2 Organisational motives and barriers for user profiling[3]

2.1 Introduction

For organisations, user profiling is a means to restore the traditional personal relationship of e.g. shop owners with their neighbourhood customers, in contemporary social and technological forms. Building personal relationships occurs in the last stage of the evolving marketing, retail and governance approaches after the industrial revolution (Beniger, 1986). This evolution has shown three stages:

1. The stage of *mass marketing, mass communication and mass advertising,* starting at the end of the 19th century, in which customers and citizens were approached as an undivided mass;
2. The stage of *group segmentation, group tailoring and group customisation,* starting after the Second World War, in which target groups of consumers and citizens were approached with direct marketing and persuasion techniques;
3. The stage of *individual* or *one-to-one relationship marketing, tailoring and customisation* of market and government products and services, starting in the 1980s, enabled by new social and technical infrastructures and ICT.

Despite the increase in personalisation and individualisation, mass communication and mass advertising and group segmentation are still widespread. Our mail boxes are flooded with mailings on the basis of postal code segmentation, not on the basis of information about us as individuals.

The last stage is a result of several social, economic and technological developments combined:

- The *individualisation* of (post)modern society, turning individuals into core units of society;
- Accompanying individual and highly *selective tastes and preferences* of customers, clients and citizens;
- Increasing *economic competition*, created by overproduction and sales problems necessitating the 'hunt' for each customer;
- Division of products, services and their creation in *components or fragments,* enabling more opportunities of choice and re-combination;
- The technological innovation of *interactive channels* of communication and commerce, enabling one-to-one relationships between suppliers and customers;
- The resulting opportunity of a *reversal of the value chain* (the shift from supply to demand);

It is important to note that these three stages are neither completely separate nor successive. In an integrated communication strategy, they all have their own value and effect in approaching customers and citizens. User profiling will not become accepted without mass information campaigns and advertising or without favourable reviews of the use of profiles in the mass media. It does not work without group segmentation or direct marketing either: the step between the mass of consumers and citizens on the one hand and the individual on the other is simply too big. Hence a focused (target) group approach is a necessary stage of the implementation process of user profiling.

[3] Authors: W.E. Ebbers, J.A.G.M. van Dijk & W.J. Pieterson

2.2 Research questions, main concepts and theories

There is simply no specific theory available about user profiling in organisations. Each onset of such a theory departs from the general stages and societal or economic trends as summarised in the introduction of this chapter. At present, we are in the stage of concept formation, conceptual model building and creating the first specific statements concerning user profiling. These statements deal with the basic objectives of profiling, the differences between types of organisations and with initial opportunities and obstacles of user profiling.

The following research questions will be addressed in this chapter:

- *What are the main objectives of organisations, both private and public, for engaging in user profiling?*
- *What are the differences and similarities between public and private organisations in this respect?*
- *Which obstacles can be distinguished that impede the adoption and implementation of user profiles by organisations, both public and private?*
- *What opportunities of user profiling can be listed that emerge from current trends of user profiling?*

2.2.1 Objectives of public and private organisations

The description in the introduction of this chapter suggests that the evolution of marketing, retail and governance applies to both public and private organisations. Their aims with regard to user profiling are more similar than they are different. The three basic aims of user profiling discussed in Chapter 1 are:

- Making communication more efficient and effective (for both consumers and citizens);
- Predicting user behaviour (both the purchases of consumers and the claims to rights of citizens);
- Influencing behaviour (both persuading consumers to purchase and citizens to comply with the law).

Both private and public organisations must build up a sound, longstanding relationship with their customers and citizens. That relationship is created and maintained by efficient and effective communication. With regards to private organisations, clients will not return if their service expectations are not met. This will eventually lead to decreasing sales. Basically, the same also applies to governments: the Weberian principle teaches us that governments wield power over subjects, but that power is only theirs for as long as subjects allow it (Weber, 1970).

User profiling has additional objectives. It gives those organisations offering electronic services the possibility to gain insight into the behaviour of individual users and influence them at the same time. This is the second and third objective that organisations can have for user profiling. If organisations have sufficient knowledge about their customers or citizens and are able to apply the knowledge in persuasive strategies, then they stand a better chance of organisational success. Customers will continue buying or using products and services, and citizens will be inclined more to comply with the law and only lay claim to those resources to which they are truly entitled.

2.2.2 Different conditions for user profiling in the private and public sector

Although private and public organisations may have similar aims with user profiling, their conditions for employing user profiling are fundamentally different (J.A.G.M. van Dijk, 2002, pp. 218-220).

1. Public organisations are guided by *political regulation*, leading to equal rights for citizens, whereas businesses are guided by *market regulation* and differentiate between valued and less-valued customers. Businesses can afford to simply ignore less-valued customers. Public organisations have to offer their services to each citizen on an equal basis. Businesses can concentrate on the best customers that have access to technology and are motivated to use opportunities, such as those offered by user profiling. Moreover, though the private sector is restricted by consumer laws and self-regulation when applying user profiling, the public sector is much more regulated. For example, in many countries privacy regulations are much stricter for government agencies than for businesses. These two factors, (in-)equality in treating customers or citizens and the different status of regulations, will give the private sector an advantage in the innovative use of user profiling.

2. The government is a *referee on its own playing field* of policy, management and services. It controls its own behaviour in its approach to citizens. This also means that it can enforce new laws and regulations relatively easily and quickly. This also goes for the applications of user profiling that are highly sensitive with regard to privacy and security. For example, after September 11, 2001, the American government was able to adopt the Patriot Act in only a few months. This led to highly advanced uses of data mining and user profiling of potential suspects of terrorism, thereby passing every government privacy rule and using the latest techniques developed in the corporate sector where fewer such rules exist (see for example GAO, 2004).

3. Unlike most businesses, the government is not a simple or straightforward organisation but a *gigantic complex of organisations* on all levels and of all kinds. This means that the databases in the public sector steering each application of user profiling are more complicated (highly regulated), encompassing (every citizen) and fragmented (a collection of basic registrations with own standards, techniques, rules, supervisions and managements) than those in the private sector. Although the integration of databases also poses problems to the private sector, the extent of these problems is incomparable to the problems envisaged in the public sector. At present, all kinds of official citizen and business registrations are being standardised and linked in networks. However, the linkage of all databases is a huge operation that will require decades. The effect of this different state of affairs is that - at least for the time being - the public sector is much more preoccupied with issues concerning organisation, regulation and standardisation whereas the business sector is able to go ahead with innovative use of user profiling on a limited though more advanced scale.

4. The final difference of interest here is - to a certain extent - the government's need for *citizen participation and political supervision* in new media development, whereas the private sector has no need for this at all. This is related to the first difference, though it has important consequences in its own right. On the one hand it offers the private sector the opportunity to go ahead with innovation without any concern or consultation. On the other hand it means that the opportunities of informed consent, considered to be one of the potential solutions or compromises with regard to the introduction of user profiling in this report, are much better in the public than in the private sector.

In comparison with the public sector, the private sector made considerable progress with the tailoring of products and services in the course of the 20th century. The drive to reach individual consumers was simply much stronger than the drive for governments to communicate with individual citizens. Customers can choose where to buy products and services and businesses need to sell their products and shall therefore always compete with their competitors for the favour of the customer. Conversely, governments can expect citizens to abide by the law (or find and punish those who don't). Therefore, market research, bookkeeping and records of buying and selling have dominated corporate activities for the past 150 years. Considerable experience in database management and marketing has thus been acquired. Every innovation in the stages described in the introduction of this chapter originates from the corporate sector. The corporate sector has invented technologies of group segmentation, direct marketing, market research, individual customer relationship marketing etc. In contrast, the government lacks the experience with those innovations but has on the other hand accumulated considerable experience with compiling and maintaining enormous registrations of citizens, real estates, enterprises etc. It has therefore become an expert in using personal information on an enormous scale, for example in printed and electronic forms.

In the course of the 1990s, public opinion, political pressure and competition (e.g. losing services through privatisation) forced government departments to become more user-oriented towards their citizens or clients, to integrate their fragmented service counters, to save on the administrative costs imposed on citizens and corporations and to supply all kinds of user-driven electronic applications. Suddenly, government departments adopted all kinds of customisation technologies from the commercial sectors in order to become more service-oriented and user-centred (see for example Bekkers, 2000). In the first decade of the 21st century, however, attention and priorities have again shifted to law enforcement and security issues. Nowadays, both objectives, i.e. user-driven electronic services and screening or surveillance applications, fuel the need for government user profiling.

In the diverse areas of the corporate sector, the need to follow the three-stage evolution towards individual customisation has differed greatly from the start. The service sector underwent considerable growth during the 20th century and has an 'innate' need for individual tailoring and evaluation. This applies to physical services, such as health care but even more to immaterial services such as information and communication. Production sectors, in comparison, have been satisfied for a long time with group segmentation of customers solely to be able to react more flexibly to product demand. The rise of personal computing and the Internet, leading to electronic commerce (e-commerce) has enabled all companies in all sectors to develop more tailored services. This led to consumers demanding an individual service level on top of the basic service requirements concerning the distribution of material goods. A perfect example are the

electronic individual services of Amazon.com offers 'on top of' the traditional (material) book distribution process.

2.2.3 Specific objectives of user profiling

The United States General Accounting Office (2004a) listed the objectives of data mining and user profiling of *government agencies* in 2004 in the following six categories:

1. improving service or performance
2. detecting fraud, waste, and abuse
3. analysing scientific and research information
4. managing human resources (employee information)
5. detecting criminal activities or patterns
6. analysing intelligence and detecting terrorist activities.

Categories 1-4 are also specific objectives of the private sector. The first is by far the most important. It originates from the tradition of market research and has been developed in detailed methods of retail and supply chain analyses for the sectors of production and distribution and methods of customer relationship marketing for the consumption sector. Individual user profiles have been developed mostly for customer relationship marketing (see chapter 4).

2.2.3.1 Improving the relationship with the client

Considering the increase in the number of web pages, the Internet is an enormous success. However, the immeasurable number of internet pages and the increasing number of electronic services linked to web pages also have their drawback. Flooded as they are with electronic services, users suffer information overload and meet huge selection problems (Pierrakos, Paliouras, Papatheodorou, & Spyropoulos, 2003).

Issues such as information overload and selectivity are certainly a problem for private organisations that are strongly focussed on the finding and retaining of clients (see e.g. van Duivenboden & Lips, 2002). Therefore, they will have to make a considerable effort to appeal to (potential) clients who visit their websites. After all, these visitors are only a mouse click away from their competitors.

A successful way of appealing to website users is the development of e-services in which the focus of attention is on the user and the supply of customised or personalised services (see e.g. Mobasher, Cooley, & Srivastava, 1999). The idea behind this is not new. Addressing the specific requests of customers was already familiar as the 'outside-in' approach in marketing. Underlying this attention to customer satisfaction is the motive to create and maintain a long-term relationship (see e.g. Kotler & Armstrong, 2001). This applies even more to direct marketing and customer relationship management (CRM) because of the individual's prominent role in these fields.

At first sight, governments are not engaged in free competition (van Duivenboden & Lips, 2002). Therefore their clients are not able to go to a competitor. One might expect that governments need not worry about service quality levels, since citizens cannot leave; however, this proves not to be true. Increasingly, customers of commercial services will compare these to the quality of public services and will expect the same service levels from both public and private organisations. So, it is no coincidence that in many

countries (see section 2.2.4) governments are pursuing a more client-oriented approach of their electronic services. In many cases this occurs on the basis of two motives:

1. Political pressure enforces better access to the multitude of government e-services in the shape of integrated virtual counters combining services that formerly had to be provided by separate departments.
2. Political pressure also demands a strong decrease in administrative costs and red tape for citizens and businesses as well as for governments themselves. To this end, the number of questions and the delivery of data of citizens and businesses to the government must be strongly reduced. The underlying thought is that this is possible by (electronic) fine-tuning of all data interchange processes of citizens or businesses on the one hand and governments on the other.

2.2.3.2 Insight and influence

As has been argued above, user profiling is not only about improving the relationship with the client. There are two more aims of user profiling, namely to give organisations the opportunity to gain insight into the behaviour of individual users and influence them at the same time.

For the organisation offering a service, user profiling has the advantage that it enables the organisation to track the user 'from behind the scenes'. Thus, the organisation is able, with or without the user's permission, to see which information the user reads, how long it takes him to do this, in which order he visits sections of a website, which functions he uses, and which services or products he purchases (see e.g. Privacy International, 2004). Using the collected and already known user-related information, clients' behaviour is made much more visible and might even be influenced. User profiling enables private organisations to offer a much more tailored approach, offering a client products and service that are addressed to his personal needs. This increases the chances of a client actually accepting what he is offered. A well-known and often praised example is Amazon, which - after a customer has bought a book - will draw his attention to other books purchased by buyers of that same book in the hope that he will also buy them. Another way of direct influencing is by stimulating users to surf to certain websites by addressing them personally in advertisements, often via so-called pop-ups or banners. This is happening more and more frequently via spyware, software that analyses the online behaviour of individual users and sends these analyses to advertising agencies (see e.g. www.spywareinfo.com or www.staysafeonline.info).

For governments, it is just as important to gain insight into the behaviour of citizens and businesses as for private organisations. As has been explained above, the types of behaviour that are being inferred and influenced differ from those in private organisations. Whereas private organisations are sales- or profit oriented, for governments it is much more about upholding and enforcing rules and regulations, during which they will also be confronted with citizens and businesses not wanting or being unable to abide by the law. Some people or companies, after all, make illicit use of certain provisions such as subsidies and benefits. The more accurate the insight into who uses what, why and on which grounds, the greater the chances of preventing or controlling abuse.

That the government has a growing need for these facts and figures can unmistakably be concluded from the fact that in many countries the privacy rules are being increasingly 'stretched', whereby it must be noted that this *seems* to be motivated by the fight against terrorism. Think for example of the American Patriot Act. The word 'seems' is used here

on purpose, because combating terrorism is certainly not the only motive to stretch privacy regulations. This becomes apparent from the lobbying taking place in Europe for the further harmonisation of investigative practices. The 'Draft Framework Decision on retention of data, etc.' of the French, British, Swedish and Irish governments, addressed to the EU, advocates the use of data of, for example, internet providers for 'prevention, investigation, detection and prosecution of crime or criminal offence including terrorism' (Council of the European Union, 2004, p.8).

Citizens who make (too) little or no use of their rights and corresponding government services are being increasingly approached with pro-active services. Examples of this are unsolicited information about the possibility of rent subsidy for citizens with low incomes and - since 2004 - the filling in of the provisional tax rebate by the Dutch Tax Administration itself. This demands even more adequate and properly linked files with personal details. User profiling could greatly advance pro-active services, namely by notifying the citizens of their potential rights and transforming the administrative load of filling in forms into simply checking, adding or updating information.

User profiling for governments thus not only supports the prevention of a crime such as fraud. Governments can also employ it, albeit in a controlled and enforced manner, to draw citizens' and businesses' individual attention to their legal duties and rights. A good example of this is the electronic income tax return software of the Dutch Tax Administration This programme is context sensitive, which is to say that some data are no longer requested when it is obvious, from earlier questions, that they are not relevant. This not only makes things easier for the tax payer, but it also makes a huge difference in the number of mistakes made whilst filling in the tax form.

2.3 Organisational obstacles to user profiling

In this chapter, the objectives and motives behind the interests of organisations in offering individuals electronic services with the aid of user profiling are being discussed. What follows is a list of potential obstacles that impede user profiling in organisations. There are four groups of obstacles: financial obstacles; organisational obstacles; technical obstacles and legal obstacles. Both the technical and legal obstacles fall beyond the scope of this report and shall therefore not be discussed (legal obstacles) or just briefly (technical).

2.3.1 Financial/commercial obstacles

The first obstacle is about the investment needed. Although off-the-shelf e-commerce software offering customisation is already on the market, the available software is often too expensive for small- and medium-sized enterprises (Schubert & Leimstoll, 2004). Return on investment may be too low to adopt and implement user profiling, although it needs to be stressed that many innovations were only adopted after being initially rejected because of low or even negative return on investment predictions. Adopting an innovation after initial rejection occurs, for example, in reaction to the pressure caused by the number of adopters amongst competitors (Abrahamson & Rosenkopf, 1993), or because of fear of losing stakeholder support (Meyer & Rowan, 1977).

This observation seems to imply that the returns on investment in segmentation, customisation and personalisation technologies and operations are exactly predicted and calculated and that effects such as higher performance are measured. But this is certainly not the case. The introduction of these technologies and operations is a matter of trial and

error. Failures are simply forgotten and covered in the budget; successes are hailed and continued without knowing exactly why and how they achieved this success. In our State of the Art investigation of user profiling we have barely encountered any solid quantitative or qualitative evaluation of returns on investment of personalisation technologies. On the contrary, we did find a source where doubts are pronounced about the returns in terms of more sales and higher consumer satisfaction (http://www.marketingonline.nl/nieuws/index2005-6.html). This calls for the need of descriptive surveys and empirical studies of the financial and commercial effects of user profiling and its preceding technologies.

The second financial obstacle is the large amount of wrong, irrelevant and worthless data that user profiling can yield. This can render the entire approach unprofitable. Moreover, in retaliation to the endless registration (whether or not with one's permission) and the concurrent violation of one's privacy, users are increasingly surfing anonymously or under a pseudonym (see Chapter 8).

A final possible financial obstacle, not for profiling but for *cross-domain* profiling, may be whether or not organisations are willing to share or sell information of their consumer database with other organisations, since in the information age this kind of strategic information is very valuable and a key component to 'outsmart' competitors.

2.3.2 Organisational obstacles

Offering tailored services might imply that the user is given an important role in the way the business process is designed and implemented. It is even possible to give customers access to all kinds of back-office systems, for example to place an order directly in the organisation's back-office or to enable the users to control and maintain the user profile themselves, instead of the organisation (James, 2000). This means that an organisation's production and logistical processes must be able to cope with it. If that is not the case, the information systems (see below) and the processes will have to be redesigned. In general, redesign processes and reorganisations are complicated and they cost (at least) time and money (see for instance Accountancy, 1996; Silverman & Weinstein, 1997). In one way or another, these costs will have to be considered in the investment proposal

Another organisational obstacle, in cross-domain user profiling is the question who is responsible for what. Who will keep the user profile up-to-date? Who is entitled to make changes? In these circumstances it is necessary that there are clear procedures and processes to indicate which department and which officials (and how) have access and are responsible for an electronic file. The painstaking introduction of the Electronic Patient Record is proof that it is not always easy to agree on standards and processes etc., (Berg, 2001).

2.3.3 Technical obstacles

This report does not focus on the technical issues involved in user profiling; these will be addressed in other deliverables within the Alter Ego project. Nevertheless, given the fact that technology and behaviour are closely related in user profiling, some technical obstacles (from a behavioural perspective) shall be discussed here.

Wieringa, Blanken, Fokkinga, and Grefen (2003) divide the total sum of information systems into three different service layers: an application systems layer, an implementation platform layer, and a physical network layer. The application systems

layer supports or fully performs parts of the services and business processes. The implementation platform layer supports the application systems layer. It is software that assists in running the application software, ranging from operating systems, middleware and network software to database management software. The physical network layer contains the physical infrastructures that support the implementation platform layer and the application systems layer. As mentioned above, the application systems layer supports or performs parts of the services. Consequently, the implementation of tailored services or the transformation of existing services into tailored services demands that a particular application is added to or changed within the application systems layer. From time to time, as it supports the application layer, this causes changes within the implementation platform layer too. And occasionally, changes in the physical network structure are also required.

Nowadays, many organisations have so-called legacy information systems (Tapscott & Caston, 1993). Legacy information systems have been inherited from computer languages, platforms and techniques contained in older generations of hardware and software (www.search390.com). Many legacy information systems are not, or not sufficiently, interoperable, which means that applications in the application systems layer are unable to work with one another or with the supporting implementation and/or network layer (Tapscott & Caston, 1993). This might create great obstacles to the implementation of tailored services.

2.4 Trends and examples of user profiling in private and public organisations

In the following paragraphs some trends and examples of public and private organisations using personalised e-services based on user profiles will be presented.

2.4.1 Trends and examples in the private sector

The most well-known and widespread form of tailoring in the private sector is **website personalisation**. Examples of this type of tailoring are everywhere. When you log in on sites like Amazon.com or eBay, you will be personally welcomed. Although website personalisation has existed for quite some time, the really advanced applications of personalisation are not yet that widespread, although they are being developed rapidly. Two examples can illustrate the use of website personalisation.

Example 1: MyYahoo!
Yahoo! was one of the first sites on the Web to use personalisation on a large scale, most notably with its My Yahoo! Application, introduced in July 1996. My Yahoo ! (my.yahoo.com) is a customised personal copy of Yahoo!. Users can select from hundreds of modules, such as news, stock process, weather and sport scores, and have them presented on their Yahoo! portal. The actual content for each module is then updated automatically, so users can see what they want to see in the order they want to see it. This provides users with the latest information on every subject, but only those specific items they want to know about.

On the basis of the user profile, some of the content of My Yahoo! is personalised automatically. An example is a sports module that lists the teams in the user's area after obtaining that information from the user profile.

Example 2: American Airlines
American Airlines' website (AA.com) can be adapted in a split second, so that each of the 1.5 million registered users is offered a unique personal experience.

After logging in, you are offered personalised services that are based on your user profile, like news, tailored information and offerings. The site will even offer you a special holiday in the period your children are free from school.
(derived from: Peppers and Rogers, 2000)

The second trend is **Recommender systems**. A growing number of commercial websites are using recommender systems to help their customers identify products that appear to suit their taste. A recommender system learns from a customer and recommends products that (s)he will find the most valuable among the available products (Huang, Chung, & Chen, 2003; Schafer, Konstan, & Riedl, 1999; Zeng, Xing, Zhou, & Zheng, 2004). The forms of recommendation include suggesting products to the consumer, providing personalized product information, summarising community opinion, and providing community critiques (Schafer, Konstan, & Riedl, 2001). Examples of organisations that use recommender systems are Amazon, CDNow, eBay, Levis, moviefinder.com and reel.com. Such systems might help to convert browsers to buyers, increasing cross-selling and building customer loyalty (Schafer et al., 2001).

From browsers to buyers: Visitors to a website often browse without ever buying anything. Recommender systems can help customers find products they wish to purchase. *Increasing cross-selling*: Recommender systems improve cross-selling by suggesting additional products for the customer to purchase. If the recommendations are good, the average order size should increase. For instance, a site might recommend additional products in the checkout process based on products already in the shopping cart. *Building customer loyalty*: In a world where a business' competitors are only a click or two away, gaining customer loyalty is an essential business strategy. Recommender systems enhance loyalty by adding value to the relationship between the business and its customer. Organisations that invest in learning about their users, use recommender systems to improve that learning, and present custom interfaces that match customer needs. Customers reward these sites by returning to the ones that best match their needs. Example 3 shows Amazon's use of recommender systems. Example 4 shows how SkiEurope, a successful online travel broker, uses personalised data to make holiday recommendations.

Example 3: Amazon.com
When you search for a book and purchase it on Amazon, the company recommends you other books. Amazon uses an advanced system that analyses your buying history, your preferences and your user-related data, to offer books you might desire. Besides, Amazon compares you to others that have a user profile that is similar or comparable to yours and recommends books that those similar others have bought, or searched for. This feature is called the "customers who bought" feature. This feature has been implemented by many other businesses following Amazon's example. (see: Blackwell, Miniard and Engel, 2001; Sterne, 2001; Schafer et al. 1999)

Example 4: SkiEurope (www.ski-europe.com)
SkiEurope, an online travel agency uses recommendation technology to guide online customers through the decision-making process without human assistance. To give good recommendations to users, SkiEurope uses three levels of user data:

- preferences explicitly stated by the visitor (such as fine dining or night skiing)
- behaviour (e.g. the pages the visitor visits and what actions (s)he takes after entering her/his profile)
- context (like travel times)

The recommendation strategy has proven to be very profitable for SkiEurope: Site visitors using the matching engine are 70 percent more likely to purchase vacation packages than those that do not. And customer feedback has been overwhelmingly favourable.
(see: Rogers, 2001)

The integrated web portal. An increasing number of private organisations offer web portals that are personal, where customers can find information and communicate with the organisation and where transactions can be completed. The portal is a single point of access for communication and transactions with the organisations. The most well-known examples are web portals of banks such as 'mijn Rabobank' and 'mijn Postbank'[4]. These full web portals not only allow users to do transactions, but also to check statuses (like bank balances), create and delete accounts. Portals as single point of access imply that not only front-offices of organisations have to be integrated, but back-offices as well. Especially when various organisations or departments of organisations work together in one portal, the integration of back-offices can be very problematic.

Example 5: MijnPostbank.nl
MijnPostbank.nl is a personalized website, with personal access on the basis of a user-id/password combination that is chosen by the users. Any transaction requires the use of a Transaction Authorisation Number. Whereas these used to be distributed in lists of 100 (via snail-mail), Postbank now offers to send these via SMS, at the moment of the transaction.

The MijnPostbank.nl portal offers users a full overview of all Postbank products and allows the user to reverse transactions and to view one year of transaction history. (see: www.mijnpostbank.nl)

Spyware. The fourth and final trend refers to a form of personalisation that is not wanted by most people, i.e. spyware, cookies and other software that collect personal information. There are several large media companies that offer software companies to place banner ads in their products in exchange for a portion of the revenue from banner sales. This way, software, often called adware, can be offered for free or for a lower price. The downside is that the advertising companies also install additional tracking software on a user's system, which continuously 'calls home' using one's internet connection and reports usage data to the media company (www.spychecker.com/spyware.html). Spyware has surpassed viruses as the number one threat facing one's computer today. Most estimates report that over 90 percent of computers have already been infiltrated by spyware (eMediaWire, 2004; Naraine, 2004).

[4] See: www.mijnrabobank.nl and www.mijnpostbank.nl

Spyware not only uses adware to infect computers, but also via file-sharing programs or peer-to-peer networking programs such as Kazaa (Lliet, 2004). Spyware is a major trend in getting customised information from users. However, most of the time the collection of customised information occurs without the consent of the user, hence the name spyware.

2.4.2 Trends and examples in the public sector

While private sector companies have already embraced some of its components, tailoring is a relatively new technological innovation with regard to the public sector (Hinnant & O'looney, 2003). The actions of the European e-government program (eEurope 2005), for instance, merely focus on the implementation of transaction services. eEurope 2005 does not mention personalisation or customisation of electronic government services. With regard to the eEurope program, personalisation did not make an appearance until September 2004, and then only in an indirect and barely formal way, namely as a result of a conference chaired by the Dutch in which the recommendation was made (Information Society, 2004) for the further improvement and continuance of the eEurope 2005 program. The recommendation suggested opting for a more user-centred approach; it also pleaded for administrative burden relief (Information Society). This latter issue is politically sensitive and is therefore no longer mentioned in official e-government plans for Europe. In a 'Communication on Challenges for the European Information Society beyond 2005' dating from November 2004, administrative burden relief is only mentioned as (still) being a priority, as is the one-stop shop e-government for citizens (European Commission, 2004).

Some departments of the American government go further than the European Union when it comes to *not* adopting user profiling. The general American e-government portal blatantly refuses to practise user profiling and is not secretive about it. The privacy and security statute on firstgov.gov explicitly states: "Our privacy policy is plain and simple. We collect NO personal information like names or addresses when you visit our website… We never create individual profiles." (http://www.firstgov.gov/About/Privacy_Security.html). That is not to say that American governmental agencies completely ignore user profiling. On the contrary, since 9-11-2001 many security services are collecting user-related data and are building user profiles (see section 2.2.1).

Several other national governments and states have started to offer personalised electronic services by means of user profiling, not for security reasons but to improve service quality. Examples of actually implemented customised services can be found for instance in Belgium, where citizens can securely access a wide range of e-government applications through a single sign-on on the federal e-government portal (www.belgium.be) and are able to create a personal profile. Another example is the government portal in Dubai, which citizens can access via a single log-in facility. At the end of 2004, the portal of Dubai offers more than 600 informative and transactional services (www.dubai.nl). Canada also enables customisation. The Canadian government portal www.canada.gc.ca allows all individuals (not only Canadian citizens) to create their own customised page according to their own individual interests and needs.

Other customisation features can be found on e-government portals of:
- Catalonia (www.cat365.net);
- the Czech Republic (portal.gov.cz) ;
- Denmark (www.virk.dk);
- Singapore (my.ecitizen.gov.sg).

Although the American national government refuses to collect personal data, individual American states are developing user profiling applications. The State of New Jersey, in cooperation with the Rutgers University for example, is developing an e-government portal based on user profiles (see for information, demo's etc: http://cimic.rutgers.edu/dgov/index.html).

In the Netherlands steps are being taken by various public organisations to realise personalised electronic government services. In some cases they have already been implemented, albeit in a limited way. The Dutch developments in the area of personalised electronic government services can be divided in three main areas:
A. Infrastructural facilities;
B. Organisation-specific personalised electronic services;
C. Government-encompassing personalised electronic services.

Infrastructural facilities
Infrastructural facilities are those supporting facilities that specific governmental organisations employ to offer their services in a personalised way. At the moment these include identification and authentication facilities on the one hand, and the so-called basic registrations (such as addresses) for people and businesses on the other.

- An identification and authentication facility is being constructed under the title DiGID. This is a central identification and authentication facility for the internet services of the government. From 1 January 2005, citizens will be able to log in to the websites of various governmental organisations by means of a user name and password supplied by DiGID (www.digid.nl).
- The governmental information is at the moment distributed over thirty thousand national, provincial and municipal databases. The Dutch national government considers six of these authentic registrations as being so important that they have been categorised as the so-called basic registrations. They contain the basic registration of citizens and the register of businesses.

For these basic registrations, a large-scale reorganisation is taking place with the objective of collecting, information on a once-only basis. The collected citizen and business information can then be used in various locations within the government, e.g. for delivering a personalised electronic service (see e.g. www.stroomlijningbasisgegevens.nl and Adviescommissie Modernisering GBA, 2001). The distribution of DiGID codes depends on the basic registration of citizens.

Organisation-specific personalised electronic services
A number of specific public organisations are already offering personalised services, such as the municipality of Enschede (loket.enschede.nl), de municipality of Doorn and the Informatie Beheergroep (www.ibgroep.nl). Also the Dutch Tax Administration offers an electronic personalised service to entrepreneurs for filling in (part of) their tax forms, and allowing them to follow the taxation procedure (see http://www.belastingdienst.nl/home/actueel/2004112601.htm). However, these are all still quite elementary forms of electronic services. They serve to check one's personal data or to see the current status of transactions.

Government-encompassing personalised electronic services
The developments in the field of inter-organisational or government-encompassing electronic services are still budding. In 2001, in a recommendation for the improvement of municipal basic registration, the Snellen Committee advised supplying citizens with a Digital Safe for their personal data (Adviescommissie Modernisering GBA, 2001). At the time, much criticism was given at this proposal by both the Commission for the Protection of Personal Data and opposition parties (Netkwesties, 2001). At the end of 2004, however, there existed less opposition among members of Parliament. At a general meeting on 3 November 2004, MPs indicated being in favour of a Digital Safe and said to be disappointed if this would be deleted from the plans.

At this moment, it is particularly in the government-to-business domain that work is underway to install government-encompassing personalised electronic services. Most of the initiatives are driven by the need to reduce administrative burdens, such as with the business portal (www.bedrijvenloket.nl), a digital information medium that can be accessed via all government websites, where it will also be possible to carry out transactions (i.e. via electronic forms) and the Government Transaction Portal, the so-called 'digital post office of the government', where businesses can send all compulsory data under government regulations. The Government Transaction Portal will carry out large-scale processing of data traffic and then pass the data on to all the relevant government organisations (see http://www.ictal.nl/, and Burg, Biesheuvel, Jansen, & Winne, 2004).

2.5 Conclusions

1) We are in the early stages of user profiling. Until now, there exists no specific theory on user profiling in organisations. Nevertheless there are three main reasons why organisations might want to engage in user profiling:
- Make communication more efficient and effective;
- Predict user behaviour (both the number of purchases by consumers and the claims to rights by citizens);
- Influence behaviour (both persuading consumers to buy and citizens to comply and to behave in a lawful, proper or healthy manner).

2) Although the objectives for user profiling apply to both private and public organisations, there is a difference in the way various organisations employ it. This is primarily due to the different conditions under which they have to operate. The public sector is bound by much stricter rules of privacy and security than the private sector. Due to the heterogeneous composition of many organisations, the public sector is much more complex than private companies. Therefore, public organisations face far greater difficulties in linking/combining the underlying data into a user profile. Moreover, the public sector cannot target a specific group through user profiling, but has to give each

citizen and business equal access. All these restrictions for governmental agencies result in governments lagging behind the private sector when it comes to employing user profiling.

3) Both the public and the private sector are confronted with a number of obstacles which impede the introduction of personalising electronic services:

- Financial and economical obstacles;
- Organisational obstacles;
- Technical obstacles;
- Legal obstacles.

4) Hardly any solid quantitative or qualitative evaluation of returns on investment of user profiling in the corporate sector has been found in this exploration. This calls for more descriptive surveys and empirical studies to measure the real effects of user profiling in the private sector.