-Centric Shared Information Portal

In industry in general, citizen centric thinking is quite common, and concept of supply chain reversal has guided strategy in networks. In e-government, citizen thinking is relatively rare, especially due to the monopolistic position of governments in general. However, we definitely see a changing attitude in this respect, evoked by the guiding nations in e-government, such as Canada and Singapore. In our research, citizen centricity has been a starting point.

The question then is what makes up a good citizen centric approach. Accenture (2005) gives four different elements in customer relationship maturity: citizen-centred

interactions, cross-government interactions, multi-channel interactions, and proactive communications and education. The fact that communication will be multi-channel is not a point of discussion, as is the personalisation element in citizen centred interactions. These can be viewed as certainties, instead of uncertain factors. The level of cross-government communication and interaction is a difficult point. Given its highly distributed nature and the fact that privacy problems lurk everywhere makes integration an interesting factor.

In addition, there has been a lot of emphasis in the Netherlands on the fact that government repeatedly asks for information from citizens that, in one way or another, is already known. This annoyance has led to the fact that single time information delivery will become part of legislation in the coming year, formalising an aspired cultural change in government. For this reason, we have taken the “memory factor” as the second dimension in our framework.

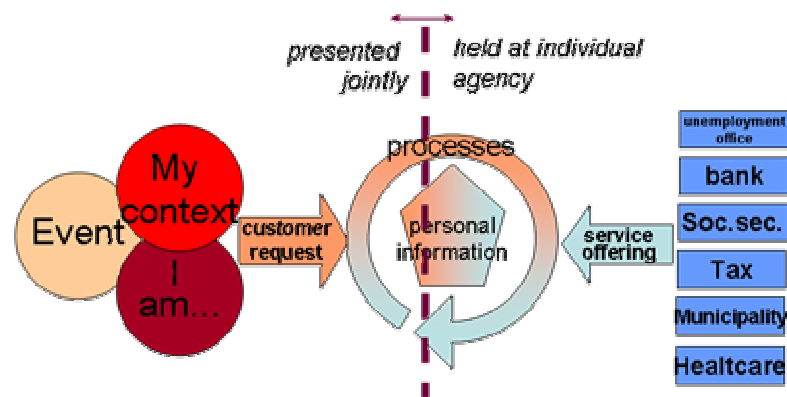


Figure 3: Conceptual basis of the citizen-centric portal

Combining these two factors (*integration* and *memory*) gave rise to the conceptual model in Figure 3. Citizens, as well companies for that matter, use a diversity of government services. The service request originates from a specific event or question, related to who and where a person is, lives etc. In responding to the request, many different governmental agencies have to co-operate. For example, if somebody becomes unemployed, he or she has to deal with the unemployment office, tax office, local government, social security agencies and so on. A whole value chain of organisations eventually is responsible.

In essence, the main question is to what degree different organisations are able and willing to share information about people and processes, in order to create a fully transparent e-government. We therefore define a *citizen-centric information portal* as a way to present all information regarding a citizen in a structured way, as a basis of effective, efficient and transparent electronic government services. There are two extreme implementations possible in this concept. One extreme is that all information is presented and disclosed in a uniform, transparent way, leading to an unambiguous citizen record. This means that all government organisations have to share information on person and processes, and have to resolve possible ambiguities and inconsistencies. It might even need changes in rules and regulations (e.g. in definitions of crucial concept such as house holds, or income). The other extreme is where hardly any information is shared, and the citizen is confronted with the inconsistencies, borders and inability to co-operate of different organisations, which is the dominant current way of working. Please note that presenting a uniform citizen record to a customer does not mean that all information has



to be stored in a central place. This would come close to the much criticized notion of a *digital vault* (see Hoepman, 2003, for example). The actual way of implementing this is still open (and is discussed later in this section).

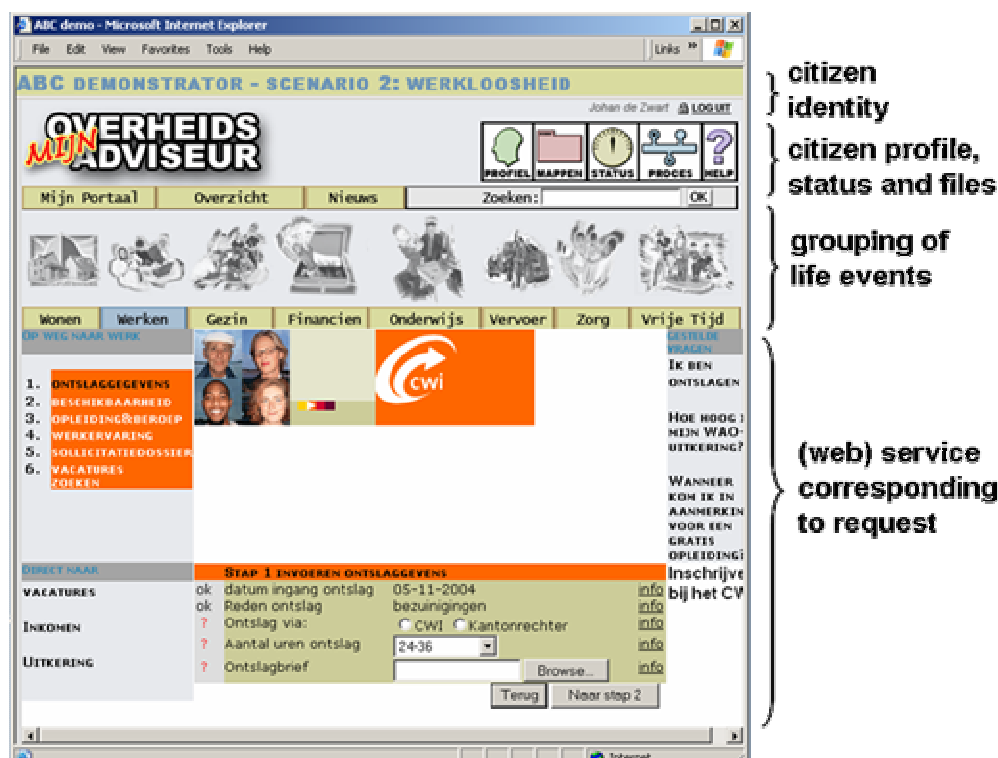


Figure 4: Main components of the information portal.

In order to be able to clearly communicate the consequence of an information-centric portal and its consequences to others, a mock-up of the portal was built. The portal takes life events, such as giving birth, starting to study, becoming unemployed etc. as main navigation structure, grouped into themes (working, living, health, culture etc.), similar to the Canadian portal (Government of Canada, 2004). In Figure 4 the main component of the portal have been identified in the image of Figure 1, representing the middle ambition level from Table . The portal is hosted by a fictitious organisation or service provider, My Government Advisor (“MijnOverheidsadviseur” in Dutch). The portal groups and links the services of the different organisational entities, or even hides the organisational entities when representing the highest ambition level.

A crucial element in the portal is the citizen profile, comprising personal data, personal files, the status of processes he or she is involved in, and an overview of the actual processes related to that status. It also allows the citizen to authorise governmental organisations to use this information in its services to the citizen. This is called informed consent, and can be regarded as a major factor generating trust in e-services (van der Geest, Pieterse & de Vries, 2005). Partly, authorisation is covered by legislation, allowing government agencies to share information directly, such as address information, income etc.. For other types of information or other types of (non-public) organisations, the citizen himself can allow sharing of information in order to improve service levels.

### 3.1 Design Issues of the Portal

The citizen-centric portal, and the profile concept within it, can be regarded as a specific instance of a more generic profile concept. Profiling and personalisation have been used successfully to enhance the customer satisfaction of services (van Vliet et al. 2005). Van Vliet et al. identify four major design dimensions for profiles: *interaction*, *control*, *remember*, and *linkage* (Table 1). The interaction issue refers to the way the profile is used in the service (in our case the portal), related to the trust and privacy issues. The control dimension refers to access and ownership of the data, and traceability of the use of information. In our concept this, amongst others, is represented by explicit authorisations. The remember dimension covers what exactly is part of the profile, and how to ensure interoperability between, possibly conflicting information sources. The linking dimension, finally, describes how different information sources, as well as processes, are linked, and how information is distributed, stored and cached in the government value chain.

Table 1. Design dimensions of user profiles.

INTERACTION ISSUE	CONTROL ISSUE	REMEMBER ISSUE	LINKING ISSUE
Trust	Access	Profile information	Interfaces
Legal	Ownership	Interoperability	Processes
Privacy	Organisational		Distribution
Profile use	Traceability		Recovery

Each and every aspect of these dimensions has to be tackled in the eventual implementation of the citizen centric portal, and many of these aspects are crucial in the acceptance of the concept by citizens and citizen servants. Also, the complexity of the four dimensions varies substantially under the ambition level chosen. Most obviously, if not re-use of information takes place, privacy hardly is an issue. With maximal re-use, privacy becomes the predominant issue. Also, the stronger integration between agencies becomes, the more important become the role of standard interfaces, process definitions across agencies and interoperability in general. Therefore, the actual scenario to be followed strongly determines acceptance and feasibility. The next section discusses the outcomes of the valuation of the concept, touching upon several of these aspects.

## 4. Valuating the Vision

As was discussed earlier, two parallel trajectories were followed to value the vision and to come to an understanding of the ambition level, including major factors for acceptance. First of all, a series of sessions was undertaken with each board of directors of the six parties involved in the Manifestgroep. The reason to address the board of director directly was the fact that they as a whole are responsible for the strategy and e-strategy of the organisation. Therefore, they should decide on the ambition level taken.

There was a substantial consensus in the results of the sessions:

- every organisation agreed that the intermediary level was most appropriate, given the high citizen service level, in combination with direct accountability and visibility of the individual institutions;
- all agreed that the portal should be complemented with face to face meetings and personal interaction, and that different portals could lead to the same services;

- the gains of introducing the portal were estimated as substantial, more than ten million euros per year for an individual organisation;
- every organisation recognised the need to co-operate with others, yet emphasised its own individuality at the same time; a need for joint infrastructure services, such as authentication and looking into external sources, was definitely felt;
- most organisations felt that co-operation with private companies, such as banks, could play a positive role in acceptance and use.

Organisations also disagreed on a number of topics:

- technical feasibility was perceived very diversely. Whereas some organisations regarded the intermediate level as very near (becoming effective in 2005/2006), others regarded even to lowest level as beyond scope in the next two to three years;
- there was a big difference in sense of urgency, largely due to the differences in background of the organisations. Some were in the middle of large transformations and re-organisations, whereas others were in a relatively quiet period. The latter was much more open to this development, obviously;
- there was a substantial diversity in culture: some organisations were very much dominated by the CEO and his agenda, whereas in other organisations the CIO or even the officers responsible for services or customer contact were prevailing. This leads to a completely different perception of the concept, either as an opportunity to create higher service level, or as a means to reduce cost or increase internal efficacy.

The second valuation trajectory covered citizens. They answered questions regarding the middle ambition level, illustrated by an 8 minute film explaining the mock-up. Almost 700 internet-enabled citizens participated. The characteristics of this group were as follows: more than once per month the respondents use government sites, especially through search engines. Finding information was regarded problematic for 70%, and about 65% of the people feel irritated by repeatedly filling in data already known to the government. No information was gathered regarding age, sex, or education of the respondents.

The most important outcomes of that valuation were.

#### *Goals and functions*

- More than half of the respondents (57%) has a positive attitude with respect to the concept, whereas only 10% holds a negative position.
- Advantages that people mention include one-time filling in of data, speed, time-saving, working from home, and insight in the status of processes and agencies.
- Disadvantages mention primarily concerns with privacy and volatility of the data. Also, the lack of personal contact was regarded a disadvantage, and finally, the possibility of information misuse by the government itself.

#### *Range of services*

- 34% of all respondents would like to restrict the services to government organisations, whereas 39% would like to include other, non-commercial organisations, such as schools and hospitals.
- Only 10% would like private organisations to offer services through the portal, and 17% does not care what choice is taken.

- The large majority of respondents would like to see what information is known about them at the tax department (91%) and at the municipality (90%). Also, electronic patient records and social security agencies score high (63-72%).
- More than one third of all respondents (35%) would regularly like to check whether or not data is correct. 27% would primarily like to use the data in services from the government.

#### *Trust and control*

- banks (56%), notaries (54%), and the tax department (50%) were trusted best to control the portal;
- municipalities and the central government scored slightly less (35% trust, 25% distrust);
- commercial parties, including software companies, are generally not trusted for this type of services.

#### *Prerequisites for use*

- personal control over who can access the data (38%);
- traceability of use of data (31%);
- freedom of choice of channel used (27%);
- personalised information (20%)
- status updates and information (19%).

In both valuations, the positive attitude is dominant. In the survey, people that saw the film even were much more positive (68%) than average. This shows the important role of an effective (clear, vivid, etc.) vision statement. Both boards as well as the respondents emphasised the physical channel in relation to the electronic channel: a pure-play electronic service delivery is not possible, as the government has the obligation to deliver services to everybody, also those who do not have access to the internet. This synergy has been discussed in literature to a large extent, yet hardly for government (Steinfeld, 2002, and Scott et al. 2004 in an e-government setting).

Synergy between public and private services is not supported by the valuation. There is not a general positive feeling towards public private co-operation in the portal, contradicting an assumption we made in the development phase. This would require more research, also related to the trust issue.

Trust is an important factor in this concept, which is supported by the survey. Warenkin et al. (2002) already studied trust in the context of e-government. They conclude that institution-based trust is the major tactic to build trust in e-government. In addition, among new users of online government services, characteristic-based and cognitive-based antecedents should be crucial; general psychological dispositions and knowledge of the process should also engender trust. Among experienced users, on the other hand, they suggest that the nature of previous interactions with the e-government system should be the major predictor of trust, and hence of continued use. The latter suggests a very careful introduction of services. The former would suggest a further investigation of the factors mentioned in the survey, such as control, traceability, and freedom of choice. The high ranking of control in the survey is also supported by research into “informed consent” as a means to build trust and improve acceptance (van der Geest, Pieterse & de Vries, 2005). Briggs et al. (2004) suggest that there is a reciprocal relationship between trust and personalisation: personalisation generates trust. This is partly support by our findings:

personalisation is a prerequisite, but it is dominated by control, traceability and freedom of choice.

## **5. Realising the Vision: Conclusion and Further Research**

In the valuation evidence was gathered that both government organisations as well as citizens have high expectations of a citizen centric information portal. The general concept appeals and sufficient institutional trust exists to make a successful introduction possible, in principle. The question then still remains how to introduce the concept, as other research shows that trust can easily be destroyed. At the same time, a too modest introduction of the concept can restrict the added value too much, hampering acceptance as well.

It is still rather unclear what the exact factors are that determine acceptance. General innovation of technology acceptance theories, such as diffusion of innovation by Rogers (1995), or TAM by as proposed by Davis (1989) might be applied. According to Rogers the innovation-decision process of an individual (or other decision making unit) passes from first knowledge, to forming an attitude, to a decision to adopt or reject, to implementation and use, and to confirmation of this decision. The theory suggests the perceived innovation characteristics are one important explanation of the rate of adoption of innovations. The innovation characteristics are relative advantage, compatibility, complexity, trialability, and observability. Quite a few of these characteristics relate to prerequisites gathered in our survey. However, we expect that a more complicated model is needed to explain (and predict) acceptance, including elements of trust and the bundle of services presented. Research into these factors is needed, and is foreseen in a follow-up project that is currently running, where user trials are done on the basis of a refined acceptance framework. An interesting question in this follow-up research is how to deal with different user segments. Van Dijk (2002) makes a distinction between the information elite, the electronic middle class, and the digital illiterates. Usually, the information elite is the fastest in adopting new ICT developments. At the same time, they have a very critical attitude with respect to privacy. This introduces the so-called diffusion paradox (Pieterse, Ebbers, van Dijk, 2005). Effective strategies to overcome this paradox have to be developed.

Ingredients for this strategy we foresee are:

- take into account the different senses of urgency in organisations: start with a smaller group of leading organisations;
- this strategy has to be aligned with the internal agenda's of those organisations. A high-risk/high-gain development as proposed here will not be supported in itself, but has to build upon existing momentum;
- early trials to get a better insight into the citizen behaviour, as well as the acceptance at the civil servant side is regarded essential;
- open standards and service oriented architectures will provide a basis for an open, evolutionary development of the concept. On the semantic level a large standardisation effort is still needed.
- careful selection of the agency to control the development is a prerequisite. As yet, there is not a single obvious existing agency to do so.

It is clear that the citizen centric portal development presented here is a very innovative and promising approach to e-government. As such, it is unparalleled in the world, to the best of our knowledge. Co-operation between government agencies and universities in the

Netherlands as well as internationally will be crucial for a successful introduction of the service concept. We look forward to the years to come.

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