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Enhancing Public Service User Experience in Information Society

Master Thesis

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Thesis has been supervised by PhD David Lamas

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Abstract

Users nowadays are no more satisfied only with the useful functions of a product, but rather expecting pleasure and satisfaction. Since the 2000s the new forms of online communities and social networking are changing the logic of the Internet, that is creating pressure also on governments to follow the Web 2.0 trends. Although over the last few year we witnessed the appearance of public sector in social media such as Facebook and Twitter, it still seems governments are not really realizing the potential of Web 2.0 technologies. Until now public organizations have been using Web 2.0 mainly to communicate their activities to the public, but we do not really have many success stories utilizing social media in public service provision. As users are no more satisfied only with the pragmatic attributes of a product as useful functions, but also expecting pleasure and satisfaction, the thesis explores how governments can benefit from Web 2.0 features in order to provide enhanced service experience. The results show that some of the Web 2.0 features are perceived as highly appealing in online public service use referring to their ability to stimulate the innate human need for personal development or addressing a personal need of expressing oneself and being perceived by others in a certain way.

Keywords: User Experience, Hedonic product quality, eGovernment 2.0, Web 2.0, Evaluation.

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1 Introduction

The number of global Internet subscribers is approaching the 2 billion mark and the importance of Internet as a means to enhance social contacts is growing dramatically in all industries including gaming, entertainment, shopping, news etc.

Governments around the World are pushing hard as well to catch up with the business sector developments. Since the Internet boom in the late 1990s high levels of eGovernment spending has become a norm to guarantee the transparency, effectiveness and efficiency of eGovernment. Still, despite of the resources spent in developing eGovernment services, the progress on the eGovernment appears to have stalled. New eGovernment initiatives have neither generated enough interest among users nor enabled clear gains in efficiency (Baumgarten and Chui, 2009).

Estonia, one of the fort-runners in eGovernment with the overall Internet penetration rate of 76 percent and at the age group of 16-49 years even as high as 94 percent (TNS Emor, 2010), is facing a similar situation. National Audit Office of Estonia report (2010) on the quality of public services in the Information Society, examining convenience and easy use of electronic public services, concluded that compared to 2007 the quality of public e-services has not improved significantly.

The latest report on citizens' satisfaction with public sector e-services revealed, although 75% of the Internet users declare they are satisfied with the public sector e-services, their belief in service usefulness has declined (TNS Emor, 2010). According to the report in 2010 less public sector e-service users believe e-services have helped them to obtain their desired information or answer faster, saved money or they have received more and better information (ibid.) The cause of this recession might be due to the more knowledgeable users who have heightened expectations based on the integration of the Internet into their everyday life and work (Baumgarten and Chui, 2009). Users nowadays are no more satisfied only with the pragmatic attributes of a product as useful functions, rather expecting pleasure and satisfaction (hedonic attributes). Norman (2010) suggests that it is time to make sure that products and services are pleasurable as well.

It was roughly ten years after the so-called Great Internet Explosion, when the numbers of subscribers to Web 2.0 applications started to grow exponentially. Anttiroiko (2010) argues for this shift has created pressure on governments to follow the Web 2.0 trends more carefully and to start considering how to utilize the available Web 2.0 applications and particularly how to utilize the wisdom of crowds in the public service and governance processes, which are expected to increase the responsiveness of public organizations.

Although over the last few year we can witness the public sector appearance to social media (e.g Facebook, Youtube, Twitter etc.), it seems governments are not really realizing the potential of Web 2.0 technologies in order to deliver more pleasurable and satisfying services. Until now public organizations have been using Web 2.0 mainly to communicate their activities to the public and some of these with great success, e.g US President Obama election campaign though social media in 2008, but we do not really have many success stories using social media in public service provision.

1.1 Purpose of the Study

The theses aims to identify how governments could triumph from the rise of the Web 2.0 in developing public services in information society. The key research problem can be summarized as: can governments benefit from the Web 2.0 features in order to provide enhancing service experience?

1.2 Research Questions

For the scope of the thesis, the following were identified as concrete research goals:

(1) What is the impact of Web 2.0 in user experience?
(2) How are governments using Web 2.0?
(3) How does incorporating Web 2.0 features enhance the online public service experience?

1.3 Thesis methodology and structure

In order to understand users' perceptions, an assessment survey on user experience was conducted with genuine web users of *Minu Viljandi*[1], a Government 2.0 website. The survey was aimed at evaluating reflective user experience and carried out. First quantitative data regarding need fulfillment and product qualities was collected via user questionnaire and secondly AttrakDiff[2] instrument is used for measuring the attractiveness of the product.

The structure of the master's thesis is the following:

- literature overview concentrates on determining the main concepts based on earlier research;
- the research chapter describes the used research methods, test users, and tested application.
- the results of the study and the analysis of the results concentrates on answering the are presented in results chapter.
- at the end of the thesis, conclusions of the study and final results are presented. Also possible future research is discussed.

[1] Minu Viljandi website- http://minu.viljandi.ee

[2] AttrakDiff evaluates and compares the hedonic and pragmatic quality of interactive products. Retrieved from www.attrakdiff.de

2 Literature review

In this chapter the concepts of User Experience (UX), Web 2.0 and eGovernment are defined and discussed based on earlier research.

2.1 User Experience

User Experience (UX) refers to a concept that places the end-user at the focal point of design and development efforts. Online service providers now need to think beyond basic concepts of functionality and ease-of-use and consider the emotional experiences that their services engender.

Hassenzahl and Tractinsky (2006) argue for UX has became a buzzword in the field of human- computer interaction (HCI) and interaction design. As technology has matured, interactive products have became not only more useful and usable, but also fashionable, fascinating things to desire. Driven by the impression that a narrow focus on interactive products as tools does not capture the variety and emerging aspects of technology use, practitioners and researchers alike, seem to readily embrace the notion of UX as a viable alternative to traditional HCI.

Driven by the requirements of the consumer product market, Logan (1994) was first to formulate a notion of emotional usability, which complements traditional "behavioral" usability. He defined emotional usability as "the degree to which a product is desirable or serves a need beyond the [...] functional objective". It is to be understood as "an expanded definition of needs and requirements, such as fun, excitement and appeal" (Logan et al., 1994) Still the term “User Experience” was brought to a wider knowledge by Donald Norman (1995) in HCI conference when referring to aspects of human interface research and application as the “User Experience.”

Experience design was grounded in Csikszentmihalyi’s seminal work on the nature of human experience. Csikszentmihalyi (2002) explains satisfying experience - which he calls “flow experience” - as a delicate balance located somewhere between challenge and fulfillment. He found that we are most satisfied when we engage in challenging activities

that require a level of skill that is not so great as to produce anxiety but not so limited as to induce boredom. Similarly, we are most satisfied when we experience control as possibility rather than as actuality, "not the sense of being in control, but the sense of exercising control in difficult situations" (Csikszentmihalyi, 2002). Experience design builds upon this fundamental understanding of human experience.

One way to approach the concept of UX is to understand it as addressing needs beyond the mere practical level, i.e. doing (Hassenzahl, 2007). In other words, UX differs from traditional usability with respect to its focus on both do-goals and be-goals. Hassenzahl (2003) argues for that interactive products are perceived by their users/owners with regard to their capability to fulfill *do-goals* and *be-goals*. In other words, product attributes related to usability, such as 'easy', 'predictable', or 'clear', signal the potential fulfillment of particular do-goals and linked be-goals, whereas attributes, such as 'cool', 'beautiful', or 'original', signal direct fulfillment of be-goals. Studies (e.g. Hassenzahl et al. 2000; Hassenzahl, 2004) show that people perceive pragmatic and hedonic aspects as independent of each other. Thus, people may perceive products as *primarily hedonic* (a be-product), *primarily pragmatic* (a do-product), *both* or *even neither hedonic nor pragmatic*.

2.1.1 User experience framework

The key elements of UX and their functional relations have been modeled by Hassenzahl below.

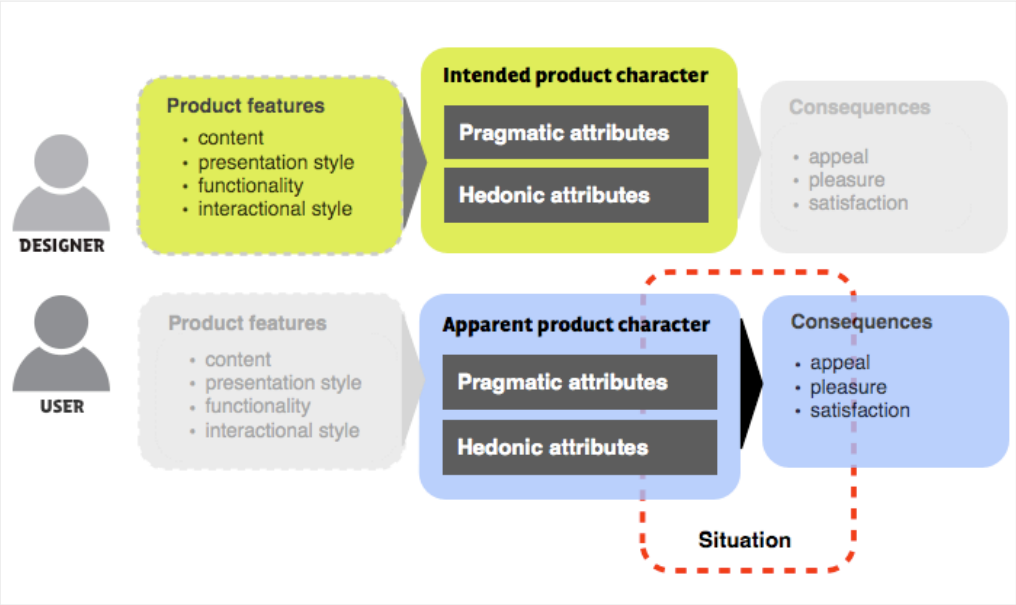


Figure 2-1. User experience model (Hassenzahl, 2003)

According to the model (Hassenzahl, 2003) designer fabricates intended product character by choosing subjectively certain features to convey a certain *intended* product character hoping users will perceive and appreciate the product the way designer intended. The function of the product character is to reduce cognitive complexity and to trigger particular strategies for handling the product.

Users conduct an individual vision of a product character and make judgements about the product when coming to a contact with it (Figure 2-2). When user comes to a contact with a product, a process is triggered. First, person perceives the product's features. Based on perceived product's features and personal standards of other products compared, each individual constructs a personal version of the product character- the *apparent* product character (ibid.). Hassenzahl (2003) agues for the apparent product character is a *reconstruction of designers intended product character*, consisting of pragmatic (do-goals) and hedonic attributes (be-goals). The apparent product character and current situation will lead to *consequences*:

- a judgement about the product's appeal (e.g., good/bad);
- emotional consequences (e.g., pleasure, satisfaction);
- behavioral consequences (e.g., increased time spent with the product).

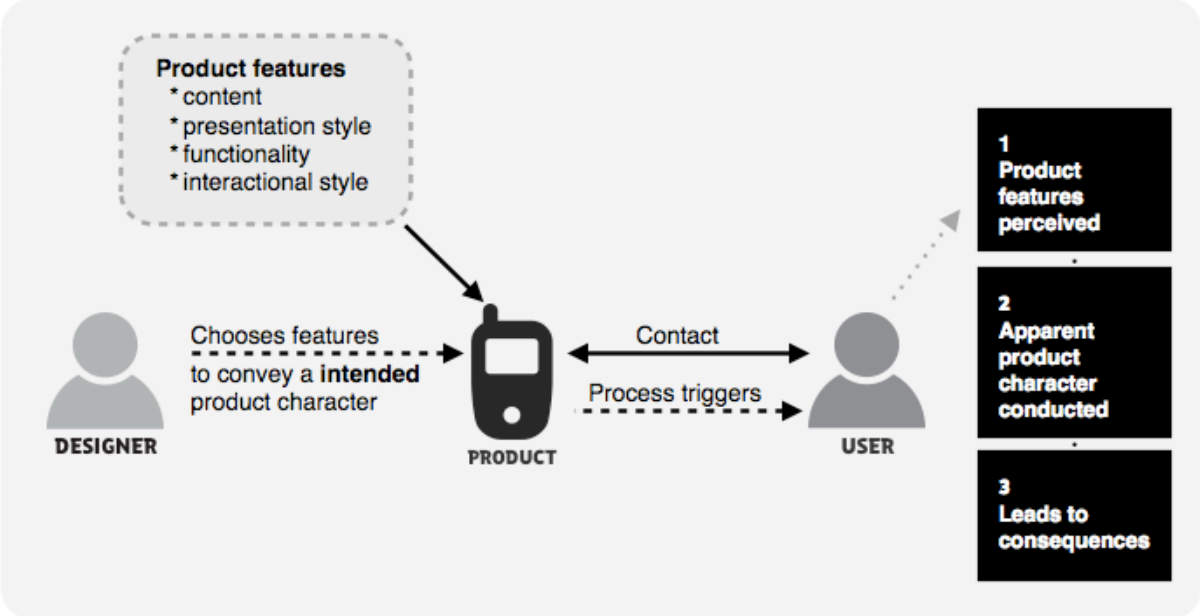


Figure 2-2. Apparent product character conduction by the user

Apparent product character represents product attributes and relations that specify the co-variation of attributes. It allows inferences beyond the merely perceived. Product attributes consider the major functions of products: they enable people to manipulate their environments, to stimulate personal growth, to express identity and provoke memories (Hassenzahl, 2003).

Users perceive products along two different dimensions (ibid.):

- *Pragmatic attributes* refer to the perceived ability of the product to support achievement of 'do-goals' (i.e. making a telephone call). Pragmatics is a main focus of 'classical HCI', concentrating on functionality and usability. Typical pragmatic attributes of a software product are "clear", "useful", "controllable". The purpose of a product should be clear, and the user should understand how to use it. A consequence of pragmatic qualities is satisfaction. Satisfaction emerges if a user uses a product or service to achieve certain goals and the product or service fulfills those goals.
- *Hedonic attributes* refer to the perceived ability to support achievement of 'be-goals' (i.e. being competent, being related to others, being special). Hassenzahl (2003) distinguishes three different facets of hedonic attributes: *stimulation* (novelty, change, personal growth), *identification* (relatedness, communication of own identity to others) and *evocation* (provoking memories, symbolizing). Typical hedonic attributes of software products are "outstanding", "impressive", "exciting" and "interesting". When an artifact is used for achieving a 'be-goal', the use of the artifact often becomes 'an end in itself'.

The hedonic function of products can be further subdivided into providing stimulation, communicating identity and provoking valued memories (ibid.):

- *Stimulation* - individuals strive for personal development i.e proliferation of knowledge and development of skills. To do so, products have to be stimulating. They have to provide new impressions, opportunities, and insights. The stimulation provided by novel, interesting or even exciting functionality, content, presentation or interaction style will also indirectly help goal fulfillment. It may raise attention, compensate for a lack of motivation to fulfill externally given goals, or facilitates new solutions to problems.
- *Identification*- individuals express their self through physical objects. Individuals want to be seen in specific ways by relevant others. To be socially recognized and to exert power over others is a basic domain of human motives. To fulfill this need, a product has to

communicate identity. In general, people may prefer products that communicate advantageous identities to others.

- *Evocation* - products can provoke memories. In this case the product represents past events, relationships or thoughts that are important to an individual. We enjoy talking and thinking about the good old days, and we want objects to help us with this. Even weird, dusty and practically useless souvenirs (with weak pragmatic qualities) have evocative function because they help us to recall the past.

When addressing UX, it is important to clarify the time span of UX that is in focus: *momentary*, *episodic*, or *cumulative* (Roto et al., 2011). Roto et al. (2011) argue for that while the core of user experience will be the actual experience of usage, this does not cover all relevant UX concerns. People can have indirect experience before their first encounter through expectations formed from existing experience of related technologies, brand, advertisements, presentations, demonstrations, or others' opinions. Similarly, indirect experience extends after usage or through changes in people's appraisals of use. User experience can be:

- momentary- a specific change of feeling during interaction,
- episodic- appraisal of a specific usage episode
- cumulative- views on a system as a whole, after having used it for a while.

So while trying to capture user perception of a product we must define which of the time span we want to target at. Focusing on the moment can give information on a person's emotional responses to the details of the user interface. Focusing on longer periods may reveal the eventual impact on UX.

To conclude, the UX model proposed by Hassenzahl (2003) has been chosen to be relied on. Although other models have been suggested as well, such as Peter Morville's honeycomb model "seven facets of user experience." Morvelle splits UX into useful, usable, desirable, findable, accessible, credible and valuable. These facets fit Hassenzahl's model also: useful, usable, findable, credible and accessible could all be considered as pragmatic (i.e. utilitarian and usability- related) qualities, while desirable and valuable would qualify as hedonic (well- being-related) qualities.

2.2 Web 2.0

The core service of the Internet, the World Wide Web (WWW) or more briefly the Web, emerged in the 1990s essentially as the global publication and exchange network utilized by organizations. In the 2000s new forms of online communities, social networking and peer-to-peer content sharing started to change the logic of the use of this global network. These new forms became known as Web 2.0, a concept that was first introduced in 2004 at the O'Reilly Media Web 2.0 Conference (O'Reilly, 2005). Web 2.0 has also been called the social web, because its content can be more easily generated by users, who are not the passive consumers of content, but co-producers.

Figure 2-3. Web 2.0 application field overview (Anttiroiko, 2010)

Anttiroiko (2010) has divided Web 2.0 applications into groups (Figure 2-3 above) based on their features as following:

- **Social networking sites (SNS)**: are profile-based hosted services that allow people to create and maintain networks of friends and contacts based on general social interests;

- **Special interest networks (SINs)**: varieties of interest based communities and networks in the Web, professional networks, lifestyle and consumerist social networks, activism and political movements and confessional communities;
- **Media communities:** producing, storing and sharing videos, webcam views, photos, music and other content materials;
- **Self-expression:** sharing experiences and views using blogs and e-diaries;
- **Collective intelligence:** collecting and sharing generic or thematic knowledge on a peer-to-peer basis in online forums;
- **Wisdom of the crowds**: sharing experiential knowledge, opinions, evaluations and news releases on a peer-to-peer basis using opinion, review and rating sites, news 2.0 sites, alert features and RSS feeds, social bookmarking, short messaging and sharing knowledge and evaluations through user-centric market places and networks;
- **Collective intelligence:** WWW sites or applications which combine content from different sources, synthesizes such content and utilizes new presentation tools in presenting them to the public, including such applications as mash-ups, map-based or location-based information presentation applications, knowledge networks and follow-up sites or facilitated consumer activism;
- **Communication services**: global multifunction portals with communication tools and tools for real-time communication through instant messaging.

2.2.1 Web 2.0 impact to user experience

As following the hedonic product attributes are to be analyzed in regards to social media.

Identification

Social media supports the human need to be seen in a specific way by relevant others (Hassenzahl, 2003). Many Web 2.0 applications SNSs (e.g. Facebook), SINs (e.g. LinkedIn), self-expression applications as blogs (e.g. Wordpress) support this need. They help us to communicate who we are and what we do. SNSs and SINs allow users to customize their profiles to express themselves and blogs allow us to select themes and express ourselves through content. So social media helps to communicate identity in order to be socially recognized and to exert power over others which is a basic domain of human motives according to Hassenzahl (2003) .

Stimulation

As individuals strive for personal development i.e proliferation of knowledge and development of skills products have to be stimulating (Hassenzahl, 2003). The stimulation provided product features will help in this regard. New ways of interacting or data mashups (e.g google map combining data and photos) stimulate us. Also services supporting collective intelligence (e.g Wikipedia) will support our strive for proliferation of knowledge.

Evocation

We enjoy talking and thinking about the good old days, and we want products to support this strive. In design, we can give websites a vintage look and feel to remind us of our childhood, high school etc. But even websites with a modern design can have evocative attributes. For instance, Facebook and Flickr by way of their users and our friends provides us with a huge number of pictures from the past, some of which are highly evocative.

As described above there are several features of Web 2.0 that support fulfillment of human needs, which is the source for how we perceive a product and make judgements about the product. The way Web 2.0 applications help us to communicate our identity explains the rise of social media use over the past years.

2.2 eGovernment

Information and Communication Technologies (ICT) use in governments has been labelled eGovernment (electronic government). In US eGovernment was never used with the same frequency as it was in the EU, the term digital government was preferred (Abecker et al., 2009).

eGovernment appeared as a term in the literature and practice in the mid to late 1990s (Jaeger and Thompson, 2003), but its definitions vary from having a narrow focus on the use of ICT and particularly the Internet in delivering better governmental services, to wider definitions focusing on transforming government (Chau and Grant 2005).

From a set of identifying characteristics eGovernment is defined (ibid.): "A broad-based transformation initiative, enabled by leveraging the capabilities ICT to develop and deliver high quality, seamless, and integrated public services, to enable effective constituent relationship management and to support the economic and social development goals of citizens, businesses, and civil society at local, state, national and international levels." In other words the broad goals of eGovernment is to bring out good management and good democracy to increase the efficiency for the management of the back office and enhance service delivery to citizens to promote more democratic discourse and participation (Musso et al., 2000).

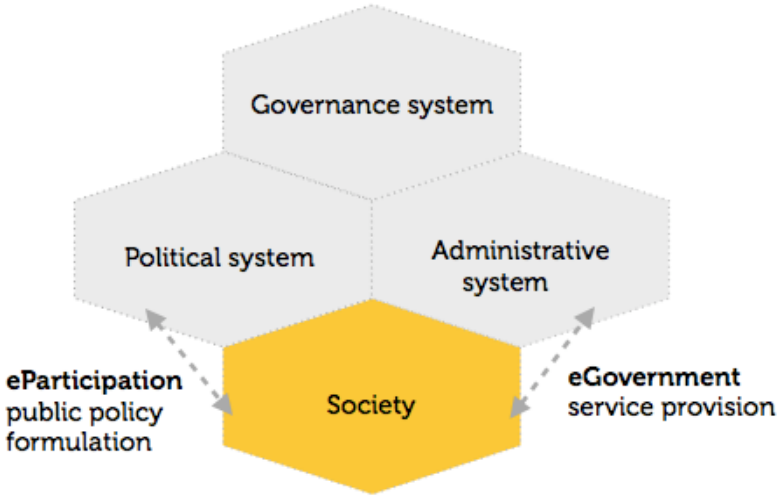


Figure 2-4. Governance system model (Abecker et al, 2009)

Still eGovernment is only one part of governance system. In order to fully understand the significance of eGovernment in governance system, the model (Figure 2-4 above) from Abecker et al. (2009) is a gross reference. The model reveals that governance system is a union of the political and administrative subsystems, exposing two major types of identifiable society- governance interfaces that support relevant interactions:

- *eParticipation*- the society to political support system interface, which includes interactions through processes of public policy analysis, formulation, and selection (eParticipation);
- *eGovernment*- the society to administrative system interface, which includes interactions thorough the public service provision process, covering both internal and external communications, government to government (G2G), government to citizens (G2C) and government to business (G2B).

The author agues for although model is overviewing, Abecker et al. (ibid) view on the society to political support system interface is too narrow. As eParticipation does not include electoral processes, this part of the model should be enlarged and replaced with eDemocracy as the second pillar of the system (Figure 2-5). eDemocracy should be used as a cover term for the society to political support system interaction which according to Macintosh (2004) *combines the electoral process, including e-voting, and the other addresses citizen eParticipation in democratic decision making*.

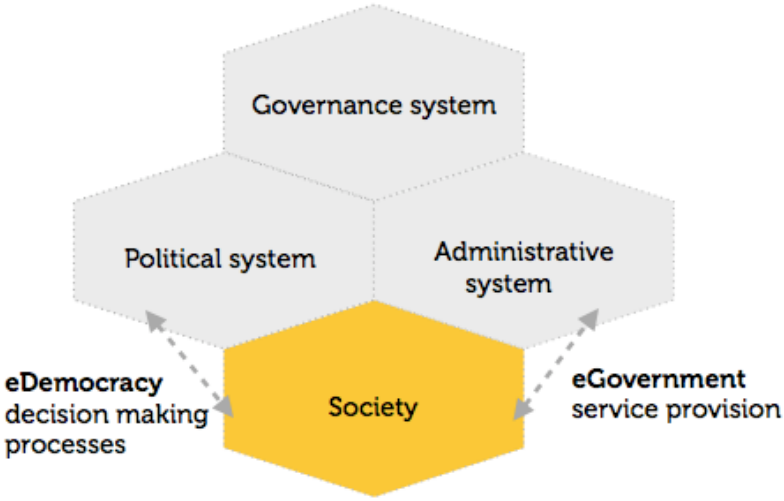


Figure 2-5. Governance system model improved by the author

2.2.1 Government 2.0

Combining eGovernment and Web 2.0 is not a totally new approach. Since the invention of the concept of Web 2.0 and related discussions about new value-adding logic of the Internet, version numbering has been attached to various activities (e.g Enterprise 2.0, Travel 2.0, News 2.0, Education 2.0, Publishing 2.0) as well as to government. The overall message is that work, communication, interaction and transaction logic is changing in all sectors of society and in all kinds of organizations. Public sector is not an exception, even if it has not been in the forefront of this trend.

Government 2.0 is based on the idea of giving users a new role in public service and governance processes by utilizing their social networking and content sharing activities that gave some novel ideas of the future appearance of eGovernment.

But the first steps in this field have been fairly conventional. Anttiroiko (2010) explains the most widespread Web 2.0 applications adopted by government agencies are basic communication and information sharing tools, such as RSS feeds, Twitter and Facebook pages, which are useful for facilitating quick communication or short messaging and for keeping citizens informed of government activities. The second area of adoption of Web 2.0 in government is to disseminate and utilize experiences of service users e.g Patient Opinion in the UK[3]. Lastly, the use of social network services, blogs and video-sharing sites in political debates, campaigns and elections has increased interaction in elections.

According to Deloitte (2008) the added value of Government 2.0 is created by human collaboration and systemic intelligence. It is a sum of two fundamental aspects of eGovernment, which can be labeled as *c-government* and *i-government*. Web 2.0 for government is about c-government (c referring to 'collaborative') because communication, sharing and networking are the core features of Web 2.0 and can be applied to government activities in order to benefit from a broader knowledge base and interaction in service and governance processes. The other side of this phenomenon is collective intelligence and smart community features (e.g mashups, user reviews etc) this aspect of Government 2.0 can be called i-government (i for 'intelligent') (ibid.). Anttiroiko (2010) explains that if we elaborate this further and especially its collaborative aspect, we can end up with four fundamental categories of added value of Web technologies applied to users' networks and user-generated content: *communication, content sharing, social networking* and *collective intelligence*. These four interrelated areas indicate the ways how government can utilize Web 2.0, as illustrated in table 2-1 .

[3] http://www.patientopinion.org.uk/

Application functions	Pragmatic Web 2.0 applications	Examples	Government 2.0 applications
Communication	Messenger	NSN, Skype	Chat features in government web sites
Short messaging and alerting services	Short messaging	RSS feed, Twitter, Delicious	Government use of RSS feed and Twitter
Content sharing in hosted services	Content sharing	Youtube, Slide.com, Flickr	Youtube and blogs utilized by public organizations
Social networking	Creating and maintaining user profiles and social networks	Facebook, Tagged, Orkut	Public organizations presence in Facebook and other social networking sites
Collective intelligence I: aggregated human intelligence	Sharing, aggregating and processing user-generated knowledge	Wikipedia	User-oriented sites like Patient Opinion (UK) and TheyWorkForYou (UK)
Collective intelligence II: system intelligence	Generating and presenting knowledge using intelligent systems	GIS applications, RFID	Intelligent applications in community informatics (Crime maps, Transport systems)

Table 2-1. Social functions and their implications for government (Anttiroiko, 2010)

2.2.2 eGovernment in Estonia

Estonian eGovernment history dates back to 1990-s. Government webpage was launched 1994, two years later the first Internet database legislation portal *Riigi Teataja* became available. The cornerstone for Estonian eGovernment creation was set in May, 1998 when the Parliament approved the *Estonian Information Policy Principles*, which was the administrative policy document reflecting the general priorities of information technology and describing the principles of information society. The document became the driving force behind the public sector computerization and development of Estonian information society aiming to design a modern information society and corresponding to citizens' serving-oriented and compassionate state (Eesti Infopoliitika põhialuste heakskiitmine, 1998).

The most significant components of Estonian eGovernment infrastructure include (Riigi Infosüsteemi Teejuht):

- *X-road*- a data exchange layer which enables governmental databases to exchange data in secure way;

- *Public key infrastructure* (PKI) combines the digital signature and verification services;
- *State Information Management System* (RIHA) a comprehensive and detailed mapping of the state data;
- *Document Exchange Centre* (DEC) - an information system that provides public sector bodies to a central service for the transmission of electronic documents;
- The state information presentation layer, state portal *eesti.ee*[4]- provides citizens, businesses and civil servants with a possibility of finding a reliable official information, contact details and public e-services in one secure environment.

Before the last information society strategy entered into force the main focus of Estonian eGovernment initiatives has been focused on developing *technical infrastructure* for the state information system. The *Estonian Information Society Strategy 2013*[5]*,* a strategy for 2007–2013, set new objectives for the use of ICT, which now includes also the development of citizen-centered and inclusive society stating the goal that each person lives a full life by using full potential of information society, and is actively participating in public life - "nobody is excluded, and no one is left behind". For implementing this goal the main set activity is to enable service provision and communication and with the state, entrepreneurs and other citizens through the state portal *eesti.ee*.

The state portal *eesti.ee* is targeted to be the main channel in service provision to the citizens. The report *Citizens' Satisfaction with Public Sector eServices* (TNS Emor, 2010) reviled that 69 percent claims to be satisfied with *eesti.ee* the usability. Still *only 25 percent of the responders do use eesti.ee* and *another 21 percent know the portal, but do not use it*. This means more than half a population are not aware of *eesti.ee*, which is huge amount of service users if to consider the internet penetration rate among 16-49 years is 94 percent. Could Web 2.0 features attract more service users?

The use of Web 2.0 features among public sector organizations in Estonia has not been widely studied. An observation on the Facebook use of Estonian ministries shows that not many as taking advantages from the opportunities of new media- only five out of eleven ministries of Estonia are presented in Facebook and three of them have more than 50

[4] www.eesti.ee

[5] http://www.riso.ee/en/system/files/Estonian%20Information%20Society%20Strategy%202013.pdf

followers [See Annex 2 for more details]. *Eesti.ee* as the main service provision channel has been adopting Facebook rather successfully. In April 2011 their page[6] had almost 2000 followers, though there is no reference in *eesti.ee* webpage for their social media presence so the question remains can we consider these attempts of social media use as official channels for communication and service provision with users?

Although also public sector online service providers now need to think beyond basic concepts of functionality and ease-of-use and consider the emotional experiences that their services engender, it seems these are the concepts not yet in everyday vocabulary of the service providers. Up to now the most widespread Web 2.0 applications adopted by government agencies are basic communication and information sharing tools, such as RSS feeds, Twitter and Facebook pages, which are useful for facilitating quick communication or short messaging and for keeping citizens informed of government activities. Web 2.0 applications have lot to offer in regards of user experience. Several features of Web 2.0 support fulfillment of human needs, which is the source for how we perceive a product and make judgements about the product.

[6] http://www.facebook.com/eesti.ee

3 Research

Many tools exist for doing traditional usability evaluations, but user experience evaluation differs from usability evaluation dramatically. In order to assess how Web 2.0 features could enhance public e-service user experience, an assessment is discussed in the following chapter.

3.1 Research methodology

In order to understand users' perceptions, an assessment survey on user experience was conducted with genuine users of *Minu Viljandi*, a Government 2.0 website. The survey was aimed at evaluating reflective user experience and carried out in two parts. Quantitative data regarding effect of perceived hedonic quality on product appealingness was collected via user questionnaire and via AttrakDiff instrument.

For the construction of user survey it has been relied on the theoretical framework of user experience described previously. Hassezahl's (2003) framework distinguishes between perceived pragmatic product quality and perceived hedonic product quality. The framework assumes that perceived pragmatic quality and perceived hedonic quality describe independent dimensions of the user experience. It was considered important to allow users to perceive the system after they have received some feedback from city government or fellow users so the study was targeted at reflective user experience. The framework explains that basic human needs are key drivers of product use and quality perception. Fulfillment and frustration of such needs cause user's experience with an interactive product and are mainly influenced by product qualities (pragmatic/hedonic).

Quantitative data regarding need fulfillment and product qualities were collected via Likert scales. Retrospective questionnaires aimed at evaluating completion the reflective user experience. User questionnaire enables to measure user experience quickly in a simple and immediate way while covering a preferably comprehensive impression of the product user experience (Novak and Schmidt, 2009).

The test consists of 3 sections: Section 1 Opinion about Minu Viljandi, Section 2 Social Media use and Section 3 Personal information. Section 1 evaluates respondents' experience of the web site. Section 2 examines respondents' personal social media use. A 5-point Likert scale was used for the evaluation of the statement in the questionnaire of Sections 1 and the responses to the statements were coded as follows: Strongly Agree = 1, Agree= 2, Neutral = 3, Disagree= 4 and Strongly Disagree = 5.

AttrakDiff[7] is an instrument for measuring the attractiveness of interactive products. With the help of pairs of opposite adjectives, users can indicate their perception of the product. These adjective-pairs make a collation of the evaluation dimensions possible.

The following product dimensions are evaluated (ibid.):

- Pragmatic Quality (PQ)- Describes the usability of a product and indicates how successfully users are in achieving their goals using the product.
- Hedonic Quality- Stimulation (HQ-S): Mankind has an inherent need to develop and move forward. This dimension indicates to what extent the product can support these needs in terms of novel, interesting and stimulating functions, contents, and interaction and presentation-styles.
- Hedonic Quality- Identity (HQ-I): Indicates to what extent the product allows the user to identify with it.
- Attractiveness (ATT) - Describes a global value of the product based on the quality perception.

Hedonic and pragmatic qualities are independent of one another and contribute equally to the rating of attractiveness.

3.2 Project overview

Minu Viljandi heakorraveeb[8] has been developed in 2010-2011 by Network of Estonian Non-Profit Organizations together with the Estonian Design Centre and Viljandi City Government as part of the service design project "My Estonia: Public Services. Seven at a

[7] www.attrakdiff.de

[8] My Viljandi public space maintenance website. Hereinafter referred as Minu Viljandi. http://minu.viljandi.ee

Blow"[9]. The project aims to promote cooperation on public services between local governments and citizens' associations.

3.2.1 Objective

Minu Viljandi (Figure 3-1) website is aimed at providing people with the opportunity to *start a dialogue* with the city government in public space issues and to *participate in decision-making*.

The webpage aims to harness collective intelligence to serve public provision. The key terms are participation and immersion since this new paradigm invokes users' to integrate information and interactivity.

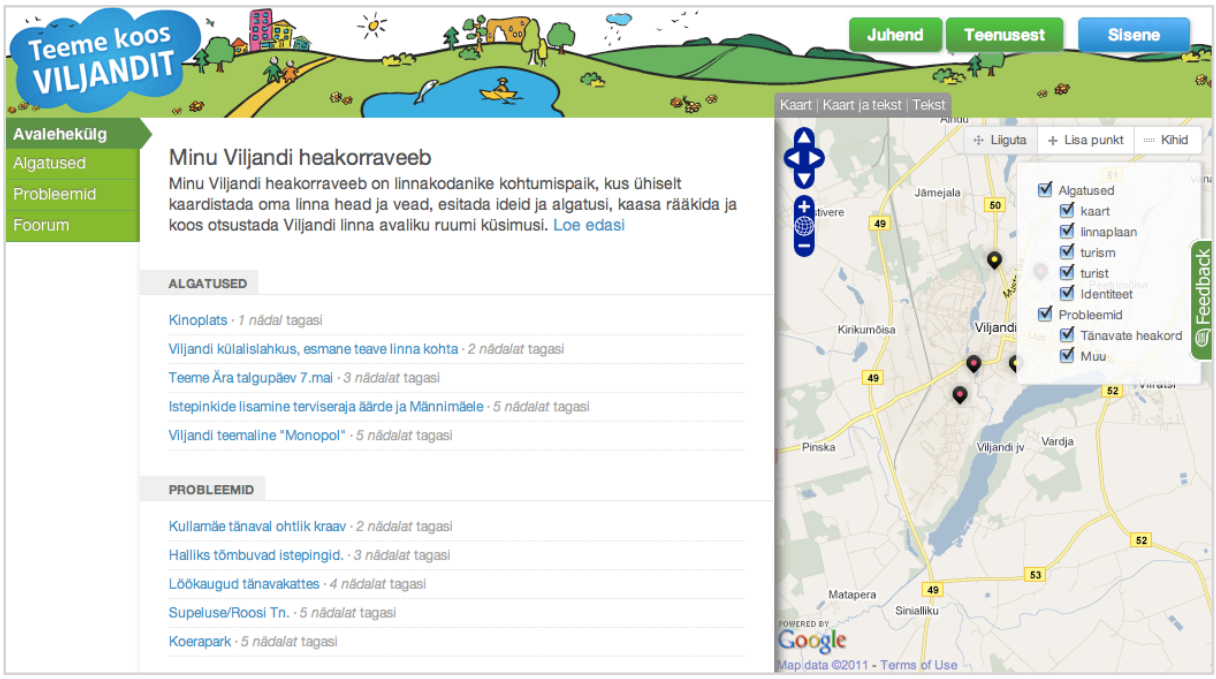


Figure 3-1. Minu Viljandi website

The subgoals include (Brandmanual, 2010):

a) receive information about the ongoing in your neighborhood from other users and from city government;

b) interact with the local government making proposals and start initiatives about public space;

[9] http://www.ngo.ee/seitse

c) create a database of standard questions and answers that could reduce the need to deal with routine queries.

Development of Minu Viljandi was driven from study on citizens and city officials needs. The outcomes of the study concluded (Brandmanual, 2010) that from the local government point of view in many cases the queries from citizens are not unique problems, which means that the answers to these problems have already been described and a web environment should make these answers searchable to the citizens. The site should make the interaction between residents and local government public allowing to evaluate and put pressure on local government to improve the service provision. Some problems can be solved without waiting for an official response and fellow citizens can contribute to the problem-solving.

3.2.2 Site structure and features

Figure 3-2 is a visual format of site structure of Minu Viljandi and Table 3 – 3 explains features of each page.

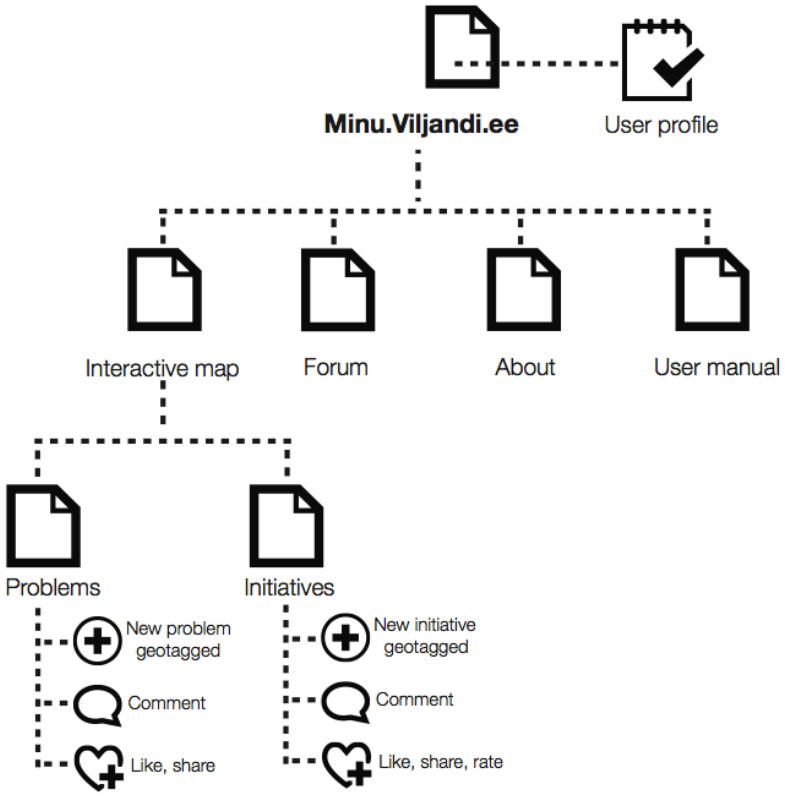


Figure 3-2. Minu Viljandi website structure

The site, like many web sites, uses a hierarchical structure that consists of an index (home) page and other pages. However, to avoid the hierarchical structure that represents linear communication, additional navigation based on map objects is supported.

Index page: provides the latest items in this site. It is the interactive overview of the site so that the users can navigate the site easily and comfortably.		
Interactive map: on overviewing map of the issues entered. Each issue can be geo-tagged with a exact location.		
Navigation	Problems	This page enables to view all problems enter and gives everyone an opportunity to enter problems in their neighborhood. The page has Web 2.0 features, tagging, geo-tagging, photos, commenting, sharing to Facebook and Facebook like.
	Initiatives	This page enables to view all initiatives enter and gives everyone an opportunity to enter initiatives. The page has Web 2.0 features tagging, geo-tagging, commenting, photos, sharing to Facebook and Facebook like. Initiatives can be rated by users.
	Forum	Online forum board.
	User manual	This page provides tutorial how to use the software at its full potential.
	About	This page describes the Minu Viljandi goals and objectives in short.
	Login	User identification and authorization is needed to enter data or comments. All information can be viewed without identification. Facebook and ID-card identification is supported.
	User profile	Users can add information about themselves and submitted content by the user can be viewed.

Table 3-1. Minu Viljandi site features

3.2.3 Web 2.0 design elements

AS following the Web 2.0 design elements used in Minu Viljandi are discussed below (Figure 3-3).

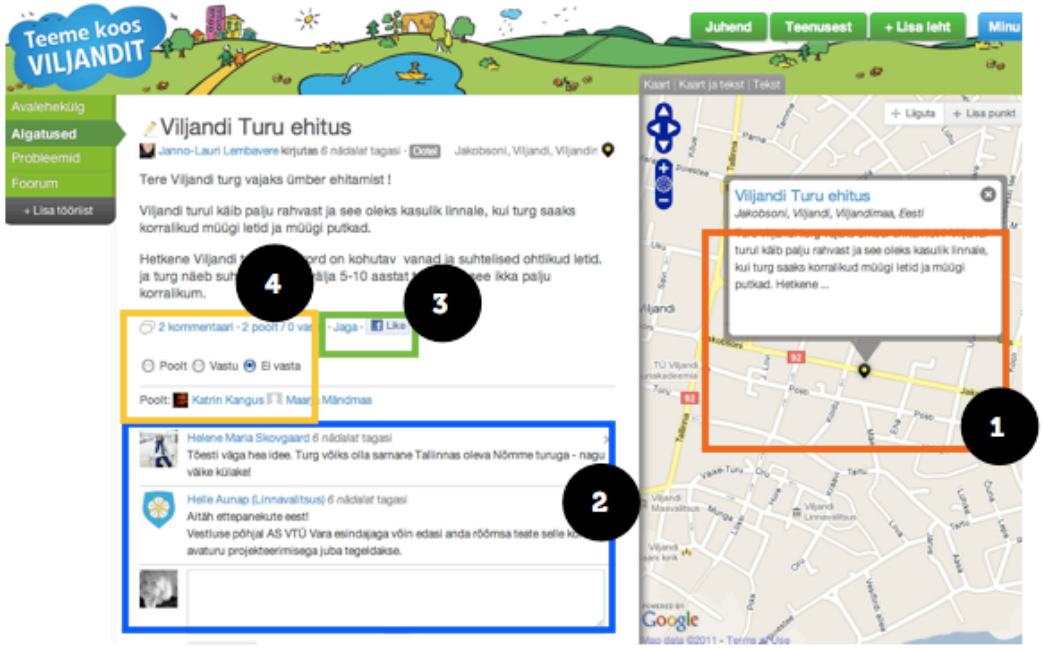


Figure 3-3. Web 2.0 design elements of Minu Viljandi website

1. Geo-tags

Users can geo-tag all content created aiming to improve location-based communication. Users can get a clear understanding where the issue is based at and it helps them to stay updated with the issues in their neighborhood or point of interest.

2. Comments

Driven from the site goal dialogue is favored between citizens and city government as well as citizen to citizen. All discussions are public and each registered user can interfere and have a say. The response from the city government is highlighted with the addition to the city official name as “City government”.

3. Facebook share/like

Issues can be shared to Facebook and liked using Facebook with the main goal to spread information and gain wider support and distribution.

4. Rating

Rating initiative is supported by registered users. They can rate is they agree or disagree with the initiative or also stay neutral.

5. Photos

All problems and initiatives can be illustrated by uploading thematic photos. The photos are displayed as thumbnails at the issue detail page and can be enlarged to take a closer look.

User profile

User profile (Figure 3-4) is created to all registered users. Users can add information about themselves and submitted content by the user can be viewed. User profiles are public to all registered users, unregistered users can view content overview submitted by the user and profile photo if submitted. For users who have identified themselves using Facebook the profile picture is queried from Facebook.

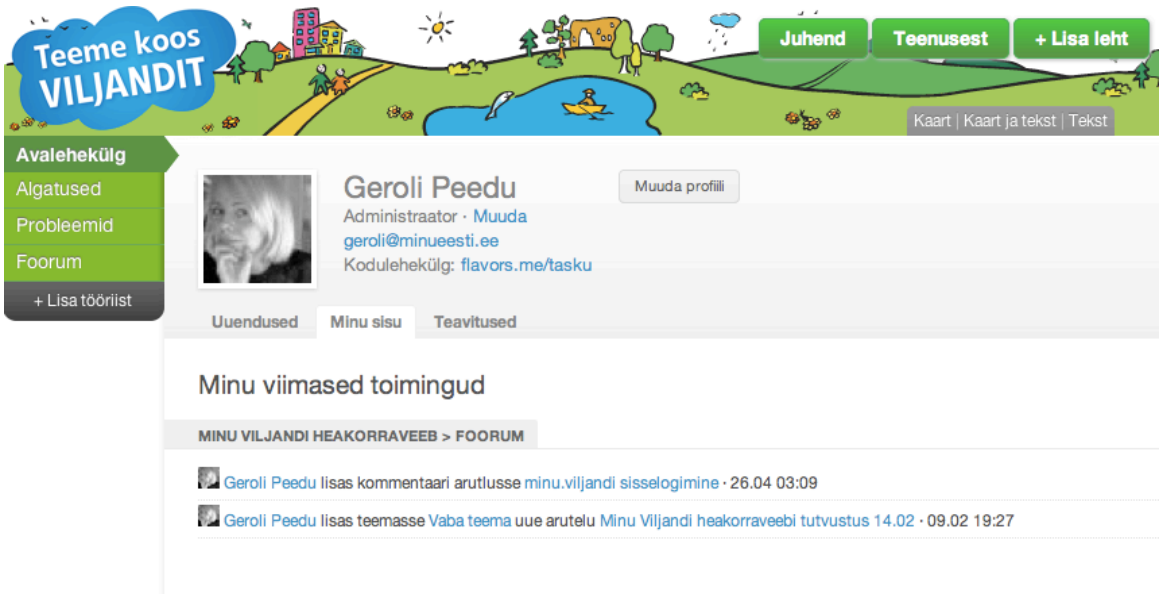


Figure 3-4. User profile view in Minu Viljandi

4 Results and discussion

This chapter presents the results and analysis for the Minu Viljandi web site user experience evaluation.

4.1 Data and Results

4.1.1 AttrakDiff

AttrakDiff instrument differentiates between pragmatic and hedonic qualities as independent constructs determining the overall perception of the attractiveness of a system (Novak and Schmidt, 2009).

AttrakDiff questionnaire was conducted for 3 days using a web-based survey based on Google form. All registered website users were invited to participate in the online test by e-mail.

- Testing duration: 29 April 2011 – 01 May 2011
- Testing method: online and anonymous survey
- Tester group: Registered website users
- Respondents: 16 out of 68 (participation rate = 23,53%)
- Age: 8 participants 20-40 (50%), 8 participants 40-60 (50%)

Portfolio of results

According to the results from AttrakDiff Minu Viljandi user interface was rated as "rather desired".

The report from AttrakDiff also provided analysis as the classification here is not clearly "pragmatic" because the confidence interval overlaps into the neighboring character zone. The user is assisted by the product, however the value of pragmatic quality only reaches the average values.

In terms of hedonic quality the character classification does not apply clearly because the confidence interval spills out over the character zone. The user is stimulated by this product, however the hedonic value is only average.

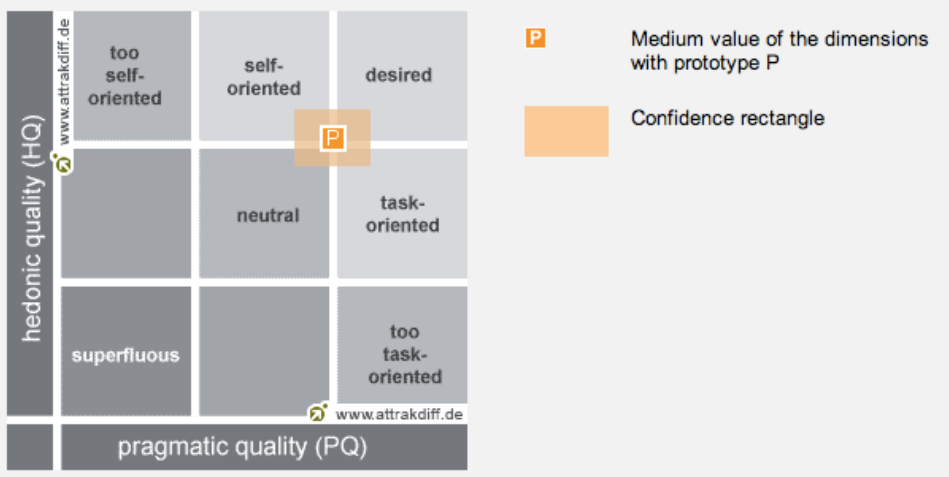


Figure 4-1. Values of PQ/HQ and confidence rectangle of Minu Viljandi

The confidence interval PQ is large which could attributed to greatly differing product ratings. The bigger the confidence rectangle the less sure one can be to which regions it belongs. A small confidence is an advantage because it means that the investigation results are more reliable and less coincidental.

Average values

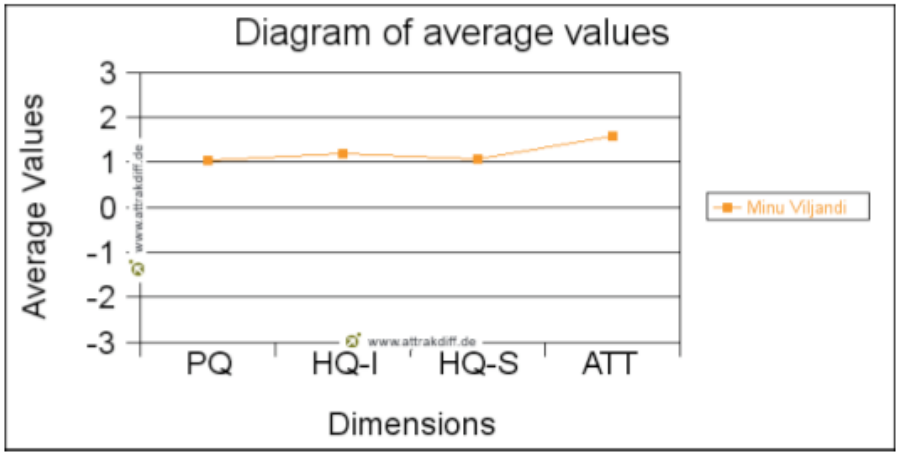


Figure 4-2. Diagram of average values

In this presentation hedonic quality distinguishes between the aspects of stimulation and identity. Furthermore the rating of attractiveness is presented. According to the report with regards to hedonic quality- identity, the product is located in the above-average region. It provides the user with identification and thus meets ordinary standards. Also with regards to hedonic quality- stimulation, the product is locates in the above-average region. The product's attractiveness value is located in the above- average region.

Description of word-pairs

The mean values of the word pairs are presented here. Of particular interest are the extreme values that show which characteristics are particularly critical (cheap) or particularly well-resolved (simple, brings me closer to people, likable, good).

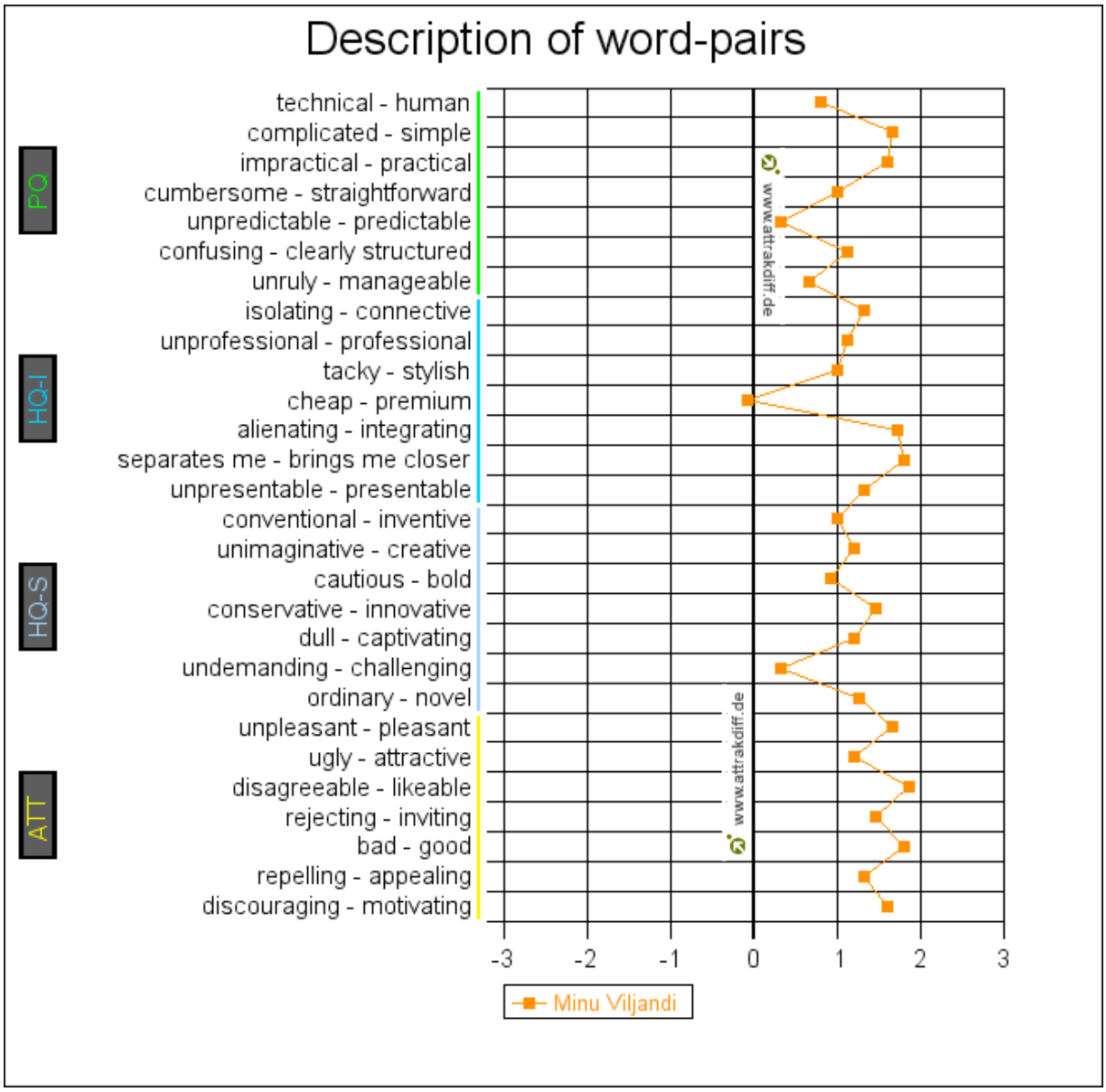


Figure 4-3. Description of word-pairs for Minu Viljandi

The Attractdiff testing results did not reveal extreme appealingness of Minu Viljandi. As the confidence interval PQ is large it could attributed to greatly differing product rating and therefore further studies and interviews with respondents should be planned. Nevertheless the testing shows that some characteristics are particularly well-resolved and the product is perceived as simple, brings closer to people, likable and good.

4.1.2 Assessment survey

The assessment survey was conducted for 5 days using a web-based survey application, Survemonkey.com. All registered website users were invited to participate in the online test by e-mail. 25 out of 68 participated in this online test (participation rate = 36,76%).

- Testing duration: 28 April 2011 – 01 May 2011
- Testing method: online and anonymous survey
- Tester group: Registered website users
- Respondents: 25 out of 68 (total completed survey 23- 92%)

Personal background/Social Media use

Most of the respondents were at the age between 20-40 (12 respondents - 52,2%) or 40-60 (9 respondents - 39,1%) years. They were moderate social media users spending 0-10 hours (54.2%) or 10-20 hours (41.7%) a week in social media, but many (13 respondents - 54,2%) had a large social network of friends (100+) in Facebook or other SNS. Majority of respondents (91,7%) claimed to use 1-10 different social media applications, but 2 respondents claimed they do not use any social media applications at all. The main reasons to visit social media was to search for information (87.0%), being informed about events (69.6%), being informed about friends lives (65.2%) or for communication (60.9%). See annex 2 for detailed overview.

Hedonic quality of Minu Viljandi

Hedonic quality is described in terms of hedonic stimulation (HQ-S) and hedonic identity (HQ-I). Some of the Web 2.0 features were perceived very appealing in Minu Viljandi webpage.

Geo-tags

23 respondents (92 %) agreed or agreed strongly that they like that can be mapped and problem/initiative link to map is creative 18 respondents (75%) agreed or strongly agreed. Geo-tagging stimulates the innate human need for personal development e.g. new skills and knowledge (HQ-S).

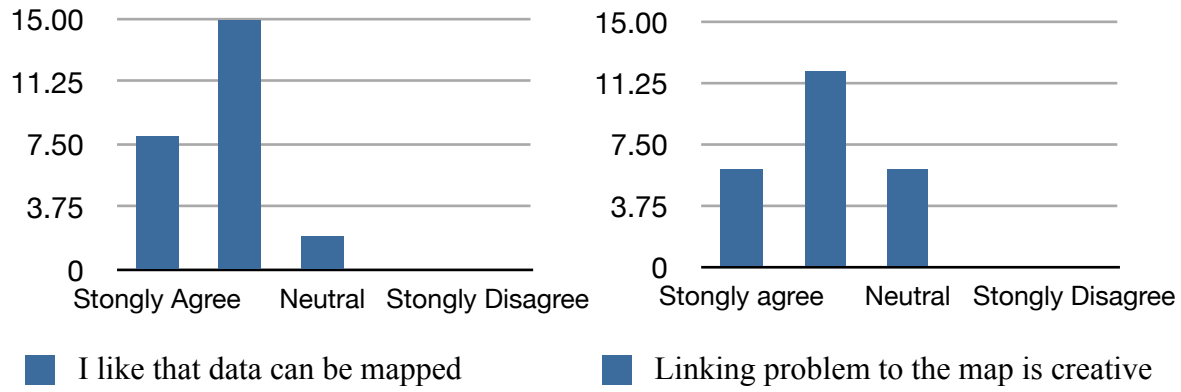


Figure 4-4. Map-related assessment results

Comments

Commenting stimulates knowledge-sharing (HQ-S) as well as relatedness to others (HQ-I). As illustrated in figure 4-5, 84% of the respondents believe by agreeing or agreeing strongly that when discussing problems with other users they also get to know more. Respondents like to look which issues other users have added- 96% agreed or strongly agreed. They like that through the Minu Viljandi website they can communicate with people in similar situation (84% agreed or agreed strongly) and they believe they would visit the site again to see if someone has commented their post (83,4% agreed or agreed strongly). It's remarkable that only once a respondent disagreed with a statement regards commenting functionalities.

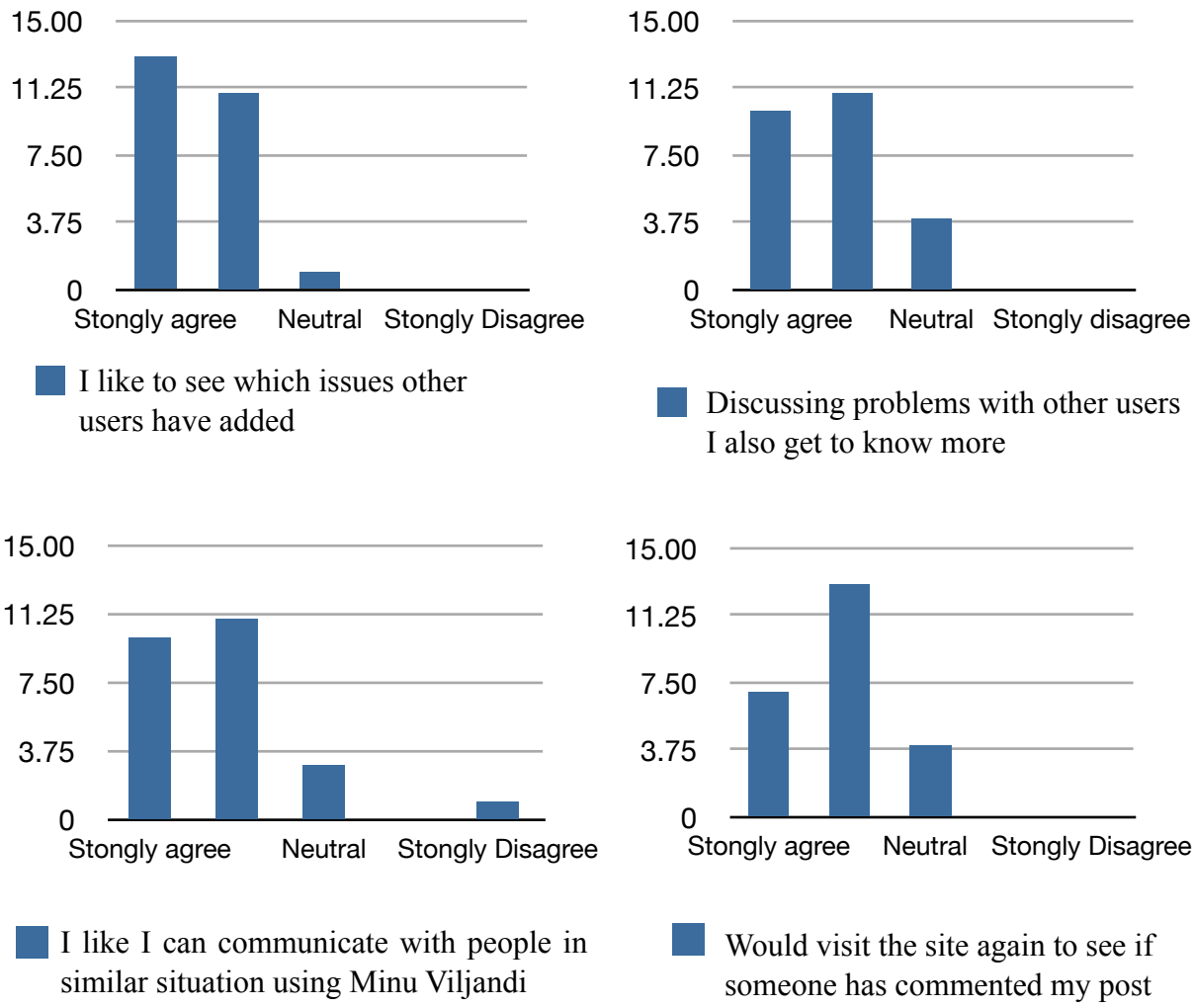


Figure 4-5. Assessment results related to comments

Facebook share/like

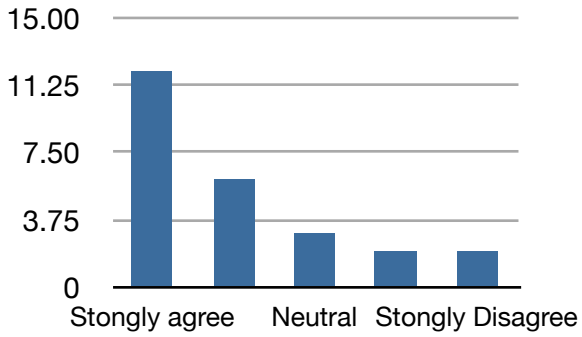
Facebook sharing/liking functionalities stimulates the innate human need for personal development e.g. new skills and knowledge (HQ-S). Up to now these functionalities were not perceived too appealing - 37,5 % of the users agreed, but majority of 54,2% felt neutral towards this issue. 2 respondents (8,3%) disagreed with the statement.

Photos

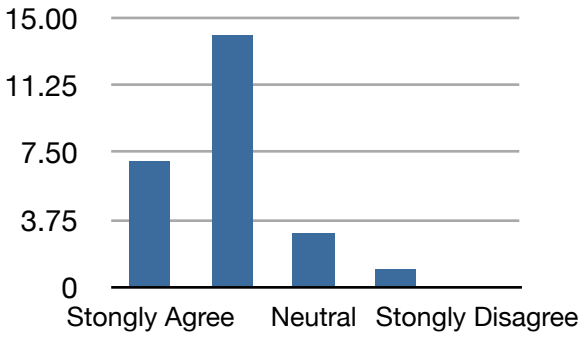
22 respondents (91,6 %) agreed or agreed strongly they like that photos can be added to problems/initiatives. Adding photos maybe perceived as stimulating the inner human need for personal development e.g. new skills and knowledge (HQ-S). Photos with certain content can provoke memories and therefore be perceived as hedonic. But in context of Minu Viljandi the scenario of inner need for personal development is more likely.

User profile

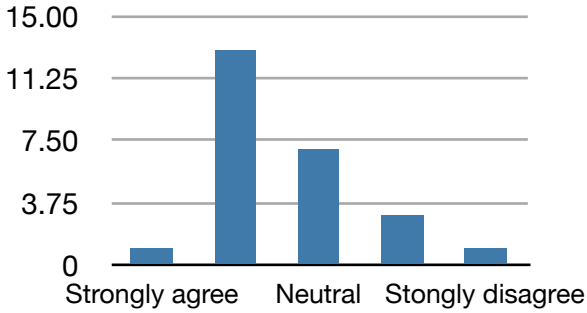
It has been argued that privacy is an important issue related to social media. Therefore it was surprising to recognize that 84% (19 respondents) declare by agreeing or agreeing strongly they are not disturbed their profile and comments are public, still 72% of the respondents revealed they think more what to write when they appear in their real name. Still also 4 respondents (16%) disagreed with this last statement. Respondents feel their opinion is rather important in Minu Viljandi site. Minu Viljandi is addressing a personal need of expressing oneself and being perceived by others in a certain way (HQ-I). As people commonly express themselves through personal objects, the functionalities, design or visual appearance of a system can relate to a user's need for communicating a certain identity.



I think more what to write when appearing in my real name



I'm not disturbed my profile and comments are public



I think my opinion is important in Minu Viljandi site

Figure 4-6. Assessment results related to user profile

Overall hedonic perception of the site

Majority of the users declare they feel secure (85%) when using Minu Viljandi site and the site is rather reliable (84%). Users feel interacting with city government is fun (68% agrees, but 12% disagrees) and it reduces stress (60% agrees, but 12 disagrees). These statements were positive, but there was not too strong agreement, but instead all majority of users (91,6%) stated they would use the site again to enter problem/initiative. Respondents also agreed site like this invites them to participate more in discussions (88% agrees, 4% disagrees). There was no clear opinion about visiting the site when respondents have nothing to do or that they would visit the site again because it's cool and interesting site.

4.2 Analysis of the results

According to the results of user experience evaluation, the AfftakDiff questionnaire did not show remarkable desirability of the site, product user interface was rated as "rather desired" and other criteria was in the range of ordinary standards. Still responders perceived the site more as simple, brings me closer to people, likable, good.

It can be argued for the sampling for the AttrakDiff questionnaire was not representative enough - 16 out of 68 participated in this online test (participation rate = 23,53%) or it could attribute to greatly differing product rating. Also the concern is as the questionnaire was translated from English to Estonian it can be questioned whether the adjectives of word pairs were semantically identical to English version. Still the instrument provides insights to product perception and therefore further experiments should be initiated and reliable translation developed.

However, the assessment survey unfolded an other view to the product appealingness. Some of the Web 2.0 features were perceived as highly appealing referring to their ability to stimulate the inner human need for personal development (HQ-S) or addressing a personal need of expressing oneself and being perceived by others in a certain way (HQ-I).

The geo-tagging functionality was perceived as appealing by 92% of the respondents [see Figure 4-4] which can be explained by stimulating the innate human need for personal development e.g. new skills and knowledge (HQ-S). Also commenting was highly appreciated by the respondents. Commenting stimulates knowledge-sharing (HQ-S) as well as relatedness to others (HQ-I). As many as 96% of the respondents like to look which are the issues added by other users. Another 84% believe when discussing problems with other users they also get to know more. It's remarkable that only once a respondent disagreed on a statements about comment functionalities [see Figure 4-5].

Although it has been argued for privacy being an important issue related to social media the survey resulted with respondents declaring that they are not disturbed their profile and comments are public, but they did agree they think more what to write when appearing in their real name. From the results we can conclude Minu Viljandi is addressing a personal need of expressing oneself and being perceived by others in a certain way. As people commonly express themselves through personal objects, the functionalities, design or visual appearance of a system can relate to a user's need for communicating a certain identity. As majority of the respondents were moderate social media users we can argue for that users who are already exploiting social media possibilities their need for privacy has declined and when joining social media applications they are ready to dispose their ideas to the public.

Also the overall experience of the site is positive in terms of the user experience. Majority of the users declared they feel secure when using Minu Viljandi site and the site is rather reliable. Majority of users stated they would use the site again to enter a problem or initiative. Respondents also agreed on site like this invites them to participate more in discussions which is the overall goal of the Minu Viljandi website.

The results do confirm the social media features support the perception of the product as appealing. Yet, the number of such applications is still limited because there is no clear policy on how contributions from citizens can be effectively utilized in the provision of public services without compromising the quality and trust in public services. And this new mind-set may be challenging to convey for the public sector that favors maintaining control over the use of data, and from valid concerns about security.

5 Conclusion

The thesis studies user experience in public e-service provision, more precisely hedonic product qualities. The study of user experience in relation to eGovernment is relatively important in order to enhance pleasurable and satisfying service experience.

User experience refers to a concept that places the end-user at the focal point of design and development efforts. Online service provides now need to think beyond basic concepts of functionality and easy-of use and consider emotional experiences that their services engender.

As users nowadays are no more satisfied only with the pragmatic attributes of a product as useful functions, rather expecting pleasure and satisfaction the thesis explores how can governments benefit from the Web 2.0 features in order to provide enhancing service experience. Public sector e-service providers now need to think beyond basic concepts of functionality and ease-of-use and consider the emotional experiences that their services engender. Still it seems these are the concepts not yet in everyday vocabulary of the service providers. According to Anttiroiko (2010) up to now the most widespread Web 2.0 applications adopted by government agencies are basic communication and information sharing tools, such as RSS feeds, Twitter and Facebook pages, which are useful for facilitating quick communication or short messaging and for keeping citizens informed of government activities.

But Web 2.0 applications have lot to offer to public sector organizations in regards of public service user experience. Several features of Web 2.0 support fulfillment of human needs, which is the source for how we perceive a product and make judgements about the it. The results of assessment survey revealed that some of the Web 2.0 features were perceived as highly appealing in online public service use referring to their ability to stimulate the inner human need for personal development or addressing a personal need of expressing oneself and being perceived by others in a certain way.

According to the research results the recommendations for Estonian public sector organizations regards public service user experience are as following:

- public sector organizations should add reference to their webpage for their social media in order to communicate to the public social media being an official channels for communication and service provision with citizens;
- social media features supporting human need for self-expression or to be seen in a specific way by relevant others could be incorporated to public e-service interfaces. These features may include commenting which helps us to relate to others (HQ-S) as well as stimulates knowledge-sharing (HQ-I). When appropriate user profiles could be added to services e.g. in *eesti.ee* citizens could build their citizen profile by describing their favorite services, their interests and share this with chosen citizens.
- social media features supporting human need for proliferation of knowledge and development of skills could be incorporated to public e-service interfaces. As individuals strive for personal development products have to be stimulating. The stimulation provided product features will help in this regard. Public service provides should find novel ways to interact with citizens or mashing data (e.g google map combining data) to stimulate us. Also services supporting collective intelligence (e.g Wikipedia) that support our strive for proliferation of knowledge should be favored.
- in design, we can give websites a vintage look and feel to remind us of good old days as we want products to support this strive;
- studies on user experience should be favored. [10] questionnaire enables to evaluate and compare the hedonic and pragmatic quality of interactive products. Also user questionnaire to measure user experience quickly in a simple and immediate way while covering a preferably comprehensive impression of the product user experience (Novak and Schmidt, 2009);
- assessment criteria on citizens' satisfaction with public services should be developed further and questions related to hedonic product quality should be included to get a full picture of citizen expectations regards public services;
- social media features support the perception of the product as appealing clear policy on how contributions from citizens can be effectively utilized in the provision of public

[10] www.attrakdiff.de

services without compromising the quality and trust in public services should be initiated.

As there is almost no previous research available in the domain of user experience in public service provision the author sees a great potential in the field due to growing user expectations. The future research should include assessments with users with low social media or without any previous experience in order to understand how skills and understanding of social media exploitation affects the users. Also in order to fully deploy AttrakDiff instrument in Estonian language context, semantically identical Estonian language version should be developed further based on the work initiated.

6 Summary

Tänapäeva tarbijatele ei piisa enam ainuüksi sellest, et tooted on kasulikud, pigem ootavad, et tooted pakuksid neile rõõmu ja rahuolu. Alates 2000- aastatest alguse saanud uute online-kogukondade ja sotsiaalvõrgustike teke on jäädavalt muutnud Interneti loogikat, mis ühtasi tekitab survet ka valitsustele, kes peaksid järgima Web 2.0 trende e-riigi arendamisel. Kuigi viimase paari aasta jooksul võime tunnistada avaliku sektori imbumisest sotsiaalmeediasse nt. Facebook, YouTube, Twitter jne, tundub siiski, et valitsused ei ole siiani aru saanud Web 2.0 tehnoloogia rakendamise võimalustest enam nauditavate ja rahuldustpakkuvamate teenuste osutamisel. Seni kasutavad avaliku sektori organisatsioonid Web 2.0 võimalusi peamiselt selleks, et teavitada üldsust oma tegevusest ehk peamiselt info jagamise eesmärgil. Kuna kasutajad ei ole enam rahul ainult toodete pragmaatiliste omadustega ehk kasulike funktsioonidega, vaid pigem ootavad rõõmu ja rahulolu, uurib antud magistritöö kuidas valitused saaksid kasu lõigata Web 2.0 võimalustest avalike teenuste kasutajakogemuse parandamisel. Läbiviidud uurimistulemused näitavad, et uuringu osalised tajusid Web 2.0 võimalusi väga ahvatlevatena, mis viitab nende võimele stimuleerida meie sünnipäraseid põhivajadusi nagu vajadus isikliku arengu või vajadus ennast väljendada ja olla teiste poolt nähtud teatud viisil.

Annex 1 Assessment survey results

1. Palun vali iga väite puhul vastus, mis enim väljendab sinu arvamust Minu Viljandi kohta.

	Väga nõus	Nõus	Ei üks ega teine	Ei nõustu	Üldse ei nõustu	Rating Average	Response Count
Lehte kasutades tunnen end turvaliselt	24.0% (6)	**60.0% (15)**	12.0% (3)	4.0% (1)	0.0% (0)	1.96	25
Mulle meeldib vaadata milliseid ideid ja probleeme teised on lisanud	**52.0% (13)**	44.0% (11)	4.0% (1)	0.0% (0)	0.0% (0)	1.52	25
Sellises keskkonnas on linnavalitsusega suhtlemine tore	24.0% (6)	**44.0% (11)**	20.0% (5)	8.0% (2)	4.0% (1)	2.24	25
Oma pärisnime avaldades mõtlen rohkem mida kirjutada	**48.0% (12)**	24.0% (6)	12.0% (3)	8.0% (2)	8.0% (2)	2.04	25
Sellel lehel tunnen, et minu arvamus on oluline	4.0% (1)	**52.0% (13)**	28.0% (7)	12.0% (3)	4.0% (1)	2.60	25
Teiste kasutajatega koos probleeme arutades saan ka ise rohkem teada	40.0% (10)	**44.0% (11)**	16.0% (4)	0.0% (0)	0.0% (0)	1.76	25
Leht vähendab linnavalitsusega suhtlemise stressi	28.0% (7)	**32.0% (8)**	28.0% (7)	4.0% (1)	8.0% (2)	2.32	25
Ma arvan, et minu lehekasutust jälgitakse	16.0% (4)	**52.0% (13)**	16.0% (4)	16.0% (4)	0.0% (0)	2.32	25
Mulle meeldib, et andmete saab kanda kaardile	32.0% (8)	**60.0% (15)**	8.0% (2)	0.0% (0)	0.0% (0)	1.76	25
Leht minu arvates usaldusväärne	20.0% (5)	**64.0% (16)**	12.0% (3)	4.0% (1)	0.0% (0)	2.00	25
Mulle meeldib, et lehe kaudu saan suhelda inimestega, kes on sarnases olukorras	40.0% (10)	**44.0% (11)**	12.0% (3)	0.0% (0)	4.0% (1)	1.84	25
Lehe kaudu on linnavalitsusega lihtne suhelda	24.0% (6)	**36.0% (9)**	24.0% (6)	8.0% (2)	8.0% (2)	2.40	25
Mind ei häiri, et minu profiil ja kommentaarid on avalikud	28.0% (7)	**56.0% (14)**	12.0% (3)	4.0% (1)	0.0% (0)	1.92	25
Selline leht kutsub mind rohkem kaasa mõtlema	20.0% (5)	**68.0% (17)**	8.0% (2)	4.0% (1)	0.0% (0)	1.96	25
					answered question		**25**
					skipped question		**0**

2. Palun vali iga väite puhul vastus, mis enim väljendab sinu arvamust Minu Viljandi kohta.

	Väga nõus	Nõus	Neutraalne	Ei nõustu	Üldse ei nõustu	Rating Average	Response Count
Mulle meeldib, et probleemidele/algatustele saab lisada fotosid	33.3% (8)	**58.3% (14)**	8.3% (2)	0.0% (0)	0.0% (0)	1.75	24
Probleemi/algatuse seotus kaardiga on loominguline	25.0% (6)	**50.0% (12)**	25.0% (6)	0.0% (0)	0.0% (0)	2.00	24
Probleemi/algatuse jagamine Facebooki aitab probleemi lahendada	16.7% (4)	20.8% (5)	**54.2% (13)**	8.3% (2)	0.0% (0)	2.54	24
Külastaksin lehte uuesti, et näha kas keegi on minu positust kommenteerinud	29.2% (7)	**54.2% (13)**	16.7% (4)	0.0% (0)	0.0% (0)	1.88	24
Külastaksin lehte uuesti, et näha milliseid uusi postitusi on lisatud	29.2% (7)	**62.5% (15)**	8.3% (2)	0.0% (0)	0.0% (0)	1.79	24
Külastaksin lehte uuesti, et sisestada uut probleemi/algatust	33.3% (8)	**58.3% (14)**	8.3% (2)	0.0% (0)	0.0% (0)	1.75	24
Külastaksin lehte uuesti, et niisama vaadata, kui midagi teha pole	20.8% (5)	25.0% (6)	**41.7% (10)**	12.5% (3)	0.0% (0)	2.46	24
Külastaksin lehte uuesti, sest see on äge ja huvitav veeb	8.3% (2)	29.2% (7)	**54.2% (13)**	0.0% (0)	8.3% (2)	2.71	24
					answered question		24
					skipped question		1

3. Palun märgi ära kõik sotsiaalmeedia teenused, mida järgnevatest kasutad.

	Response Percent	Response Count
Facebook	**83.3%**	**20**
Twitter	20.8%	5
YouTube	79.2%	19
MySpace	0.0%	0
Wordpress	12.5%	3
Friendster	0.0%	0
Blogger.com	12.5%	3
Flikr	12.5%	3
Orkut	25.0%	6
Ühegi neist	8.3%	2
answered question		24
skipped question		1

4. Mitu tundi nädalas sa veedad aega sotsiaalmeedias (Facebook jt)?

	Response Percent	Response Count
0 - 10 tundi	54.2%	13
11 - 20 tundi	41.7%	10
21 - 30 tundi	0.0%	0
31 - 40 tundi	4.2%	1
41 ja rohkem tundi	0.0%	0
	answered question	24
	skipped question	1

5. Mitu sõpra sul sotsiaalmeedia keskkondades (Facebook jt) enamasti on?

	Response Percent	Response Count
alla 10	12.5%	3
10-49	20.8%	5
50-99	12.5%	3
100 +	54.2%	13
	answered question	24
	skipped question	1

6. Mitut erinevat sotsiaalmeedia keskkonda sa kasutad?

	Response Percent	Response Count
0	8.3%	2
1-10	91.7%	22
11-20	0.0%	0
21-50	0.0%	0
	answered question	24
	skipped question	1

7. Palun märgi, kellega sa sotsiaalmeedia vahendusel peamiselt suhtled.

	Mittekunagi	Mõnikord	Üsna sageli	Peaaegu alati	Rating Average	Response Count
Lähedased sõbrad	4.5% (1)	**40.9% (9)**	31.8% (7)	22.7% (5)	2.73	22
Töökaaslased	18.2% (4)	**54.5% (12)**	22.7% (5)	4.5% (1)	2.14	22
Perekond	27.3% (6)	**50.0% (11)**	18.2% (4)	4.5% (1)	2.00	22
Sõbrad	4.5% (1)	36.4% (8)	**40.9% (9)**	18.2% (4)	2.73	22
Tuttavad	9.1% (2)	36.4% (8)	**50.0% (11)**	4.5% (1)	2.50	22
Võõrad	**54.5% (12)**	45.5% (10)	0.0% (0)	0.0% (0)	1.45	22
				answered question		22
				skipped question		3

8. Palun märgi ära põhjused, miks sa külastad sotsiaalmeediat.

	Response Percent	Response Count
Info otsimiseks	**87.0%**	**20**
Suhtlemiseks	60.9%	14
Olla kursus sõprade eluga	65.2%	15
Jagada oma kogemusi	52.2%	12
Pere ja sõpradega suhtlemiseks	39.1%	9
Mugavam kui e-post/telefon	34.8%	8
Uute sõprade leidmiseks	26.1%	6
Fotode jagamiseks	39.1%	9
Üritustega kursis olemiseks	69.6%	16
Sõbrad kasutavad	17.4%	4
Ärilisel eesmärgil	30.4%	7
Muud	13.0%	3
	answered question	23
	skipped question	2

9. Kui vana sa oled?

	Response Percent	Response Count
alla 20	4.3%	1
20-40	52.2%	12
40-60	39.1%	9
üle 60	4.3%	1
	answered question	23
	skipped question	2

Annex 2 Facebook presence of Estonian ministries

Ministry	Fecebook	Members	Info on web
Ministry of Education and Research	http://www.facebook.com/pages/Haridus-ja-Teadusministeerium/137318852972928?ref=ts	339 people like	yes
Ministry of Justice	no		no
Ministry of Defence	no		no
Ministry of the Environment	http://www.facebook.com/group.php?gid=145653058782259&	7 members	other fb
Ministry of Culture	-	-	-
Ministry of Economic Affairs and Communications	http://www.facebook.com/pages/Majandus-ja-Kommunikatsiooniministeerium/161066833939211	95 like	no
Ministry of Agriculture	-		
Ministry of Finance	-		
Ministry of Interior	-		
Ministry of Social Affairs	http://www.facebook.com/pages/Sotsiaalministeerium/146202672059406	223 like	no
Ministry of Foreign Affairs	http://www.facebook.com/valismin	2990	yes

Annex 3 AttrakDiff translation to Estonian

- Inimsõbralik- Tehnilist laad
- Isoleeriv- Ühendav
- Meeldiv- Ebameeldiv
- Leidlik- Tavapärane
- Lihtne- Keeruline
- Professionaalne-Ebaprofessionaalne
- Kole- Atraktiivne
- Praktiline- Ebapraktiline
- Meeldiv- Ebameeldiv
- Kohmakas- Lihtne
- Stiilne- Maitsetu
- Ettearvatav- Ettearvamatu
- Odav- Kallis
- Eemaletõukav- Ühendav
- Toob inimestele lähemale- Eemaldab inimestest
- Ebasoliidne- Esinduslik
- Eemaletõukav- Kutsuv
- Kujutlusvõimetu- Loominguline
- Hea- Halb
- Segadusttekitav- Selge struktuuriga
- Tõrjuv- Kutsuv
- Julge- Ettevaatlik
- Uuenduslik- Vanamoodne
- Igav- Huvitav
- Vähenõudev- Väljakutse
- Motiveeriv- Tõrjuv
- Uudne- Tavaline
- Kontrollimatu- Kontrollitav

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