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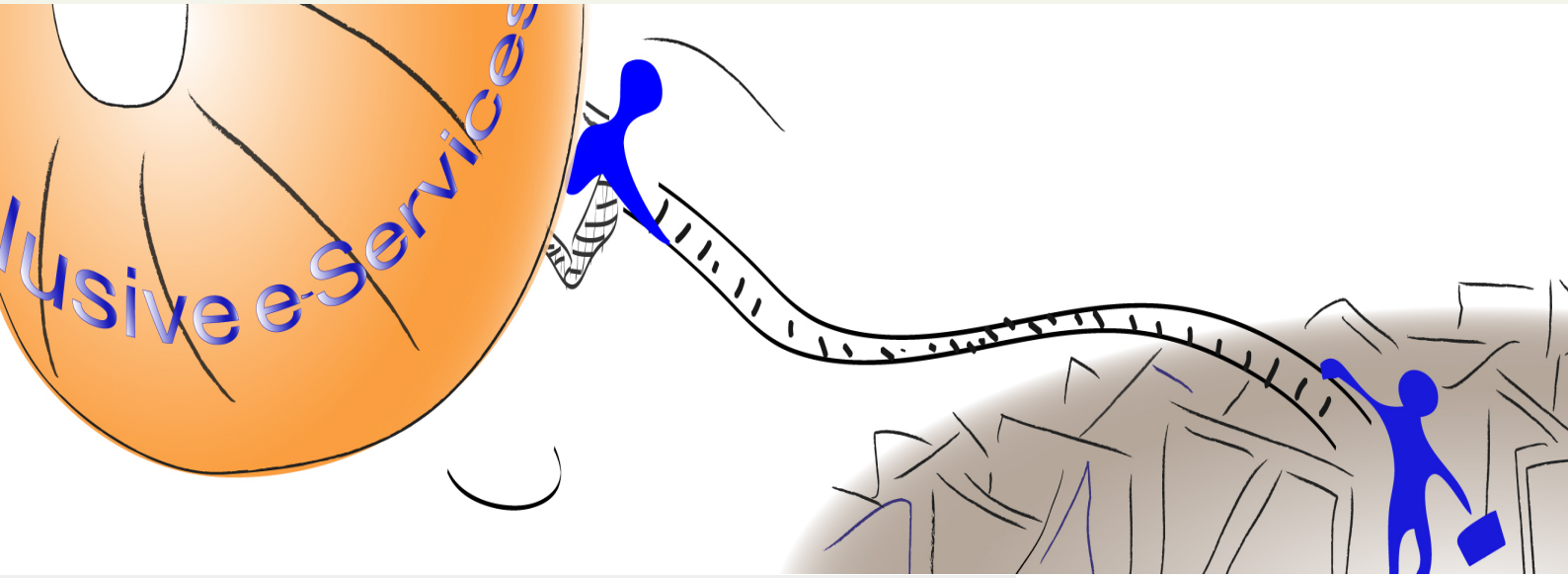
Inclusive e-services



Editorial

Articles

The European Journal of ePractice is a digital publication on eTransformation by ePractice.eu, a portal created by the European Commission to promote the sharing of good practices in eGovernment, eHealth and eInclusion.

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Editorial: Inclusive e-services

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This third issue of the *European Journal of ePractice* analyses attempts by local, regional and national governments and agencies to use new technologies to promote social inclusion. In its i2010 eGovernment Action Plan, the European Commission sets out a vision for the take-up and use of e-services across member states with the objectives of not only improving efficiency and saving taxpayers' money, but also expanding democratic participation. In order to achieve these goals, it is expected that by 2010 all citizens will have access to services through a variety of channels, such as digital TV and mobile phones as well as computers. Additionally, the European Commission has recently launched a European initiative on eInclusion. Contributors to this issue reflect on what has been achieved and what still needs to be done from a variety of perspectives and contexts.

Bridgette Wessels uses the case of South Yorkshire, England, to demonstrate how regional partnerships, linking public and private sector organisations, can play a role in fostering eInclusion in relation to local needs. Many people living in South Yorkshire do not already have access to ICT nor high levels of education. Thus, this case shows how a regional partnership can be effective in developing ICT capacity from a low base. Staying at the regional level, but moving to Hungary, Marianne Posfai and Andrea Fejer show the importance of providing professional, individualised training to help people make effective use of eGovernment services. They describe the development of an eCounsellor network in which trained local professionals provide assistance to people living in small, underdeveloped, isolated, rural communities to help in the effective use of the Hungarian eGovernment portal which provides access to many basic government services.

The focus of the article by Beate Schulte, Ulrike Peter, Jutta Croll and Iris Cornelssen is the design of websites. They describe how a national competition is used in Germany to stimulate best practice in the design of accessible websites. The number of entrants to the competition has more than doubled since it began in 2003. The authors show how such a competition, involving people with disabilities in both the design of the criteria and in judging entries, can play an important role in improving overall accessibility.

Peter Verdegem and Pascal Verhoest provide the results of a Belgian study about non-adopters. In a country such as Belgium, and many other EU member states, internet use is already very high, so measures adopted a decade ago to stimulate take-up may not be appropriate for those who remain hard to convince of the utility of the technology. Verdegem and Verhoest propose a 'relative utility' approach for stimulating ICT acceptance, based on the needs of specific user groups, and suggest that customised packages developed by professional organisations, the industry and government will be more effective than 'internet for all' projects.

Ali Riza Cam raises an important area, often neglected in discussions of eInclusion, namely the role of technology in the modernisation of legal and judicial systems. He describes a project launched in Turkey in 2001 as part of its EU accession programme. Transparency, absence of corruption and equal treatment of citizens are all essential features of modern judicial systems. Through this comprehensive and ambitious national programme, Turkey is now ahead of many EU member states in its use of technology in the legal system, thus providing an example of good practice from which others could learn.

The development of successful inclusive e-services is very much dependent on local circumstances, especially historical patterns of social exclusion. These articles provide fascinating accounts of five very different attempts to foster digital and social inclusion. While they are not blueprints for others, they do offer ideas and insights from which we all can learn.

Creating a regional agency to foster eInclusion: the case of South Yorkshire, UK

The focus within regions in Europe, in line with the Riga Ministerial Declaration (2006), is to foster eInclusion by providing access for all, building e-skills and e-literacy, providing broadband infrastructures and inclusive eGovernment. Regional partnerships are emerging as agents in creating innovative use of information and communication technology (ICT) for eInclusion in relation to local needs, contexts and aspirations. The British region of South Yorkshire is a microcosm of barriers to eInclusion, with many of its citizens having low levels of ICT access, which interacts with factors such as older age, unemployment and low levels of education to produce risks of a digital divide building on existing inequalities.

The case of South Yorkshire shows how a regional partnership seeks to build ICT capacity from low levels of ICT knowledge in the community. It aims to achieve this through outreach teams that educate individuals to use ICT in their homes or in various community-based locations supported structurally by a social delivery model. Its innovative approach links community facilities and actors to foster eInclusion within the everyday life of individuals who may experience aspects of a digital divide. The strategy involves the development of 'Digital Outreach Teams' and a 'Digital Directory' that integrates the use of ICT in everyday settings with service providers and businesses. The aim is to generate a public agency in the community to build ICT capacity in developing an inclusive information society region.

This South Yorkshire Public Sector e-Forum agency for the regional partnership is important in enabling the transformation, because it can link the everyday lives of citizens with services and businesses through an ICT infrastructure and a clear strategy for eInclusion.

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Keywords

eInclusion; forum; public agency; regional partnerships, barriers, ICT capacity, digital divide

> "The development in South Yorkshire is seeking to create an inclusive information society, which at one level is grounded in community development but is also one that is producing a rethinking of strategies to combat a digital divide in the everyday lives of local people."

1 Introduction

To generate an inclusive information society, regional actors in Europe seek to provide access to information and communication technology (ICT), foster e-skills, develop broadband infrastructures and create accessible eGovernment. The European Union (EU) Riga Ministerial Declaration (2006) addresses eInclusion through the promotion of inclusive ICT and the use of ICT to achieve wider inclusion objectives. The Declaration's targets for 2010 are: to reduce gaps in Internet usage by half; to achieve 90% broadband coverage for all Europeans to overcome geographical divides; to achieve inclusive eGovernment by all public websites being accessible; and to reduce the digital literacy gap by half (Riga Ministerial Declaration, 2006: 1-5). However, the Riga Dashboard (2007) study points out that progress to achieve eInclusion is slow and requires policy interventions. In this context, a key challenge for policy makers and developers is how to generate ICT capacity within communities and across regions for eInclusion. This is requiring policy makers to develop innovative strategies for eInclusion that are sensitive to the needs of local populations. The aim of this paper is to explore an innovative strategy developed by the South Yorkshire e-Forum Partnership that aims to foster eInclusion through a framework of ICT capacity building in the community. The case of South Yorkshire is instructive, as the region faces many barriers to eInclusion such as high levels of unemployment and disability, low educational attainment, and significant levels of older people. The objectives of the paper are to discuss the strategy and point out how a regional agency is important in developing eInclusion programmes that meet local needs.

The paper first outlines my methodology in researching the case study. Second, it discusses European Union Information Society policy in relation to eInclusion. Third, it considers a rethinking of strategies to overcome the digital divide. Fourth, it discusses the case of South Yorkshire and its strategy of 'Making IT Personal'. The conclusion points to the importance of agencies at the regional level in developing eInclusion, as well as outlining anticipated outcomes of the South Yorkshire strategy.

2 Methodology

The paper is based on a four-year participant observation study (2003 to 2007 funded by KTOF –HEIF 2 and Sheffield University staff research) of a South Yorkshire e-Forum Partnership. I joined the partnership as an associate member and attended 30 of their meetings. I conducted 20 interviews with members of the partnership and I took part in 5 regional workshops focusing on eInclusion. I represented the region at the EU Ministerial Meeting on Inclusive Information Society in Riga 2006. I took notes from observations and interviews as well as the more informal conversations that developed over time in the field. The interpretive approach meant that the data was analysed from the perspectives of the regional actors to identify their ideas in addressing eInclusion.

3 European Information Society and eInclusion

The Lisbon European Council's (March, 2000) strategic goal for 2010 is that the EU should become a competitive knowledge-based economy, capable of sustainable economic growth, have high levels of employment, and enhance social cohesion. European Information Society 2010 policy addresses core dimensions of this goal, and the Riga Ministerial Declaration (11 June 2006) specifically focuses on 'eInclusion to reduce gaps in ICT usage and to promote the use of ICT to overcome exclusion' (Riga Dashboard Study, 2007: 3). The Riga Ministerial Declaration points out that 57% of individuals living in the EU do not regularly use ICT and these gaps in usage mean that many Europeans do not reap benefits from ICT (Riga Ministerial Declaration, 2006: 1). Divisions in ICT usage are clearly seen in relation to age, educational levels, and employment status. For example:

- 10% of persons over 65 use Internet, against 68% of those aged 16-24
- 24% of persons with low education use the Internet, against 73% of those with high education

– 32% of unemployed persons use the Internet against 54% of employed persons

– In relation for accessibility of ICT for those with disability (15% of the EU population) only 3% of public web sites complied with the minimum web accessibility standards (ibid.).

These statistics show how levels of ICT usage can link with situations of exclusion, such as unemployment and lack of opportunities due to low education, disability, and ageing. Furthermore, there are regional differences in trends of social exclusion and low ICT usage (ibid. 2). Thus, for example, an ex-coal mining region such as South Yorkshire (UK) has high unemployment and high levels of disability and low levels of digital literacy but does have improving ICT access. Together these dimensions produce risks for a digital divide to form on top of existing patterns of exclusion.

4 Rethinking strategies for overcoming the digital divide

Generally speaking, the term digital divide addresses unequal levels of ICT access and skills that 'adds a fundamental cleavage to existing sources of inequality and social exclusion' (Castells, 2001: 247). Strategies to overcome a digital divide are not simply about access to ICT but involve the development of skills, improving literacy including digital literacy, generating relevant e-services to encourage use, and fostering capacity in developing participation in various Internet related communication, activity, and knowledge-generation. To foster eInclusion therefore involves providing training and supporting participation in ICT related activities, whether at work, in education, in political participation, in culture and in everyday life. Everyday life is an important dimension in fostering inclusion because situations of exclusion are experienced and managed in everyday life (Pilgram and Steinert, 2007) and the take up and use of ICT is negotiated in everyday life. Silverstone's (2005) research shows that ICT is differentially taken up within the varying routines of the everyday across European regions - for example, Greek migrant communities in London use publicly available ICT to engage in their Diaspora network; the lack of joined-up training for unemployed people in Liege hampers eInclusion, and rural Irish families use ICT for personal communication rather than civic engagement (Silverstone, 2005: 8-10).

The way ICT becomes embedded within everyday life is therefore an important aspect in fostering eInclusion. Silverstone conceptualised this process as 'domestication', which addresses the ways in which members of households shape technology by negotiating the social and economic spheres of public life with their own personal and domestic sphere (Silverstone, 1992, 2005; Haddon, 2004; Berker et al., 2006). The interaction between the public sphere and the private sphere is significant in strategies to overcome the digital divide as ICT is located at these boundaries (often blurring them) and interacts with other inequalities that are also being managed in everyday life. To foster participation in ICT involves the development of services that are relevant to individuals and groups within different situations. If e-services are seen as useful, then people will take up ICT to use the services, for example the EU Dialogue project (No. 97182) built services with women and children such as a virtual cookbook and children's interactive video-conferencing that generated inclusive and well-used services (Harrison and Wessels, 2005). To summarize, strategies for eInclusion need to consider interactions between the digital divide, the processes of domestication, and the development of user-led services and media (Silverstone, 2005; Wessels et al. 2008).

The development of eInclusion in particular localities and regions involves addressing the specific needs of local populations (Wessels, 2000, 2007). Although there are generic aspects to development and use of ICT, there is nonetheless specificity to particular developments that are shaped through the values and culture of developers and users. The agendas regarding development are located in legacy systems and contexts, in emerging technological innovations (and pathways), patterns of use, and user-developer configurations (Mansell and Steinmueller, 2000). Given this, it is useful to address particular regional cases to identify strategies that address specific contexts of eInclusion (Wessels, 2007; Wessels et al., 2008). I am using South Yorkshire as a case study because of its strategy of

linking up community facilities and actors to foster eInclusion within the dynamics of everyday life, digital divides and exclusion.

5 Region and eInclusion: the case of South Yorkshire, UK

South Yorkshire is one of Europe's poorer areas with fewer businesses and fewer and less well-paid jobs than other regions. It lost its industrial base of mining and steelmaking in the 1970s and 1980s and its economy continued to decline to a point where the Gross Domestic Product fell to less than 75% of the European average in the late 1990s. Due to this, South Yorkshire was designated as an Objective 1 area (the highest category for European support) at the Berlin Summit in 1999. It received £2.4 billion in total, with £770 million from the European Union's Structural Fund with the rest made up from UK public and private sector resources. The Objective 1 Programme in South Yorkshire was launched in July 2000 and ends in 2008 (http://www.goyh.gov.uk/goyh/eurofund/o1).

The region is made up of the City of Sheffield, three large urban centres of Doncaster, Rotherham and Barnsley and rural ex-coalmining communities that have high levels of deprivation. The statistical profile of the population maps some of the indicators that suggest a risk of low take-up of ICT as identified by the Riga Dashboard study (cited above p. 2 and 3) and Castells (2001), who argues that ethnic minority groups are at risk of a digital divide. The figures are:

- 18.9% are over 65 years-old
- 24% are not economically active
- 60% do not achieve National Vocational Qualification Level 3
- 9.3% claim Incapacity Benefit and Severe Disability Allowance
- 36% Pakistanis; 19.5% mixed race; 10% Black Caribbean.

  (South Yorkshire Partnership, 2006)

In South Yorkshire there is a strong commitment to eInclusion as part of an overall strategy for regional economic competitiveness and for social cohesion. To this end, regional policy makers have developed a public agency for ICT strategy, development and implementation, which is called the South Yorkshire Public Sector e-Forum. The group has representatives from the four local authorities (Sheffield, Barnsley, Rotherham and Doncaster) and from the partners in e@syconnects, which is a public sector partnership of service providers that delivers multi-agency e-services that dovetail with the provision of inclusive eGovernment. Together these partners have established inclusive eGovernment, a Riga eInclusion target.

Another part of regional strategy is to improve economic performance through the development of knowledge economy, and the region has invested in fast, high-width broadband and in the Cultural, Creative and Digital Industries. These industries are a key sector in the area and they employ 60,000 people across the region. The sector is characterised by new starts and rapid growth, and a comprehensive programme of creative and digital flagship projects with the ability to catalyse the growth more widely are being developed in the region including:

- E-Campus, Sheffield
- Digital Media Centre, Barnsley
- Digital Knowledge Exchange element of Doncaster Education City

- A range of digital SME initiatives around CENT@Magna, Rotherham
- Business Innovation Centres in Barnsley, Doncaster, North East Derbyshire, Bassetlaw, and Chesterfield

This part of the strategy has achieved the Riga target of broadband coverage by developing an ICT infrastructure as well as an ICT commercial skills base for building a competent ICT region.

With the objectives of regional broadband and eGovernment met, the South Yorkshire Public Sector e-Forum seeks to address gaps in Internet usage and digital literacy by integrating ICT in the everyday life of local people, local business and local services. This builds on existing services that provide a single point access through a range of user-friendly technologies such as interactive digital television (DiTV), mobile phones, multi-media kiosks, as well as PCs. For example, service users without PC access at home find that the 'booking doctors appointments online' service is easy by using their DiTV. In user-evaluation research, one unexpected benefit emerged when an older woman said that she "always checks the doctors appointments on the TV before going to bed to be sure that an appointment is available" should she need one, which she finds very reassuring. From a service provider view, this service has reduced missed doctors' appointments by 30%, improving efficiency of doctors' surgeries.

The e@syconnects partnership has worked in the region for 10 years developing projects such as jobs-hotline, schools-online, and niche services like young people's e-discussion groups. Qualitative user-feedback identifies that users find that the jobs-hotline service enables them to respond quickly to new job vacancies, which improves their chances of getting work. Young people say that they enjoy the e-discussions as it gives them a space for debate, and parents and schools both say that the schools on-line is useful in exchanging information regarding events at school. Elderly people state that the key benefit of the online link between Benefits and Health services is that hospitals can inform the Benefits agency that they are in hospital and adjust their benefits immediately rather than them having to deal with the agency when they get home. There is also a learning aspect in the use of e-services. For example, an 82 year-old woman after using her DiTV to book a doctor's appointments wanted a laptop so that she could go on Friends United; now she is a confident ICT user. In overall terms, e-services are proving to be useful to local residents and the uptake of individual e-services is 50% for the 'doctors online' service and 93% for the 'jobs hotline'. An evaluation of e@syconnects services by Front Office Shared Services in 2007 also identified cost savings of £135,000 to £190,000 for each service, and a saving of £250,000 in transactional costs.

E@syconnects has a grounded understanding of developing e-enabled projects from a citizen perspective and it links with senior policy makers from a range of services and ICT departments in the e-Forum. The knowledge within the e-Forum Partnership is now being harnessed to build capacity within the community by linking services, ICT and people for eInclusion.

6 The South Yorkshire Strategy for eInclusion: 'Making ICT personal: Connecting the DOTs'

The South Yorkshire Public Sector e-Forum decided that to address eInclusion they had to find ways to connect people with each other, with services and organisations, and in forms of community participation. In meetings and workshops, members of the e-Forum identified their aim, which is to "create a genuinely connected society where every person is empowered to improve lives, strengthen neighbourhoods and drive change through ICT" (e-Forum member). The rationale for doing so is based on the fact that local communities are struggling through economic change because of the decline of traditional industry and if ICT is developed within an information society it can support regional regeneration to enrich local people's lives. However, the e-Forum's user needs research identified three barriers to use: 1) ICT was often seen as not relevant; 2) there was fear around ICT; and 3) the cost involved in getting and using ICT. Given this, the public agency decided to facilitate "the use of

personalised ICT where people want it and need it most – in the home, streets, shops and personal interaction points in the community - to ensure existing ICT initiatives are meaningfully connected, communicated and accessible to all" (Director of ICT, e-Forum). The ICT Director of the e-Forum summarizes the argument for their strategy called 'Making IT Personal: Connecting the DOTs' as:

"The technology exists. The services are online. The community vehicles are in place. The missing element is people. Rather than introducing new 'gizmo's', we believe the *real* digital challenge is to empower people to shape their own lives"

The strategy has two core components, which are Digital Outreach Teams (DOTs) and a Digital Directory, where personal ICT outreach and education links with e-services and a variety of social and economic opportunities. Volunteers for the DOTs will be drawn from information workers such as librarians, wardens and information providers, but also from public, private and voluntary sectors and from community programmes such as Age Concern and National Youth Volunteers. A programme team will manage the DOTs and there will be a regulation framework for them, including Police security checks of volunteers, as they will be entering private homes and the safety of the residents needs to be ensured. The training of DOTs will be based on an accreditation model (possibly Microsoft accreditation) that offers people training in hardware and software skills. The growing knowledge network of DOTs and users will be harnessed in the shaping of services and in the empowerment of all to build ICT and social capital in communities (Cachia et al. 2007).

Members of the DOTs will train and support people in the use of ICT in their homes, bingo halls, community centres, libraries, post offices and new media start-up businesses and so on. By having DOTs working out in the community, they will become a highly recognisable and accessible part of everyday life. The teams will have a clear identity and branding in the community, and through the knowledge they accrue in doing their work they will support inclusion by:

- Sustaining existing progress
- Providing equal opportunities
- Innovating service design and delivery
- Providing feedback to redesign workflow
- Anticipating future challenges and trends.

The presence of DOTs in community life links to the second part of the strategy that involves creating a structural underpinning for a social delivery model to connect the DOTs. The structural underpinning is based on a Digital Directory that gathers feedback from individuals and communities, which informs the improvement of services and enables local priorities to be linked to mainstream services. The Directory is an information source for the community that connects citizens with each other and with community organisations. It provides organisations, agencies and companies with listings of neighbourhood resources, and is a resource to advertise existing initiatives and to promote e-transactions. The overarching logic of the plan is that:

"DOTs will foster and deepen coordination and integration between community and voluntary organisations by 'cross selling' their expertise and educating the community about their efforts. The Directory will underpin this initiative by acting as an online knowledge base for information sharing" (e-Forum ICT Director)

The e-Forum envisages the DOTs and the Digital Directory working together to:

- Give everyone skills to make technology integral to life
- Give everyone opportunity to benefit from ICT initiatives
- Eradicate top-down, fragmented service provision
- Ensure existing ICT initiatives are connected
- Create citizen centric governance ideas
- Drive service transformation through feedback
- Enhance develop of public service culture
- Connect neighbourhoods across the region.

(e-Forum memo, 2007)

The e-Forum uses fictional scenarios to envisage how the strategy could transform someone's life. The case of Doris is one fictional example. She is a 72-year-old widow of limited mobility who lives in a local authority owned bungalow. She has a weekly Home Help worker and volunteers from Age Concern visit her too. Doris has a range of issues that diminish her life, and the challenges for eInclusion are:

- Doris attends hospital regularly but sometimes forgets her appointments
- She has to remember to order and collect her three sets of tablets through repeat prescriptions
- If her hospital appointment clashes with her Home Help or Age Concern visits she misses out on that support
- Her income is her pension which she gets by on, but without much to spare
- She once went into hospital for a week and came home to a threatening letter from her electricity company. She now panics about missing her utility bills
- The hairdresser complains that she loses money every time Doris forgets an appointment
- She doesn't have much contact with scattered family and friends.

The e-Forum scenario envisages that when Doris collects her pension at the Post Office she mentions that she forgets her hospital and hairdresser's appointments. The Post Office worker suggests Doris to talks to a DOT volunteer about people getting alerts through DiTV. There is a DOT hub in the Post Office and a DOT volunteer arranges a discounted DiTV package and shows Doris how to use it. The DOT volunteer also shows the hairdresser how to send a reminder from her mobile phone to Doris. Doris is delighted with the service and wishes this sort of thing could be done for all the other things she forgets - what about timing the hospital, Home Help and Age Concern visits better? To arrange this, the DOT volunteer, the Home Help worker and the Age Concern volunteer and Doris get together. The end point for Doris is that all her appointments are on her e-diary so any clashes flag up an alert to the person making it, and to Doris. Her shopping is done online, which frees up Age Concern volunteers to help Doris with other matters. There is an automated alert from the utility companies to the Home Help when a red bill is issued, so that they can help Doris to manage her anxieties about bills. Doris has her benefits checked and gets additional income. Furthermore, with the DOT's help Doris starts to communicate via email with her children and grandchildren.

The scenario also shows from the service perspective how the council, health services and local community voluntary services can develop software to allow integrated diary planning for customer services. This would involve the e-Forum's public sector partner, Business Link, which would work with mobile phone companies, email providers and the local business association to develop and extend the use of reminders for individuals. The Credit Union would be involved to set up a one-to-one arrangement with a supermarket chain that undertakes a marketing campaign on the estate, and the local community association would set up a fresh produce food buying co-operative service, with discounts from local producers … and "who knows what else" (e-Forum, Director of ICT). The e-Forum, therefore, sees eInclusion in terms of building the e-capacities of everyday users with service-providers and businesses, and integrating digital innovation within the regional economy.

The architecture behind this strategy is one network, and within that network developing a structure of feedback loops for information sharing, learning, and ongoing development (Benkler, 2006; Stewart, 2007; Williams et al. 2005). The components and process are represented in the following two figures.

Figure 1 shows the way in which the DOTs and the DOT Directory would be located within the region. The DOTs, the Contact Centre and DOT Directory are placed in the centre of the diagram. The top left hand side of the diagram shows key localities for the DOTs to work in such as Thurgoland, Sharrow, Kendray, Crow Edge, and Netherthorpe and some of the locations such as Learn Direct Centres, UK Online Centres, shops, Post Offices, schools, older people's homes, youth clubs, libraries and other public buildings. The bottom left hand side of the diagram shows the components needed by DOTs to work in community settings, which include IT, furniture, design, and branding. The right hand side of the diagram shows the human resource aspects of the strategy. There would be a team of organisers and trainers who would manage the DOTs, oversee governance of the service and manage the DOT operational system. DOT volunteers would undertake the community work. The bottom right-hand side of the diagram links to the organisation of the DOT Directory. In line with suitable governance procedures, information will be gathered and stored in a data-warehouse to support a voluntary database, a local business directory, and a multiple services notification system forming a virtual network. The central feedback mechanism that will shape the service to meet changing needs and expectations is made up of citizen feedback data and analysis (including e-petitions), a re-engineering tool and a service transformation engine.

Figure 2 outlines a process map for 'bottom-up' service re-engineering. The left hand side identifies the various sources of gaining community feedback, such as single-issue comment, service feedback, complaints, consultations, citizens' panels and so on. This feedback can be gained via intermediaries, community forums, e-mail, and e-petitions, for example. This information, some of which will be structured and some unstructured, is then fed into an analysis process that interprets the information in relation to current services, policy and community issues. This enables a service gap analysis that takes into account service process maps including inter-agency processes for joined-up services. This analysis is fed into a cross-agency change management board that drives change. Based on the analysis, the change management board and the shared services transformation centre, design and transform services, map a re-design process and test the re-design with the public. An implementation plan is formulated for a new service, which is then delivered. Once a new service is running, user feedback will inform the same system of service analysis and redesign in a bottom up service re-engineering process.

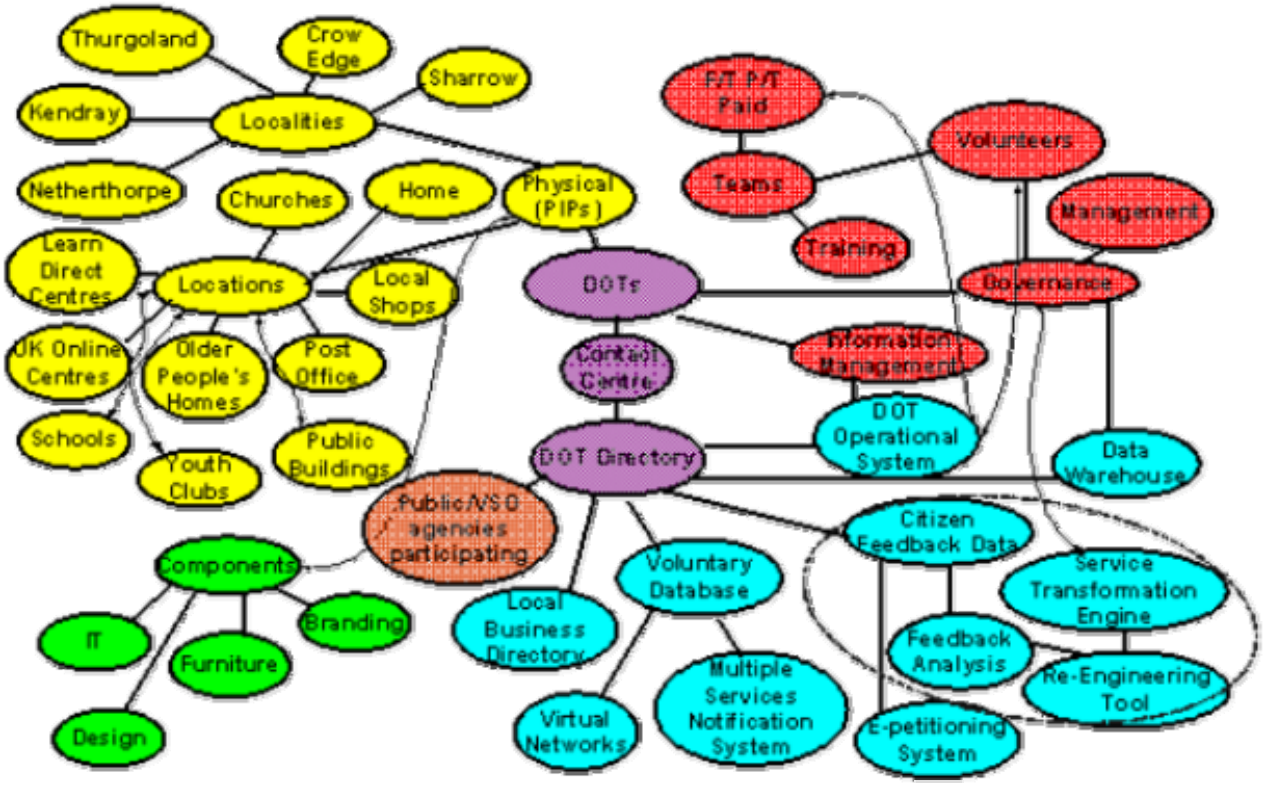

Figure 1. *Making IT Personal – DOT and DOT Directory Components*

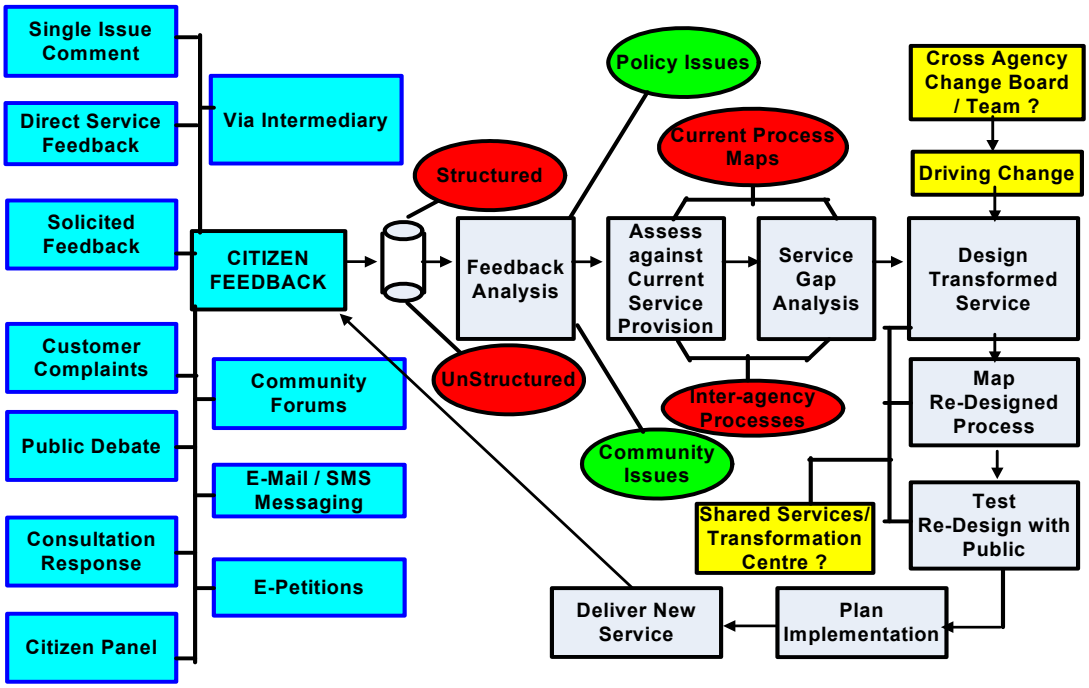

Figure 2. *Making IT Personal - Bottom-up Service Re-Engineering Process Map*

Source: South Yorkshire Chief Executive's Meeting 18th September 2006

The South Yorkshire vision of eInclusion focuses on human contact to protect against exclusion through community engagement, active citizenship and improving regional opportunities for jobs and businesses that are underpinned by ICT training and activity in everyday life. Through innovative developments grounded in community expertise and knowledge, the South Yorkshire e-Forum aims to foster interest and participation in communities that will trigger and support change, technological, economic and social. The overall programme is built on existing work by e@syconnects and on broader regional economic strategies within the strategic view of the South Yorkshire e-Forum. The vision is supported by the chief executives of the local authorities, who have released funding for a three-year 'Making IT Personal' eInclusion programme with Sheffield Hallam University.

7 Conclusion

The Riga Ministerial Declaration's agenda to address eInclusion is based on inclusive ICT and the use of ICT to achieve wider inclusion objectives and policies. The case of South Yorkshire shows the barriers to eInclusion are complex and to achieve eInclusion requires innovative strategies to build ICT capacity within communities. South Yorkshire's e-Forum, as well as the practical knowledge of e@syconnects, are valuable sources of expertise in the development of regional strategies to address eInclusion. Their expertise with ongoing user-needs research and evaluation supports their 'Making IT Personal' strategy, which addresses the digital divide and ICT in everyday life. This strategy means addressing both the development of networks in the public realm and the domestication of ICT in the private sphere in a way that integrates the public and the private for eInclusion and community engagement in a regional economy. The development of DOTs and the Digital Directory are mutually supportive in overcoming gaps in ICT usage and in developing digital literacy and e-skills in the region. The anticipated outcomes include ICT training for everyone with structures for community feedback so that as community-based users can start to shape the development and sustainability of eInclusion. The strategy facilitates service-providers and business developers to create new products and services from the feedback that contributes into a growing (regional) knowledge economy. The development in South Yorkshire is seeking to create an inclusive information society, which at one level is grounded in community development but is also one that is producing a rethinking of strategies to combat a digital divide in the everyday lives of local people. This innovative strategy with the region's existing programmes of eGovernment and ICT infrastructure is one way to address the Riga targets for eInclusion in the context of a region whose population is at risk of being excluded from information society developments.

References

Benkler, Y. (2006): The Wealth of Networks: How Social Production Transforms Markets and Freedom, Yale: Yale Press.

Berker, T., Hartmann, M., Punie, Y., & Ward, K. (Eds.) (2006). Domestication of Media and Technology, Maidenhead: Open University Press.

Cachia, R., Kluzer, S., Cabrera, M., Centeno, C., and Punie, Y. (2007): ICT, Social Capital and Cultural Diversity. Report on a Joint IPTS-DG INFSO Workshop, Institute for Prospective Technical Studies: EUR 23047 EN

Castells, M. (2001). The Internet Galaxy: Reflections on the Internet, Business and Society, Oxford: Oxford University Press.

European Commission (2006): The Riga Ministerial Declaration on eInclusion, ec.europa.eu/.../events/ict_riga_2006/doc/declaration_riga.pdf.

European Commission (2007): Measuring progress in eInclusion, Riga Dashboard, ec.europa.eu/…/einclusion/docs/i2010_initiative/rigadashboard.pdf

Haddon, L. (2004). Information and Communication Technologies and Everyday Life, Oxford: Berg.

Harrison, J. & Wessels, B. (2005). A new public service communication environment? Public service broadcasting values in the reconfiguring media. New Media and Society, 7 (6), 861-880. London: Sage.

Mansell, R. & Steinmueller, W. (2000). Mobilizing the Information Society: strategies for growth and opportunity, Oxford: Oxford University Press.

South Yorkshire Partnership (2006). Progress in South Yorkshire, Sheffield: Sheffield Regional Development.

Silverstone, R. & Hirsch, E. (Eds.) (1992). Consuming Technologies: media and information in domestic spaces, London: Routledge.

Silverstone, R. (Ed.) (2005). Media Technology and Everyday Life in Europe, Aldershot: Ashgate.

Steinert, H. & Pilgram, A. (Eds.) (2007): Welfare Policy from Below: Struggles against Social Exclusion in Europe, Aldershote: Ashgate.

Stewart, J. (2007): Local Experts in the Domestication of Information and Communication Technologies, Communication, Information and Society 10 (4), 547-569. London: Routledge.

Wessels, B. (2000). Telematics in the East End of London: New Media as a Cultural Form. In New Media and Society, 2 (4), 427-444. London: Sage.

Wessels, B. 2007. Inside the Digital Revolution: policing and changing communication with the public, Aldershot: Ashgate

Wessels, B., Walsh, S., & Adam, E. (2008). Mediating Voices: Community Participation in the Design of E-Enabled Community Care Services, The Information Society 24 (1) 30-39. Philadelphia: Taylor and Francis Publishers.

Williams, R. Stewart, J., and Slack, R. (2005). Social Learning in technological innovation: experiments with information and communication technologies. Cheltenham: Edward Elgar.

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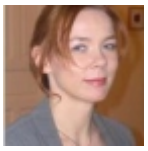
The eHungary Program 2.0 - Building an Army of eCounsellors to fight against digital illiteracy

Andrea Fejer

eHungary Project



Marianna Posfai

eHungary Project

Keywords

eInclusion, community access points, underdeveloped regions, digital gap, piaps, knowledge, ecounsellors

The target group of the eHungary Project of the Hungarian Ministry of Economy and Transport are citizens living in underdeveloped regions and the members of lower social classes. For these people it would be a huge opportunity to be able to compete on the various fields of life by having access to the eWorld through outstanding community access points. Approximately 80% of the general population in Hungary does not possess even the most basic digital knowledge. For these citizens, the only way to be able to compete in the various fields of life is to have access to public digital learning points, where they can approach ICT guided by committed professionals.

The eHungary Program is addressing this situation with the introduction of the eCounsellor network, a service through which professionals provide personalized assistance to citizens in the effective usage of electronic information, services and knowledge. Another step taken for the realization of the program has been the successful establishment of 1,500 Internet community access points, the so called eHungary points, in community locations such as libraries, telecentres and cultural venues.

One of the main goals of the program is to decrease the digital divide of disadvantaged groups, to assist underdeveloped communities, and to strengthen the economic competitiveness of Hungarian regions.

> “The goal is to ensure at least one eHungary point per community and two eCounsellors per eHungary point – this means that there will be 3,000 eCounsellors by the year 2010.”

1 Introduction

Upon Hungary's accession to the European Union, the Hungarian Government has adopted the "Hungarian Information Society Strategy"[1] . This document highlights the fact that Hungary's main aim is to fight for equal digital opportunities for all layers of society in order to reach the European Union standards and better living conditions for its citizens.

The Strategy was of essential importance, since Hungary is lagging way behind other countries in digital literacy. Figure 1 shows that in home Internet access, Hungary is less connected than the average EU country, being the situation much worse than in the Eastern-European countries that also adhered to the European Union in 2004.

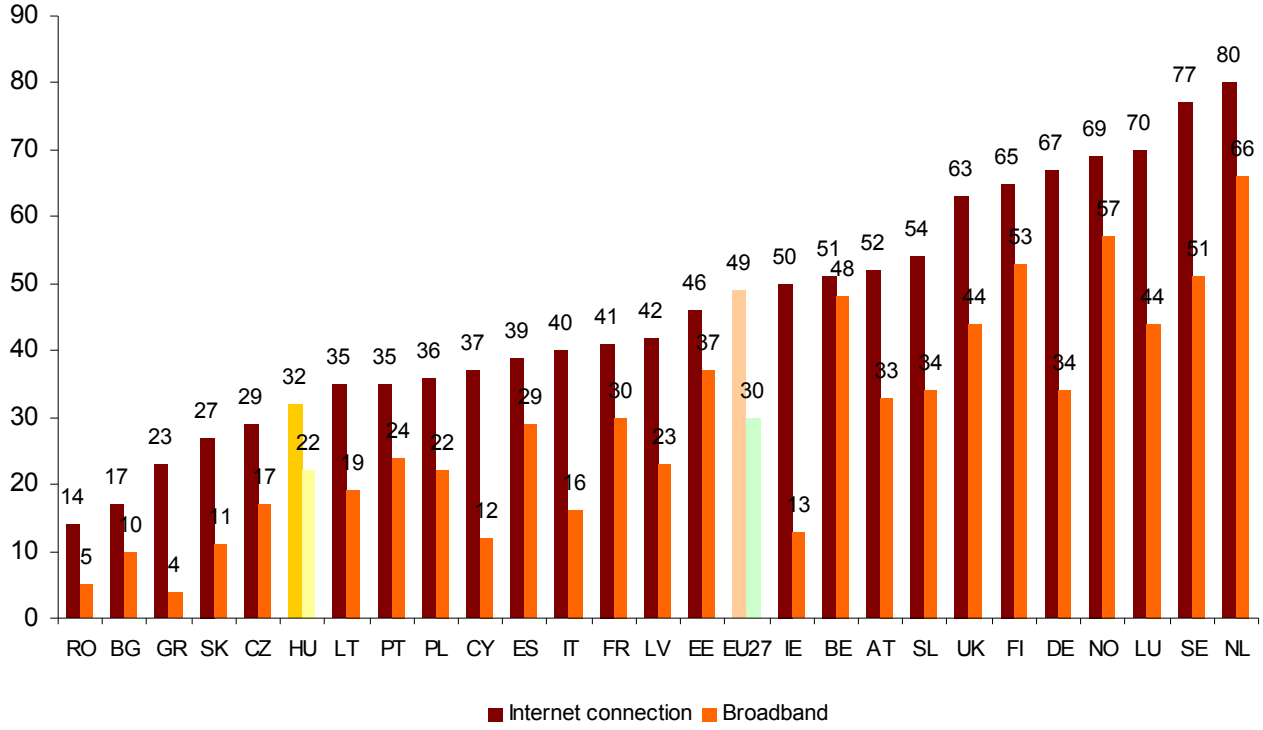


Figure 1. The percentage of households with Internet access and broadband connection in the EU in 2006 (Source: EUROSTAT - http://epp.eurostat.ec.europa.eu/)

The figures show that 56% of the adult population, 4.5 million people, are digitally illiterate[2]. Moreover, this percentage encompasses the population of the capital Budapest, whose inhabitants are more digitally developed than those in smaller settlements. Therefore, a more realistic calculation shows that approximately 80% of the general population does not possess even the most basic digital knowledge. For these citizens the only way to be able to compete in the various fields of life is to have access to well-working community access points, where they can be guided into the enchanting world of the Internet by committed professionals.

Therefore, the Hungarian Ministry of Economy and Transport has developed the eHungary Program with the goal of ensuring ICT access, tools and knowledge for everyone, everywhere, regardless of race, gender, age or social class, and thus successfully fight the digital divide in Hungary.

[1] Hungarian Information Society Strategy: http://www.itktb.hu/engine.aspx?page=MITSkezdo_hun
[2] World Internet Project (WIP): http://www.worldinternetproject.net/

2 Stage One – The eHungary Program 1.0

One of the steps taken for the realization of this goal was the successful establishment of 1,500 Internet community access points (Figure 2), the so called eHungary points, within the framework of the eHungary Program 1.0.

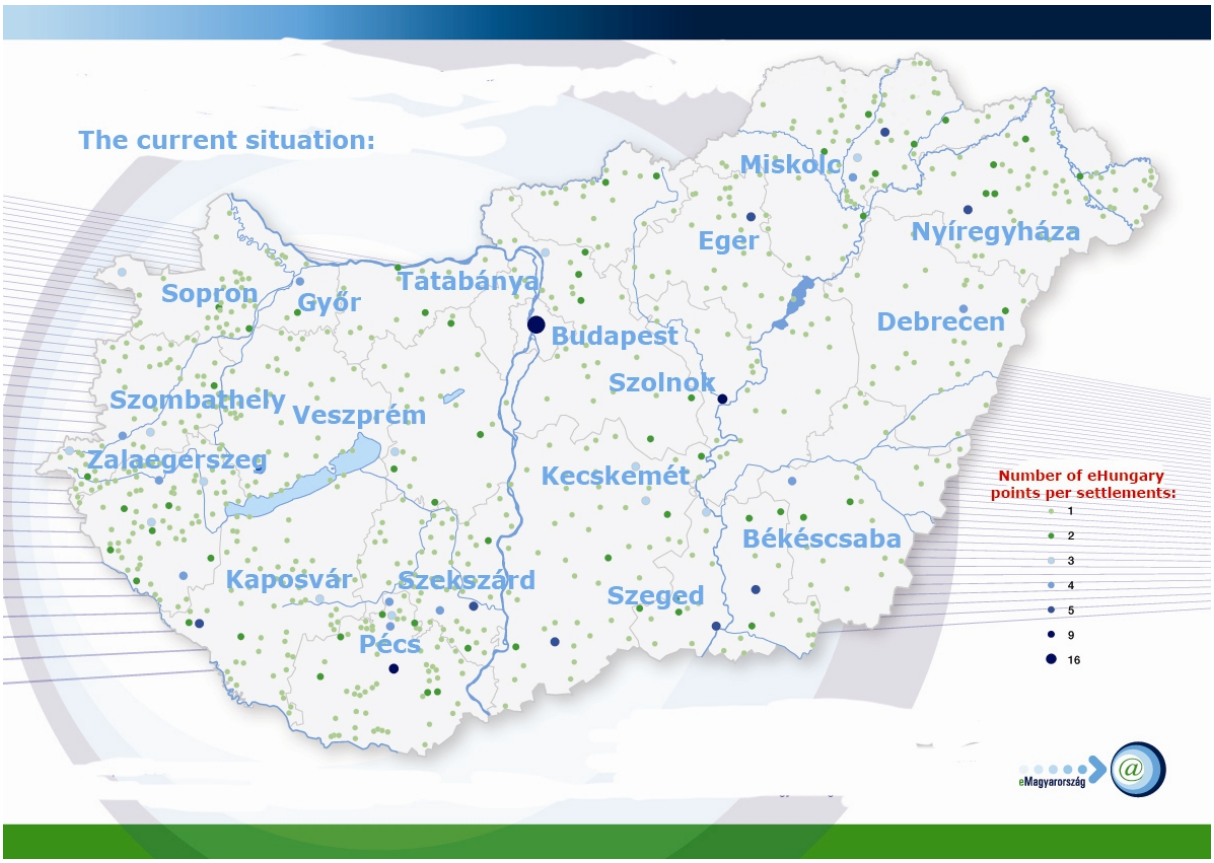


Figure 2. The current distribution of the eHungary points

The eHungary Points were established in various community locations, such as libraries, telecentres, cultural centres, etc. All Points received a minimum of two computers and free Internet access. With this move the country made a significant progress regarding the number of community access points available per capita. However, this was just an initial phase in which merely the infrastructure was established.

3 The eHungary Program 2.0

Based on the pilot phase of the eHungary Program 1.0. it has become clear that there is an acute need for the actual development of the program, since it proved that giving tools without the knowledge to use them is not an entirely successful strategy. People need guidance in the process of approaching the challenges of the Digital Society.

Therefore, 2007 was the year of development, innovation and introduction of additional services to the eHungary Program. It started with the launching of the eHungary Program 2.0 (eHuP 2.0).

The main goals of this second stage are the following:

- Narrowing the digital divide,
- Equal opportunities in the information society,
- Assist underdeveloped communities and marginalised groups,
- Strengthen the economic competitiveness of underdeveloped regions.

The three tools of these ambitious plans are:

- Intense local promotion of and awareness-raising about eGovernment services and eKnowledge,
- Guidance and personalised assistance for the usage of eServices with eCounsellors, and
- Providing quality-ensured eServices in all small settlements of the country.

4 eGovernance

eGovernance is a critical element of the puzzle. There are 2,863 small rural communities in Hungary with only 167 regional centres that have access to administrative services[3]. This means that several hundred people have to spend considerable amounts of money and time in order to be able to use basic governmental services. The government has recognized the acute need to make changes in order to ease the process by ensuring the availability of almost all of the 20 eGovernment services required by the EU. In spite of this fact, the very people who need it the most, the population of small, underdeveloped, isolated communities from Hungary's various micro-regions, cannot use them due to their lack of digital knowledge.

The eHungary Program 2.0 addresses this problem through the promotion of eGovernment services. eCounsellors offer training on the usage of the eGovernment Portal (www.ugyfelkapu.hu) and strive to convince people that the Internet is a safe and fast way to deal with their administrative affairs.

5 The eCounsellor network

The eCounsellor network is a service through which trained local professionals provide personalised assistance to the citizens in the effective usage of electronic information, services and knowledge. Through the teaching, informing and assisting presence of the eCounsellors, the eHungary points will become real servers of communities.

Being an eCounsellor is a very social profession that requires individuals to be committed to their profession, be open to the people and their problems and possess a strong sense of social receptivity. This is why the individuals chosen for this job are preferably not IT experts or system administrators, because experience shows that those who know too much about computers and Internet have difficulties in explaining the basics, making everything look more complicated. Instead, the ideal eCounsellor is a sensible person, who understands how things work and finds joy in sharing this knowledge with other people because he knows that he can help to make people's lives easier.

Generally, the eCounsellors can be people who have graduated from a higher education institution, meaning that they possess at least a college degree. Ninety percent of the eCounsellors are librarians, social workers and teachers who are carefully selected and thoroughly trained for this position. They are required to practice their counseling outside of their regular working hours so that they are able to concentrate entirely on their mission. Additionally, a new specialised training is also being developed,

[3] Source: Hungarian Central Statistical Office (www.ksh.hu)

targeting the very small or minority communities where it is difficult to find one or two dedicated trainers with college degrees.

The mission of the eCounsellors has three phases:

1. The eCounsellors' first priority is to issue a wake-up call to the community where they work. This is a task that requires excellent communication skills as it is based on direct contact with the people. The eCounsellors at this point try to draw people's attention to what the Internet can offer, attempting to stir their curiosity.

2. In the second stage the eCounsellor becomes the digitally illiterate people's personal "trainer". He guides those who have responded to the wake-up call through the first exploratory steps, providing them a basic knowledge that will give them the security and confidence elemental for conquering the fear of and reluctance towards the digital world.

3. On the third level, the eCounsellor's job is to start teaching. The training consists of basic digital knowledge transfer and the sessions are always held for small groups of up to five people. This ensures learning in a relaxed and intimate way. The thematic of these trainings vary: from teaching the basics of Microsoft Word usage to chatting, emailing, using eGovernment services and searching the internet for content, etc.

The path to becoming an eCounsellor consists of the following steps:

- 60-hours training
- Practical module – teaching, field-work
- Exam

1,000 people are currently being trained and the 200 people who graduated last year are now completing their practical experience within the framework of the pilot phase of the program.

The goal is to ensure at least one eHungary point per community and two eCounsellors per eHungary point – this means that there will be 3,000 eCounsellors by the year 2010.

The six modules that are being taught currently (this is a dynamic curriculum, continuously developing based on the feed-back from the grass-root level) are:

- Information Society basics
- Online knowledge – motivating the population
- Internet as a tool for communication
- eGovernance
- eBanking
- Practice and field-work

There are certain criteria for the eHungary points that have to be maintained in order to receive the government support: all eHu Points have to be open at least 24 hours/week and during 12 of these hours the population has to have access to eCounsellor services. Half of these 24 hours have to be outside regular working hours (in evenings and weekends), so that working citizens have a chance to profit from these services.

With these opening hours, taking into consideration the percentage of the population, the eCounsellors will be able to offer basic digital literacy training to thirty people per month on the average. This means 500 people trained per eHungary Point per year - which in four years will lead to 2,000,000 digitally literate citizens.

These trainings offer people only the most basic knowledge of computer and Internet usage – teaching them how to use the mouse, how to browse for information on the Internet, how to use essential programs such as Microsoft Word and Excel, etc. However, this knowledge will be sufficient to successfully fight the lack of basic knowledge, which is the biggest reason why people shy away from the digital world. After this phase they will be welcome to venture further into digital knowledge with the help of their eCounsellors.

6 Quality-ensured services

The third element of the program is offering quality-ensured eServices country-wide coordinated by the eHungary Center. The main goal of this third elemental tool is to inspire trust in the potential users by guaranteeing the same trained and helpful eCounsellors, the same reliable infrastructure and trustable opening hours in all eHungary Points.

The eHungary Centre operates in Budapest under the Ministry of Economy and Transport. There are seven permanent experts and several subcontractors at work in the centre, which operates with an annual budget of 1 million EUR.

The eHungary Centre tasks are:

- Project coordination – organisational issues, legal, professional counselling for eCounsellors
- Continuous networking with the eHungary points, keeping the network alive, informing them about everything
- The coordination of the eCounsellor Network – training and guidance
- Advertising and promotion
- Round-the clock help desk for citizens and customer service for the Counsellors
- Quality control and branding

Figure 3. *eHungary Portal*

7 Monitoring

In order to be able to respond to the different needs of the society, the population, the eCounsellors and the eHungary Points, a comprehensive monitoring system has been developed. This consists of IT and human infrastructure monitoring, allowing the eHungary Centre to supervise whether the prescribed conditions are met. Therefore, the centre can be certain that all eHungary Points have the necessary infrastructure, are open in the number of hours prescribed, and that the eCounsellors are doing their job actively.

8 2007 achievements

1. Agreement between different ministries were achieved in 2007. This is a horizontal, inter-ministerial program and an inter-ministerial board has been set up to provide professional guidance for the development and teaching of eGovernment services.

2. The 1st eHu 2.0. tendering was completed. There were 1,453 proposals and from these 1,200 have become supported eHungary Points. The tendering process is continuous; only the points which adhere to the eHungary Program requirements receive continuous funding over the years.

3. The eHungary Centre, the coordinating institute, has been functioning since the beginning of March 2007.

4. The development of an active network has been initiated:

   – The monitoring system for quality-insurance is ready and is being tested in the framework of the pilot operation of the Program,

   – The eHungary Portal is available at: www.emagyarorszag.hu,

   – The eHungary Centre is offering customer service, consultation services and marketing assistance.

5. The eCounsellor training within the frame of the eHungary Program 2.0 has already started.

9 Financing

For the first stage of the program, which lasted from the beginning of 2004 until December 31 2006, the Hungarian Government offered 11.5 million EUR. In 2007 the new phase of the project, the eHungary Program 2.0, received support only for the eCounsellor service – with a budget of 2,000,000 EUR. Between 2008 and 2009 the eCounsellor service will further receive 6,000,000 EUR.

The eCounsellors are employees of the institute that accommodates the eHungary Point, such as libraries, telecentres, etc. These institutions are mostly (80%) ran by local municipalities, while the rest of the Points belong to various civil organisations. The eHungary Program supports each eHungary Point through a centralised system, and the funding goes from the Government to the owners of the Points. The owners in their turn are free to decide on what to spend the money, based on the needs of their community. However, they have only three choices: they can invest in infrastructure development/improvement, they can cover maintenance costs, or they can pay the eCounsellors. (Note: no eHungary Point without eCounsellor services will be supported).

10 SWOT Analysis

The threats to the success of the program are relatively low due to the fact that it is a project based on national and international best practices, tuned to the needs and weaknesses of the targeted communities. However, the program would be unable to succeed without the material support from the Government.

Strengths	Weaknesses
– Existing infrastructure from the previous phase (eHungary 1.0); – Inter-ministerial agreement for the support of the Program; – Well-working eHungary Point network;	– The population's distrust towards eServices and reluctance to accept innovation. This could result in low interest in the services offered by the eHungary Program; – The legal framework has not yet been finalised and

– Successful eCounsellor training; – Effective operation of the eHungary Centre.	will still take a while due to the slow pace related to bureaucracy. This could result in difficulties for the program.
Opportunities	**Threats**
– Growing G2G, G2B, G2C, G2E, B2B, B2C service models; – ICT-based services are spreading in the administration, giving people an additional incentive to learn their usage; – Spreading ICT-based services lead to a growth of trust in the population; – Growing eContent and eServices offer alternative possibilities for disabled citizens; – Involving the civil and the business sectors might contribute to the future sustainability of the program.	– In the 2009-2010 annual government budget the long-term projects might be side-tracked; – Social distrust towards eServices; – Due to underdeveloped ICT infrastructure the Internet usage is spreading very slowly; – eGovernment service usage is very low; – Due to the digital divide a large segment of the population is isolated from the eWorld.

11 Conclusion

The eHungary 2.0 Program can become a reality with the help of the work of well-trained and committed eCounsellors. However, the Counsellors will only be able to fulfill their mission with the support of the population. A serious impact can only be made if all the players of the game (Government, the eHungary points, eCounsellors and population) invest time, energy and resources into making digital literacy a reality in Hungary.

References

Hungarian Central Statistical Office: www.ksh.hu

Hungarian Information Society Strategy: http://www.itktb.hu/engine.aspx?page=MITSkezdo_hun

World Internet Project (WIP): http://www.worldinternetproject.net/

EUROSTAT - http://epp.eurostat.ec.europa.eu

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Methodologies to identify best practice in barrier-free web design

Results from Germany's BIENE-Wettbewerb with a special focus on accessible e-services amongst the winners of the competition

The BIENE-Wettbewerb, the best-known accessibility contest in Germany, started in 2003, the European Year of People with Disabilities. Organised by the German social organisation Aktion Mensch (German Association for the Care of the Disabled) and the Stiftung Digitale Chancen (Digital Opportunities Foundation), the BIENE-Award is meant to honour the best barrier-free web sites in German language and to present them as excellent best practice examples. BIENE[a] emphasizes the objectives of promoting communication, joint action and productive cooperation. Therefore, a unique study was carried out by the promoters of the contest during 2007 in order to ensure that the evaluation procedure measures the accessibility of Web 2.0 tools as well as classical websites. From the study it became very clear that people with disabilities may especially benefit from the opportunities Web 2.0 provides - nevertheless it has to be ensured that quality standards are matched.

The BIENE competition aims at improving the quality of websites in general and thus enable people with disabilities to take part in the information society. Only those websites that match the criteria for accessibility and also fit the expectations of the users as well as of the initiators of the competition will be awarded a prize. This article refers to the methodological approach underlying the evaluation of contributions to the competition and shows how best practice examples of accessible web sites can be identified with a special focus on the identification of accessible e-services.

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Keywords

eInclusion, disabilities, accessibility, Web 2.0, awards

> "User-generated content influences the way services are perceived as well as the design of the services. The more users are involved in the producing and publishing of content, the more the Internet and the e-services available might become adjusted to the users' needs."

[a] In this context, the acronym BIENE (in German originally meaning the insect "bee") stands for "Barrierefreies Internet eröffnet neue Einsichten" ("barrier-free Internet reveals new insights").

1 The BIENE awards for German language websites

The BIENE-Wettbewerb[1] is a contest with the aim to honour accessible websites as best practice. The contest started in 2003, and this year it will be run for the fifth time. Until now about 1,000 websites from public and private organisations and also from GPOs have applied for getting one of the highly treasured awards. The main structure and the approach of the contest have been proven of value and so, over the years, there have been made little changes in the operational structure. This article has two aims:

Firstly, it describes the methodology of the kernel of the contest consisting of three steps, which have been changed only marginally over the last few years.

Secondly, this article shows the new development that started last year with a "(research semester) sabbatical". In 2007, the BIENE contest was postponed until the catalogue of evaluation criteria was adjusted to recent developments of the World Wide Web. Instead of the contest, a study was carried out in 2007. The main issue of the study – and the initiators – was the current evolution towards Web 2.0 and the question how people with disabilities can benefit from these new ways of communication. The results of the research semester will have a strong impact on the course of the BIENE-Wettbewerb.

1.1 The team of implementation

The initiators of the competition, Aktion Mensch (German Association for the Care of the Disabled) and Stiftung Digitale Chancen (Digital Opportunities Foundation) pursued three aims of equivalent importance:

1. Increase the number of barrier-free Internet sites and accordingly increase usability and usefulness of the World Wide Web for people with disabilities.

2. Create public consciousness for the topic of barrier-free communication and information technology.

3. Exemplify a collection of best-practice examples.

Since its founding as Aktion Sorgenkind in the year 1964, Aktion Mensch has been one of the most successful social welfare organisations in Germany. It is oriented to the idea of humanitarian rights and solidarity, striving for equal opportunities in society and campaigning for every person's right to self-determination and to be an accepted member of society.

These goals are pursued with two essential points of emphasis: firstly, the promotion of projects and initiatives for disabled rights, disability aid and self-help, as well as child and youth welfare projects. Secondly, through comprehensive clarification measures, which are intended to create an open and positive social climate by providing the interested public with an insight into the significance of social work.

The Stiftung Digitale Chancen (Digital Opportunities Foundation, www.digitale-chancen.de) was founded in January 2002 by the company AOL Germany and the University of Bremen as a follow-up to the project network "Digital Opportunities". The goal of the Stiftung Digitale Chancen is to make people interested in the Internet and to support them with their steps into the digital world. The Federal Ministry of Economics and Technology and the Federal Ministry of Family Affairs, Senior Citizens, Women and Youth have taken on the patronage. The foundation has set up an information system to provide instruments for overcoming the Digital Divide in Germany, in accordance with the demands of the "Barrierefreie Informationstechnik Verordnung - BITV" (Barrier-free Information Technology Regulation) as part of the general Federal Equal Opportunities Legislation in Germany ([5],[16]).

[1] Announcement and further information are available on the website www.biene-award.de.

The Institut für Informationsmanagement Bremen (Institute for Information Management Bremen GmbH, ifib, www.ifib.de), partnered with the University of Bremen, offers well-founded interdisciplinary expertise in the sectors of education (Educational Technologies) and public administration (eGovernment). In the field of eGovernment a focus has been set on accessibility several years ago, and the team is well known in Germany. Within the BIENE-Wettbewerb, the ifib works on behalf of Aktion Mensch and Stiftung Digitale Chancen.

1.2 Professional advisory board, jury, and representatives of end-users

A professional advisory board supervises the selection of competitive comparison criteria for submitted contest contributions and the corresponding evaluation process. The board consists of about 25 representatives of organisations of handicapped people in Germany and other experts in the field of web accessibility. The board agrees upon a tentative rank ordered proposal list for award assignments. For the irrevocable final selection of prize winners, this list is presented to a jury consisting of important representatives from private and public media, education, media design agencies and commercial Internet providers.

1.3 Competition categories

As contents, size, target user groups and design requirements vary in different application domains, and the evaluation procedure varies accordingly, the BIENE-Wettbewerb for best barrier-free web sites in the German language was announced for different categories of web services, ranging from eCommerce, eGovernment (federal, state and community services), e-service, culture and society, science and research, to media (print and broadcast media). Over the years it turned out that these content-based categories were no longer adequate to differentiate between the various types of web applications. Therefore, from the year 2006 on the categories for the BIENE-Wettbewerb are defined as follows:

- Information and communication websites
- Research and service websites
- Shopping and transaction websites

Special prizes have been dedicated to exceptional and innovative solutions addressing the needs of single user groups, e.g., web sites for children, web sites for deaf people who use sign language and web sites for people with learning disabilities.

Since 2005 the initiators of the competition have been calling for an additional junior award for accessible websites created by students or web designers in apprenticeship.

1.4 Participation prerequisites

Contributions to the competition have to be in the German language and publicly available on the World Wide Web at the time of submission. It is requested that contest submissions, besides pure information transfer, provide some support for elementary interaction with targeted end-users, e.g., e-mail inquiries for requesting additional content-related services.

Applicants to the contest have to fill in an application form and additionally give a short description of the basic concepts and instruments underlying the development of their barrier-free website.

Since 2006 users themselves are invited to propose their preferred accessible websites for the evaluation and awarding procedure.

2 Evaluation procedure

The evaluation process was initially developed by the Institut für Informationsmanagement Bremen. The process has been continuously adjusted to new Internet technologies and new ways of interaction (Web 2.0) during the previous years.

During the whole process the above-mentioned professional advisory board accompanies the ifib team. This very constructive co-operation helps to overcome lots of problems and questions that come up during the contests. Especially because representatives of concerned end-user groups have been requested to actively participate in the advisory board, the acceptance of the BIENE competition in the public has been growing notably year by year.

For the first four competitions about 1,000 contributions have been submitted.

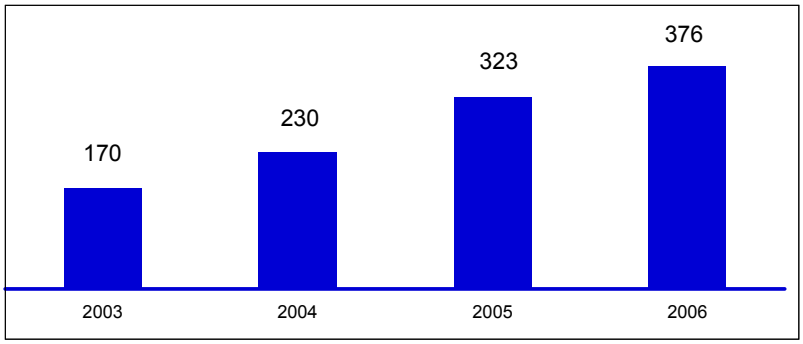

Figure 1. Contributions to the BIENE competition since 2003

According to the overall evaluation procedure, first of all the websites are reviewed regarding the ethical appropriateness of their content. Thus websites with content that does not apply to general ethical values, i. e. racism, defamation or violation of human dignity are sorted out from the contest. In a next step contributions are evaluated by a so-called exclusion-test: Websites failing to fulfil the basic requirements of accessibility are sorted out from the competition. Subsequently the remaining contributions which pass with good results have to undergo a so-called fine-test. Usually these are less than half of all websites taking part in the competition. Out of this fine-test up to 30 of the best contributions are identified under additional consideration of their different complexity, and qualified for final practice tests with concerned end-users with different disabilities.

Out of these practice tests, the advisory board nominates the short-list candidates to the jury. It is their task to check the candidates on the quality of content. They also have an eye on attractive web design. Finally, the jury gives the BIENE award to up to three candidates in each category. These go for gold, silver and bronze, but the jury doesn't have to decide for a winner in each category. Their decision depends on the quality, and not always all prizes have been given away.

2.1 Legal frameworks

The evaluation of award contributions takes into account the regulatory demands of the "Barrierefreie Informationstechnik Verordnung - BITV" (Barrier-free Information Technology regulation). As part of the Federal Equal Opportunities Legislation in Germany this ordinance was issued in 2002. It is based on section 11(1) sentence 2 of the German Federal Act on Equal Opportunities for Disabled Persons of April 27 2002. ([5], [14], [16]).

The BITV stipulates technical standards for accessible information technologies based on WCAG 1.0 (Web Content Accessibility Guideline 1.0) ([17]). It refers exclusively to public Internet offers of the

administration and other agencies of the federal authorities and state administrations as far as they execute federal law.

The objective of accessible information and communication technology has been laid down by law in many European countries as a consequence of the decision of the European Commission dated 25 September 2001. From late in 2001 on, all member states and the European institutions take the WCAG 1.0 into consideration for all public tenders.

The BITV is now in a review process and a revised version is announced for the end of 2008.

2.2 Ergonomic framework

During the first three years of the contest, the five principles of accessibility from WCAG 2.0 Working Draft (Web Content Accessibility Guidelines) served as a basic structure within the contest ([17]). These principles were verified by the results of a survey amongst 180 associations out of the community of the disabled in Germany: They were asked to estimate the importance of respective ergonomic principles for the special needs of the reference groups of disabled people represented by each of them on a scale of 1 to 5. Based on this survey, it should be determined whether the criteria of the five general ergonomic principles should be weighted differently. However, the result of the inquiry revealed no significant variance but a more or less even distribution. Thus five equally important basic ergonomic principles for improved accessibility served as a conceptual framework for the overall evaluation procedure:

Perceptibility

All website information and functions must be presented in such a way that they can be perceived by each user regardless of certain impairments or handicaps, e.g., pictures for blind and sounds for hearing-impaired end-users have to be supplemented by circumscribing texts (Alt-Text). Individually adjustable font sizes and colour, as well as contrast, facilitate perception for visually impaired persons.

Operability

All elements that are required to access website contents, e.g. buttons, menu bars and input fields must be controllable by each user. End-users with certain motor impairments may have problems to adequately operate and position a computer mouse. They might be dependent on navigating websites completely by (special) keyboards. Moreover, websites should allow for individually different utilization speeds without time restrictions that may invoke automatic discontinuance of usage processes.

Orientation

To navigate efficiently within large websites, end users should be able to orient themselves quickly and simply. A prerequisite for that is a strict separation of content and function (e.g., navigation tools), as well as a meaningful and consistent user interface design which satisfies users' expectations derived from previous experiences.

Understandability

Textual information and textual descriptions should be short and simple. This is not only of advantage for end-users with a learning disability, but also for deaf people who frequently have to communicate textual information by sign language. Intelligible graphic elements can add meaning to written information.

Robustness

Quite often disabled end-users use alternative browsers and special needs access technologies, e.g., enlargement software, screen reader software or speech recognition. In this respect, websites have to be compatible with current and future special needs technologies and alternative browsers.

These principles were very valuable to support the main issues of accessibility and to structure the checkpoints. Nevertheless, after the first competition in 2003 it was decided to simplify the structure of the contest by adding two more principles from the year 2004 on: The relevance of the content and design were important issues within the competition. By lifting them up onto the status of a principle their weight is made more visible.

The additional principles are defined as follows:

Relevance of the content and inclusion

The content of websites should be appealing and usable to all people irrespective of the disability. This is the aim to the Digital Inclusion. This means that, if websites focus special target-groups, they nevertheless should address all people who are interested in the topic of the website. The aspect of inclusion also means that websites that offer an additional only-text-version as accessible alternative are not worth of the award. This doesn't mean websites with alternative services or content-pools that can be configured individually.

Design

Attractive design is a characteristic of accessibility as it supports users in reaching their objectives by consistency and transparency. This is the reason why the contest considers aspects of aesthetics and software-ergonomics.

2.3 Checkpoint operationalisation

The above mentioned principles need to be operationalised so that the single checkpoints can be easily tested in a well-defined way. On an upper layer the principles are split in about 80 criteria. Each of these criteria is operationalised into one up to 14 checkpoints.

The following table shows a pullout of the inspection catalogue.

Criterion: Every part of the site can also be reached in a logical order by exclusively using the keyboard. – Checkpoint 1: Check in the browser if all functions can be reached with the tab. – Checkpoint 2: Assess, if there is a logical tab order through links, form controls, and objects.
Criterion: Several navigation mechanisms are available. – Checkpoint 1: Check in the browser, if navigation bars are provided – Checkpoint 2: Check in the browser, if a sitemap is provided. (This step is not applicable with low complexity).

Table 1. Examples from the lists of criteria with testing steps

2.3.1 Subjective evaluation

Although trying hard to operationalise the checkpoints for objective testing, the results of the fine-tests show that the competition contributions are of such a wide range and variety that in many cases the evaluation experts have to decide subjectively. This is necessary for questions concerning the adequacy of a function or the means of realization (e.g. should there be a sitemap or a glossary on the page or not).

Within the revisions of the last years many of these questions have been erased from the checkpoint-catalogue, especially those with a stronger usability-background. Other checkpoints have been reduced in their weight, so that their influence has become less strong.

But above all there is a strong focus on these checkpoints during the evaluation training so that the team gets a collective idea of the range of validation.

2.3.2 Weighing

When the evaluation process was originally defined, the ifib methodology development team explicitly did not weigh differently certain testing areas or criteria. This decision was the result of the above mentioned survey amongst 180 associations out of the community of the disabled in Germany and organisations of handicapped people. As already mentioned, the results of this survey revealed that the planned testing areas of perceptibility, operability, orientation, understandability and robustness had almost the same relevance.

A further reason lies in the concept of accessibility itself: Each single barrier may prevent a handicapped person from reaching his or her individual goal on a website with equal relevance.

Nevertheless, certain test results and the need of ranking the contributions showed that one cannot abandon weighing. For example, it seemed difficult to compare a checkpoint concerning the accessibility of navigation mechanisms to a checkpoint concerning the accessibility of mechanisms to data protection.

As a consequence a weighing system was introduced in the BIENE contest in 2004 and it is continually in use with only slight changes since then: The weight of the single checkpoints was primarily developed on the basis of the priorities of the adequate checkpoints of the BITV, resp. WCAG 1.0.

So with the help of this weighing system the best contributions are identified. But as the BIENE-Wettbewerb not only wants to identify the best of all submissions but also to find best practices in general, these best of all contributions are checked again on those checkpoints where they did not get the full score. This is done without regard of the initial weight of these checkpoints. In each case, the meaning of this defect is balanced within this single contribution. So, it is possible that one of two websites with the same number of scores falls back dramatically because within this website the checkpoint with a low weight affects the accessibility for at least one target group severely.

2.3.3 Exclusion criteria

In the first years the exclusion procedure was based on an overall of approx. 15 checkpoints (the checkpoints themselves and their number change from contest to contest.) They had to serve as a first rough filter to identify contributions with serious shortcomings. As this exclusion procedure was very strict, nearly none of the contributions fulfilled all the criteria of the exclusion-test. Thus the evaluation team decided in agreement with the advisory board to accept contributions for the fine-test in spite of minor defects.

Already in 2006 and now again in 2008 the exclusion-test is designed in a way that it is able to draw the line more easily: This is mainly reached by a strong reduction of checkpoints with the concentration on the basic requirements of accessibility.

2.3.4 Fine test rank-order criteria

As a result of the exclusion test, about 120 to 140 competition contributions are identified for the fine testing. The fine-test consists of about 80 criteria with more than 150 checkpoints.

While the criteria for the exclusion test are based on the common accessibility guidelines, the fine-test criteria cover a broader spectrum ([14], [21]). They have additionally been derived from international standards concerning software ergonomics (DIN/ EN/ ISO 9241-10/11 ([4]) and ISO TS 16071 ([7])), from guidelines dealing with data protection, eGovernment ([18]) and eCommerce. As the criteria about

understandability and easy language are defined only roughly in the common accessibility guidelines, the guidelines for dyslexia and for use of easy language were added (“Plain German”) ([19], [20]).

In the first years of the contests, aspects of usability had a fairly strong influence. In accordance with the professional advisory board this weight has been slightly reduced.

2.4 Evaluation methodologies

Methodologically the overall evaluation procedure combines different forms of expert validation. It comprises classical guideline oriented approaches, based on the exclusion and rank order criteria described above ([2], [3], [9], [10]). The validation is accomplished partly with the help of software tools for validation, e.g. of correct HTML-code of the website sources or sufficient contrasts within the design, and repair tools are used for accessibility checking. As part of the expert reviews it has also to be checked whether competitive website contributions are compatible with widely used assistive technologies ([1], [13], [15]).

To guarantee reliability of the results, each test is done twice by different experts ([2], [3]).

The websites that have past the expert reviews with good results are checked by people with different disabilities.

2.4.1 Guideline-oriented expert evaluation

The exclusion-test serves as a first rough filter to identify contributions with serious shortcomings concerning accessibility. It consists of a couple of checkpoints on which all websites are tested by experts.

In the exclusion test, only two pages, which have been selected as being representative for the submitted website, are validated by experts. Usually this is the homepage and a page that offers complex interaction functionality, e.g. a form or a questionnaire.

Those contributions that have excellent results within the exclusion test undergo the fine testing:

For each for these websites two different task-oriented scenarios are defined to make sufficiently sure that the broadest possible view of the whole site is considered. During scenario-based task accomplishment, all of the 150 checkpoints that are applicable, are checked and re-checked by a second expert. A single test-run takes 4 to 6 hours depending on the complexity of the site. This means that a complete test for a single site takes up to 12 hours.

2.4.2 Test environment and software tools for accessibility checking

The basic test environment for both the exclusion test and the fine test consists of PCs with the operating system and the standard-browser most common within each year of contest.

Carrying out the exclusion-test requires some technical preconditions; amongst them the application of software supported validation and repair tools for accessibility checking. In this context, the self-developed BIENE tool is used among other to, for example, confirm proper use of ALT-text, frame and table-tags for improved perceptibility. Additionally conventional public domain accessibility checkers like Vischeck and Adobe plug-in were applied in 2003 and 2004. Now, the AIS-Toolbar is used as a check-tool within the contest.

2.4.3 Assistive technologies compatibility check

With several checkpoints the robustness of a website is tested, i.e. it has to be checked whether websites are compatible with current and future special needs technologies (e.g. enlargement software,

screen reader software or speech recognition) and alternative special needs browsers. So the robustness is tested by defining that a certain checkpoint has to be analysed with a special needs technology which is used as a testing tool.

Thus the basic test environment in the first year of contest was extended by auxiliary special needs technology including Webformator 1.31, IBM HPR and JAWS 4.5 and a variety of different browsers (Opera, Lynx, Firefox). The Webformator which is an assistive tool that is widely spread in Germany is for example used to examine whether sites which contain frames or tables can be converted into a linearised read sequence representing a logically meaningful arrangement of frame – or table based contents, i.e. to what degree logical linear read sequences support perceptibility. Now, in 2008, only the Webformator as assistive tool is used within the fine-test, as we have come to the conclusion that the software tools have been improved. Very often they also behave very similar so that they do not have to be checked individually.

2.4.4 Participative end user evaluation

About 30 contributions with the best results in the fine tests go into participative end user evaluation. The Internet competence of involved end users varies from beginners to experts every year. The tests are done with about 25 persons who have different kinds of disabilities; several suffer more than one impairment. The tests are carried out at the working places or homes of the test persons and take about 3 hours. They are always guided by two persons.

The user tests rely on scenario based task accomplishment. Users are asked to first fulfil a task described step-by-step, and secondly a more global task not described in detail.

One of the test guides records statements and impressions during task completion and documents whether the tasks were successfully concluded or discontinued. The second test guide may ask questions concerning the steps the user chooses and gives answers to the user, if she or he needs information.

Figure 2. Test person working with Braille.

One evident result of the practice tests is that accessibility cannot be reduced to technical issues. This is just the first step: All test persons regardless of their disabilities strand on sites with an inadequate structure or with too much complexity. Furthermore it becomes very obvious that also the degree of Internet competence is a crucial aspect of whether a task can be completed or not.

Figure 3. Test person using her feed for navigation.

3 Research semester - Study on Web 2.0

Because of the fast changing technologies and ways of operating with the Internet, especially with regard to the new options, that are usually summarised under the term Web 2.0, a basic study was carried out in 2007. The aim of this study was to find out the benefits people with handicaps gain through the new features and the new ways of communication. This is the first study of this kind ever.

The study consists of three parts: In a first step, experts were inquired regarding their knowledge of user behaviour and communication habits of people with disabilities. In a second step, interviews with groups of people with disabilities were carried out. The groups were asked about the most often visited websites, about their online habits and about what stimulates them to access a website even if it is not completely accessible to them.

Based on the results of the first two steps, an accessible online questionnaire was developed addressing end users with disabilities. The questionnaire was open to the public for five weeks in January/February 2008. While the first two steps were carried out as qualitative research with 10 experts inquired and 57 people taking part in the group interviews, the third step was done as quantitative research, and about 600 respondents answered the questionnaire.

Parallel to these activities, Internet websites with typical Web-2.0 features such as YouTube, Wikipedia or Flickr were reviewed and evaluated as regards their accessibility and crucial points of access for people with disabilities This was done with strong cooperation of software developers, web-designers and accessibility-experts.

The aim of the combination of qualitative studies and the technical reviews is that the interviews with disabled drew the attention to those applications which are used by people with disabilities – or which they would like to use, and are not able to due to inaccessibility. Thus the barriers were detected and also the strategies used by the disabled to overcome them. Once the barriers were identified, the catalogue of criteria for the BIENE-Wettbewerb was developed further to ensure that the evaluation procedure measures the accessibility of Web 2.0 appliances as well as classical websites.

4 How to identify best practice in e-services

Since the beginning of the BIENE-Wettbewerb it was the intention of the initiators to identify best practice in the provision of accessible e-services. Notwithstanding the broad variety of websites that were sent in to the evaluation process, the focus was on websites providing for interaction between the service provider and the end user in order to facilitate processes of communication and interaction.

Several websites of this type have been awarded the BIENE prize in the last four competitions.

4.1 Awarded e-services websites (selection)

Since the year 2003 several websites that can be counted as e-services have been awarded the prize in the competition. The following table shows some examples:

Year	Awarded e-service website	Description
2003	Versorgungsamt Heidelberg	This public website offers information concerning social security. In 2003 it was a best practice especially with view on the navigation concept and the overall accuracy.
	Bremische Bürgerschaft	The website of the state government of Bremen offered not only information but also a database driven accessible search on public documents of the local government.
	Polizei NRW	The website of the police in North Rhine-Westphalia provided information in German sign language videos in high quality.
2004	Postbank Onlinebanking	The online-banking service of the German Postbank was one of the first banks in Germany that offered transaction services in a highly accessible manner.
	Integrationsfachdienst Hamburg	The public website that focuses on people with disabilities offered in 2004 best practices for solutions of accessible graphic content.
	Existenzgründer-Portal des Bundesministeriums für Wirtschaft und Arbeit	The website, driven by the German ministry of economy and labour offered an innovative, attractive and at the same time accessible service that could be used from founders of a new business.
2005	Landesportal Baden-Württemberg	The website of the state government of Baden-Württemberg provided services and rich information for residents and tourists and convinced especially by the high transparency and the navigation concept.
	Nahverkehr Paderborn	The website of a local public transportation service offered a time-table information that could be used without difficulties by people with different disabilities.
	Infoportal zu Altersvorsorge und Rente der Regionalträger der Deutschen Rentenversicherung und der Deutschen Rentenversicherung Knappschaft-Bahn-See	The website of a public insurance company convinced with its many services with a high level of interactivity.
2006	help.gv.at	The website of the Austrian government provided eGovernment services for residents and is not only well known as a winner of the BIENE-Award.
	Barmer Ersatzkasse	The website of one of the major german health insurance services offered several highly interactive service.
	Verkehrsverbund Rhein-Ruhr	The website of a regional public transportation service offered as a best practice a time table information for the whole region.

	Straelen am Niederrhein	The website of the city of Straelen in North Rhine Westphalia showed a deep understanding of accessible design.
	Die Gesundheitskarte	The governmental website with information about the new health insurance service card was an information service with a strong focus on design and accessibility.
	Bundesrat	The governmental website of the German Bundesrat offered not only rich information for diverse target groups but also transaction services made with care.

Table 2. Awarded e-service websites since 2003

Now, one and a half year after the last evaluation in the framework of the competition has been carried out, it seems no longer worth to mention the URLs of the awarded websites. All of them have undergone more or less relevant changes, most of them have added a lot of more content as well as functionality. Considering the fact that the Internet is a very fast developing medium, certifying the accessibility of websites seems like the attempt to hit a moving target.

Nevertheless we can assume that websites providing e-services have developed as fast as the rest of the Internet. When in 2003 with Versorgungsamt Heidelberg a website was awarded a prize that was first and foremost providing information about the services of the Versorgungsamt, in 2006 most of the winners in this category were websites that provide interaction between the supplier of the service and the user and which provide transaction procedures like ticketing.

4.2 Interdependencies between legislation and accessible e-services

As described in chapter 2.1, in Germany a legislative framework for accessibility is in force. In addition to the federal law, almost all states have developed their own legislative framework applicable especially to public bodies. The contributions to the competition as a whole show that the more clearly the legal framework is defined in one of the German federal states, the more contributions to the competition featuring a reasonable grade of accessibility were sent in from organisations based in the region in question. The legal framework is not binding for private companies, but provides for procedures of negotiations with organisations of the disabled. Notwithstanding these procedures, one can assume that since 2003 a lot of companies have undertaken reasonable efforts to provide for accessible e-services, as the examples of Deutsche Postbank (award in 2004) and Barmer Health Insurance (award in 2006) show.

4.3 e-services in the era of Web 2.0

With the so-called Web 2.0, Internet has changed to something that might have been the first idea of the World Wide Web, an instrument for collaborative work and bi-directional interaction and communication. This means that with Web 2.0 a new opportunity for more inclusive e-services is coming along.

From the study mentioned before, it became very clear that especially people with disabilities may benefit from the opportunities Web 2.0 provides. User-generated content influences the way services are perceived as well as the design of the services. The more users are involved in the producing and publishing of content, the more the Internet and the e-services available might become adjusted to the users' needs. Nevertheless it has to be ensured that quality standards are matched. The BIENE competition aims at improving the quality of websites in general and thus enable people with disabilities to take part in the information society. Only those websites that match the criteria for accessibility and

also fit the expectations of the users as well as of the initiators of the competition will be awarded a prize.

5 Conclusion

More than 1,000 websites were evaluated regarding their accessibility by the BIENE team within the previous four competitions. From the experiences gained in the evaluation one can see clearly that people with disabilities can benefit extremely from services provided online. These services help them to gain more autonomy as well as a more independent life. Nevertheless, only about 50 websites have been awarded for outstanding results in four competitions, which is only a small number. Therefore, one can assume that the accessible area of the Internet providing benefits for disabled people is still rather small.

Are the efforts for the contest worth to be undertaken? The answer is easily answered. Since the BIENE-Wettbewerb started in the year 2003 the topic of accessibility of websites has gained a maximum of attention it otherwise would not have had. Furthermore, in public procurement it has become quite usual to demand accessibility for websites according to the BIENE criteria.

First of all it is the mission of the BIENE to disseminate its message and help all users benefit from accessibility. Therefore, the success of the contest can not only be counted on the growth of the number of accessible websites but also on the growth of awareness about accessibility and the growth of knowledge about how to achieve it.

References

[1] Clark, J.: Building accessible websites. New Riders, Indianapolis (2003)

[2] Dzida, W.: Qualitätssicherung durch software-ergonomische Normen. In: Eberleh, Oberquelle, Oppermann (ed.): Einführung in die Software-Ergonomie. deGryuter, Berlin (1994) 373-406

[3] Dzida, W. et. al.: Gebrauchstauglichkeit von Software, ErgoNorm: Ein Verfahren zur Konformitätsprüfung von Software auf der Grundlage von DIN EN ISO 9241 Teile 10 und 11; Schriftenreihe der Bundesanstalt für Arbeitsschutz und Arbeitsmedizin, (2001)

[4] DIN EN ISO 9241 Ergonomische Anforderungen für Bürotätigkeiten mit Bildschirmgeräten, Teil 10: Grundsätze der Dialoggestaltung, Teil 12: Informationsdarstellung

[5] Federal Law Gazette I p. 1467

[6] Hellbusch, J.et.al: Barrierefreies Webdesign, dpunkt.verlag, (2005)

[7] ISO/TS 16071: Ergonomics of human-system interaction – Guidance on accessibility for human-computer interfaces

[8] Nielsen, J.: Designing Web Usability: The practice of simplicity. Indianapolis (IN): New Riders Publishing (2000)

[9] Oppermann, R: Individualisierung von Benutzungsschnittstellen. In: Eberleh, Oberquelle, Oppermann (ed.): Einführung in die Software-Ergonomie. deGryuter, Berlin (1994) 235-269

[10] Oppermann, R.; Reiterer, H.: Software-ergonomische Evaluation. In: Eberleh, Oberquelle, Oppermann (ed.): Einführung in die Software-Ergonomie. deGryuter, Berlin, (1994) 335-371

[11] Radtke, A, Charlier, M.: Barrierefreies Webdesign: Addison Verlag, (2006)

[12] Stephanidis, C.: User Interfaces for All: Concepts, Methods, and Tools. Lawrence Erlbaum Associates; Mahwah, New Jersey (2001)

[13] Thatcher J. et.al.: Accessible Web Sites, glasshaus (2002)

Internet-Links:

[14] Einfach für alle: English version at: www.einfach-fuer-alle.de/artikel/bitv_english/ (last seen 24.4.2008)

[15] Informationen zum barrierefreien Webdesign. Eine Initiative der Aktion Mensch e.V.: http://www.einfach-fuer-alle.de (last seen 24.4.2008)

[16] Gesetz zur Gleichstellung behinderter Menschen (BGG): http://www.behindertenbeauftragter.de/index.php5?nid=20 (last seen 24.4.2008)

[17] Web Accessibility Initiative (WAI) (2003) (W3C): http://www.w3.org/WAI (last seen 24.4.2008)

[18] BSI, Bundesamt für Sicherheit in der Informationstechnologie: e-Government-Handbuch http://www.bsi.de/fachthem/egov/3.htm (last seen 24.4.2008)

[19] NCAM SALT (Specifications for Accessible Learning Technologies) Guideline: http://ncam.wgbh.org/salt/guidelines/ (last seen 24.4.2008)

[20] TechDis: Dyslexic Perspective on e-Content Accessibility, Peter Rainger 20/01/03 http://www.techdis.ac.uk/seven/papers (last seen 24.4.2008)

[21] National Audit Office UK: Progress in making e-services accessible to all, http://www.nao.gov.uk/pn/02-03/0203428.htm (last seen 24.4.2008)

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The 'relative utility' approach for stimulating ICT acceptance: profiling the non-user

Business strategies and policies that were successful in increasing internet penetration in the early days may no longer be appropriate. This is most probably in countries where a majority of people is already connected to the internet. As more people are online, it becomes more likely that the remaining fraction of non-adopters is either hard to convince, under-skilled or simply lacking the financial resources to afford a connection.

In view of this problem, this paper proposes a policy approach to increase personal computer and internet acceptance in collaboration with the industry. The measures developed within this approach are based on strategies of segmentation and differentiation. This entails that product offerings are specifically targeted towards different socio-demographic groups in the population. In addition, our approach does not only concentrate on removing barriers, as most eInclusion policies do, but also at increasing the value of ICT for end-users.

This approach is based on a project that applied both qualitative and quantitative research methods to investigate the relation between the socio-demographic and socio-economic characteristics of non-users, and on the other hand, their profile in terms of access levels, ICT skills and attitudes towards ICT and their needs and expectations (if any) about ICT. In this paper we show, firstly, that members of homogeneous socio-demographic and socio-economic groups indeed share similar characteristics in terms of access, skills and attitudes and, secondly, that these groups can be effectively reached by policy makers and businesses with specific product offerings.

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> "ICT inequalities are not likely to diminish or disappear of their own accord. In societies that have already reached high levels of internet penetration, this may ask for specific measures that differ from those of the early days of the internet."

1 Introduction

eInclusion is one of the dimensions of overall inclusion and cohesion policies. In the meaning of the European Commission, eInclusion contains a twofold approach (eInclusion@EU, 2004: 3): Firstly, it focuses on preventing exclusion. This means that policies should prevent that disadvantaged people are left behind in the development of the information society. Secondly, eInclusion refers to exploiting new technological opportunities for a better inclusion of socially disadvantaged people or groups, or less favoured areas. In short, eInclusion refers to policies that enhance participation in society by means of ICT (Kaplan, 2005).

In view of the pervasiveness of ICT in society and our increasing dependence on ICT in everyday life, the capability to use ICT at home becomes a more important condition for social participation. The goal of any 'information society' policy should therefore be to achieve full internet access for all. This may require a continuous effort on behalf of policy makers. ICT inequalities are not likely to diminish or disappear of their own accord. In societies that have already reached high levels of internet penetration, this may ask for specific measures that differ from those of the early days of the internet. The fraction of remaining non-adopters may be structurally lacking financial resources to afford the internet, they may be poorly educated or under-skilled or they may be hard to convince to use the internet because they fear the technology or simply because they resent using it. In this paper we propose the findings of a research project that aimed at developing policy measures that are suitable for this context.

Our approach is characterized by two main features. First, unlike many eInclusion policies, our approach does not only aim at removing barriers but equally, or alternatively, at increasing the value of ICT for end-users. Second, the measures developed within this approach are specifically targeted towards different segments of the population, the assumption being that by focusing on specific groups (with low adoption rates) the proposed measures will be more effective and less expensive than generic policy measures.

The approach was born out of a confrontation of theory with political practice. This has affected the way in which we set up and conducted our research. In the first main section of this article we outline these practical considerations. In the second main section we describe our theoretical assumptions and their methodological elaboration. The third main section summarizes the main findings of our survey and evaluates their significance.

2 Field experience

The Federal Agency for Information and Communication Technology (Fedict) in Belgium is currently studying policy options based on our research. One of the possibilities being considered is the provision through commercial outlets of cheap customizable starter packages to people that are not yet connected to the internet at home. The offer would consist of a PC and internet connection, a free training session plus free access to a personalized information page. This campaign would need to be coordinated with telecommunications service providers, equipment manufacturers as well as professional and social organizations representative of certain categories of users.

The basic package would be offered to the general public through ordinary commercial outlets on a non-discriminatory basis. But most importantly, in addition, customized packages would be offered to specific user groups so as to accommodate the needs of specific segments of the population. The composition of these packages would be negotiated between the professional organizations, the industry and government. It is expected that the measures developed within our 'relative utility' approach will be more effective and relatively less expensive than the previous action on which it is partially inspired, the 'Internet for All' project of the Belgian government in 2006.

The 'Internet for All' campaign consisted of providing one affordable package deal to potential buyers, consisting of a PC, an internet connection plus a training session. The main 'political' difficulty was to

convince the industry (PC manufacturers, ISPs and retailers) to participate. Eventually, three consortia consisting of well-known PC manufacturers and ISPs offered a package. The main resistance was from the organization of small retailers, who feared the low profit margins would cause an unacceptable loss of income. After evaluation, the Internet for All project proved to be advantageous for the retailers as well as all other parties involved. It was calculated that the project contributed to 16% of the increase of new internet connections over a period of one year. The slipstream of the project was estimated to be 50%. The slipstream is buyers that were initially interested by the package but eventually opted for another (more expensive) commercial offering. Sum total is that the project contributed to almost a quarter of the increase of internet connections between March 2006 and March 2007.

A critical evaluation of the 'Internet for All' campaign revealed different elements, two of which inspired our research. The first was merely the confirmation of what could be expected. Not all of the groups in society were equally well served by the campaign. As noted in the previous paragraph, some preferred to buy a more performing and more expensive equipment, whilst for others the packages were too expensive, either because the up-front entry cost was too high, or because of the recurrent costs for an internet connection. The second source of inspiration was an incidental call of a representative of a professional organisation for physical therapists that proposed to target the campaign towards the members of his organisation. These two, apparently banal observations, triggered a reflection that inspired the new policy approach and adjoining research.

3 Research outline

3.1. Inequality in the information society

A variety of concepts exist that describe the nature of social divisions between people who are favourably placed in information resource distribution and others who are not (Vehovar et al, 2006: 280-281; Yu, 2006). The division is often defined as a gap between those who do and those who do not have access to computers and the internet (Van Dijk, 2005: 1). But such a dichotomous portrayal is scientifically not tenable. An increasing mass of research shows that conceptualizations of inequalities concerning ICT solely in terms of technologically 'rich' and 'poor' is too limited and rudimentary in analysis (Selwyn, 2004: 345; Van Dijk, 2006: 233). Income or socio-economic status remains the most important factor in explaining differences in ICT adoption and use. Lower levels of income are consistently shown to be associated with ICT inequalities (De Haan & Rijken, 2002; Lenhart & Horrigan, 2003), but there are several other inequalities running in parallel in industrialized economies:

- Gender differences (men having more access and using more ICT than women) are important in explaining inequality, even though recent research indicates declining gender differences in ICT access and basic levels of engagement (Compaine, 2001; Van Dijk & Hacker, 2003);

- Age is still one of the most important dimensions of ICT inequalities: increased age is associated with lower levels of access, limited modes of use and patterns of connecting. Age differences are especially pronounced in those individuals aged 60 and over (Van Kesteren & De Haan, 2000; Roe & Broos, 2005);

- Lower levels of education are shown to be associated with digital divides related to access and use of a range of ICT (Servon, 2002; Bonfadelli, 2003; Roe & Broos, 2005);

- Family structure or composition is related to more or less ICT access and use. The presence of school-age children tends to increase contacts with ICT (Van Rompaey, 2002);

- In addition to these variables there are others such as race, geography/rural-urban location, culture/social participation, etc. that determine access to and usage of ICT.

3.2. Relative utility theory

Our approach is articulated around the concept of 'relative utility', a sociological reinterpretation of the economic concept of 'marginal utility'. The notion of ‘cost’ is extended to any effort needed to appropriate a product, which is not only money but also, for example, the time required to acquire skills. Under ‘utility’, we understand all perceived benefits a user may obtain from using a product (Greene & Baron, 2001: 243). The relative utility of a product is the perceived increase of utility obtained by appropriating one more unit of that product in relation to the available resources. The term resources does not only refer to income, but to all socio-economic dispositions that influence the adoption and use of ICT.

It then becomes possible to determine a hypothetical 'turning point' for ICT adoption, namely the point at which the benefits will outweigh the costs of appropriating an ICT product for a certain category of users. This is based on the assumption that costs and benefits are similar for homogeneous socio-demographic and socio-economic groups. Homogeneity, in this context, means that people share the same characteristics in terms of the most important resources that determine the use of ICT: access, skills and attitudes (ASA). A specific combination of conditions in terms of access to ICT, skills to master the devices and attitudes towards the technology is then called an ‘ASA-profile’.

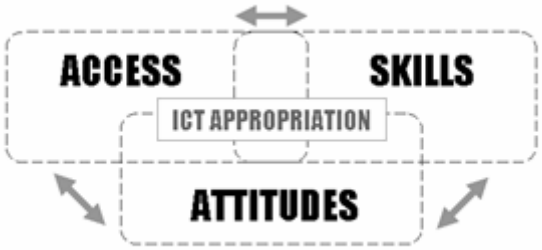

Figure 1. The ASA approach

On a practical level, in order to set up effective eInclusion measures, the advantage of this method is that groups of individuals with relatively homogeneous ASA-profiles can easily be identified and reached by policy makers. Very often they are represented by professional or social organizations that know how to reach them and are willing to collaborate with government. A specific offering can then be proposed to these groups, taking into account the specificities of their ASA-profile and socio-economic background.

For example, a high-income and low-skills group, say butchers, will be offered specific training, and attitudinal problems will be tackled taking into account their socio-economic background. A low-income and positive attitude group, say single mothers with children, may need less convincing but more help in terms of lowering barriers to entry. Moreover, it is also possible to increase the benefits of personal computer and internet usage, either by providing information about specific applications or by increasing the net added value of usage.

3.3. Our approach

The approach proposed is based on a research project comprising three consecutive research stages. Phase I aimed at refining the assumption that members of homogeneous socio-demographic and socio-economic groups share similar ASA-profiles. It consisted of a quantitative survey designed to gain insight into the perceptions of access, skills and attitudes by groups of individuals with shared socio-demographic and socio-economic characteristics. Phase II of the research consisted of qualitative in-depth and focus group interviews with respondents of each group. The main objective of this phase was to improve our understanding of why people do not use ICT at home and to examine possible leverages

to lift people over the turning point between non-usage and usage. Phase III intended the validation of the findings of the two previous phases.

In this paper we discuss the main results of Phase I, which consisted of a quantitative survey of non-adopters. We define them as people who do not use a personal computer and internet in a residential context. This means that they may use computer/internet at work or at other places, for instance in libraries or with friends or family. We wanted to test our assumption that individuals that belong to homogeneous groups with similar socio-demographic and socio-economic profiles will display a common ASA-profile (sharing the same characteristics in terms of resources that determine ICT acceptance). Furthermore, we also wanted ascertain that policy makers can effectively target and reach these people collectively, as a group. This compelled us to use a specific sampling method that took account of the affiliation of people with a representative professional or socio-economic organisation.

3.4. Sampling procedure

We recruited individuals as they are members of groups in society with a certain level of organization and that can be reached through a legitimate point of contact. These groups were sampled in a theoretical way, meaning that we selected individuals based on a limited number of characteristics, i.e. variables of which previous research has shown that they are of major importance for (non-)adoption of ICT. This resulted in certain prototypical profiles which are exemplary of the societal diversity without being representative for the overall population.

The following groups were selected:

1) Single mothers with children;

2) People who just started a basic computer and internet training;

3) People who manage a micro company (in our case butchers);

4) Liberal professions (in our case physical therapists);

5) Low educated people with a technical background (in our case labourers);

6) High skilled people with a technical education (in our case mostly with an engineering degree);

7) Unemployed people;

8) People who work in the social sector (in our case nurses);

9) Civil servants and

10) People who are aged 60 years and older.

A number of professional and social organizations helped us with the recruitment of the potential respondents. 200 individuals completed the questionnaire, of which 184 valid questionnaires were retained.

All users, except for group 2 and 6 are self-declared non-users. Nevertheless, approximately 80% of them indicate that they have access to a computer at home, and 66% have an internet connection at their disposal. These figures are quite high in comparison with the overall population: in 2007 is was estimated that in Flanders, where we recruited our respondents, 72% of the population owns at least one computer at home and 65% of the population has access to internet at home (FOD Economie, 2007). This bias can be explained by taking into account that, except for group 10, all respondents were recruited in the age group between 35 and 55.

In order to map their perceptions of computer and internet use at home, we presented the respondents with a list of statements. The statements were based on the adoption determinants of Rogers (2003: 222) and complemented with determinants developed by De Marez (2007: 365-424). A number of these statements aimed at obtaining information about the respondents' specific ASA-profile: (1) positive or negative attitudes towards computer and internet at home; (2) the presence or lack of skills and competences; and (3) the presence or absence of barriers to access ICT. Other statements served as measurement scales to gain insight in the influence of more generic factors such as, for example, the influence of social networks or marketing strategies of the ICT industry.

4 ASA-profiles

4.1 Main findings

Based on the mean scores of each statement (measured on a five-point scale varying from 'I do not agree at all' to 'I fully agree'), the perception of all users alike is that computers and internet are expensive. In addition, these respondents believe that ICT may be too expensive for a larger part of the population. The negative perception of the price factor only weakly relates to people's attitudes toward ICT. Indeed, even though respondents were selected as non-users (at home), we observed that a larger part of them have positive attitudes towards ICT. They think that using computers and internet at home will make life easier. Our respondents indicate that most of the members of their social network are enthusiastic about computer and internet at home. Social influence plays an important role but for most respondents negative perceptions of members of their social network will not restrain them to adopt computer and internet into the household.

Responses were much more divided on skills, measured via statements such as 'complexity' or 'self-efficacy'. Some report to be lacking the basic skills (which prevent them to start using a computer at home), whilst others can be considered as sufficiently ICT-competent, for example because they (have to) use the computer at work. In addition to the perceptions of the respondents towards complexity and usability of ICT, we also examined the actual ICT skills of our respondents. For this purpose they were shown a list of ICT related tasks, varying from very basic (for example, sending and receiving e-mail) to very complex (for example, installing a new version of Windows).

Respondents are most skilled in (basic) activities such as 'putting files into folders', 'word processing', 'e-mail', 'retrieving information via a search engine'. Many are familiar with tasks such as 'finding information via a search engine', 'sending and receiving e-mail', 'showing someone else what information you can find on the internet', 'moving a word to another place in a text' or 'adding a picture to a text'. For more complex activities such as 'keeping the computer up-to-date', 'repairing hardware troubles', or 'making a website' a growing part of the respondents filled in that they are not familiar with this and a smaller part of them indicates that they actually are capable to perform these tasks.

We asked people about their actual interest in computer and internet applications by asking them to rate different types of activities on a five-point scale varying from 'no interest at all' to 'very interested'. We applied a varimax factor analysis (SPSS) on the answers so as to reduce the list of 35 computer and internet applications to eight categories: 'information', 'news', 'pc-applications', 'eGovernment', 'learning & job', 'multimedia', 'bridging distances' and 'transactions'. Our respondents indicate that they are most interested in using ICT for information, news and basic computer applications. They have less interest in transactional services (with the exception of online banking, which people more see as a familiar 'informational service').

Another part of our survey examined the influence of the social network of the respondent on the use of personal computer and internet at home. We investigated the number of interactions with family, friends, acquaintances, colleagues and neighbours and, additionally, we mapped out the 'social resources' people have at their disposal within their social network, that is the social contacts that people can rely on to ask for advice when purchasing equipment or get assistance from in case of computer problems

(Van Dijk, 2005: 53). Other scholars studied the role of social resources in ICT acceptance and call these individuals 'warm experts' (Bakardjieva, 2005: 99) or 'local experts' (Stewart, 2007: 551). We also paid attention to the 'technological culture' of people's social network, which is the way people deal with technological artefacts and applications in their social relations and in the everyday culture of their households (Punie, 2000: 558). The results of this analysis show that family still is the most important determinant for the appropriation of computer and internet at home. People prefer getting help from family members for commercial advice and for troubleshooting as well as to learn new skills. The presence of these experts is not only important for the domestic use of computer and internet but also for taking full advantage of it, for example to help interpret and to make sense of the new information or services that become available (Wyatt et all, 2005: 211).

4.2 Further analysis

An important goal of the first research stage was to test the assumption that socio-demographically and socio-economically related respondents yield similar profiles in terms of access, skills and attitudes (ASA). We also wanted to know if it is possible to draw-up a consistent ASA-profile for people that are more loosely connected, that is through affiliation with a representative social organisation. We described this ASA-profile as the specific combination of conditions in terms of access to ICT, skills to master the devices and attitudes towards the technology.

To test this assumption we performed a cluster analysis (SPSS) based on the statements that we discussed in the previous section. The first step in the analysis consisted of reducing our five-point measurement scale to bipolar categories. We have interpreted the answers of the respondents on each statement in terms of their ASA characterization. For example, a person who fully agrees to the statement "Working at home with pc and internet is nice" gets an At+ score because we can confidently assume that this person has positive attitudes towards working with ICT. This way of working (for each of the 37 statements) allows us to distinguish the answers of the respondents in terms of bipolarities between Ac+, Ac-, S+, S-, At+ and At- and is necessary in order to compare the different cluster groups with each other.

Ac(cess)	+	people have no problem with access to computer and internet at home
Ac(cess)	-	people have problems with access to computer and internet at home
S(kills)	+	people are skilled sufficiently to master the devices
S(kills)	-	people lack skills to master the devices
At(titudes)	+	people have positive attitudes towards the technology
At(titudes)	-	people have negative attitudes towards the technology

Table 1. ASA bipolarity

The cluster analysis resulted in five distinctive groups with maximally internal homogeneity and external heterogeneity. We labelled each of these clusters:

LABEL	N
Incapable refusers	39
Self-conscious indifferents	34
The willing but incapable	13
Skilled ICT-lovers with limited access	30
Price sensitive positives	68

Table 2. ASA-profiles

Each of the groups has specifics characteristics in terms of ASA determinants:

- *Incapable refusers*: respondents of this group both lack the skills to master ICT and have rather negative attitudes towards ICT;
- *Self-conscious indifferents*: these are individuals who have negative attitudes towards the technology but for whom access and skills are not a problem;
- *The willing but incapable*: these respondents are motivated to use computer and internet at home, but lack the necessary skills and have difficulties accessing ICT;
- *Skilled ICT-lovers with limited access*: respondents of this cluster are ICT-literated and have positive attitudes, but access problems prevent them to use the computer and internet at home;
- *Price sensitive positives*: individuals of this last group have average ICT-skills, are moderately motivated and access to ICT is the main problem for them.

The clusters demonstrate the existence of different typologies in terms of ASA-profiles. These profiles indicate the motivation of people to use (or not) the computer and internet at home. Each profile represents a different combination of the factors investigated, in which each factor carries a different weight. Moreover, statistical testing is also conclusive about the relation between the ASA-profile and the group affiliation. The results of Chi-Square Test (Pearson Chi-Square) show a clear-cut relationship (statistical significance $p \leq 0{,}01$) between the membership of the groups (of the theoretical sampling) and the membership of the ASA-profiles.

The figure below gives an overview for which groups we could accept our hypothesis and indicates in which ASA-profile a majority of the members of the groups result in:

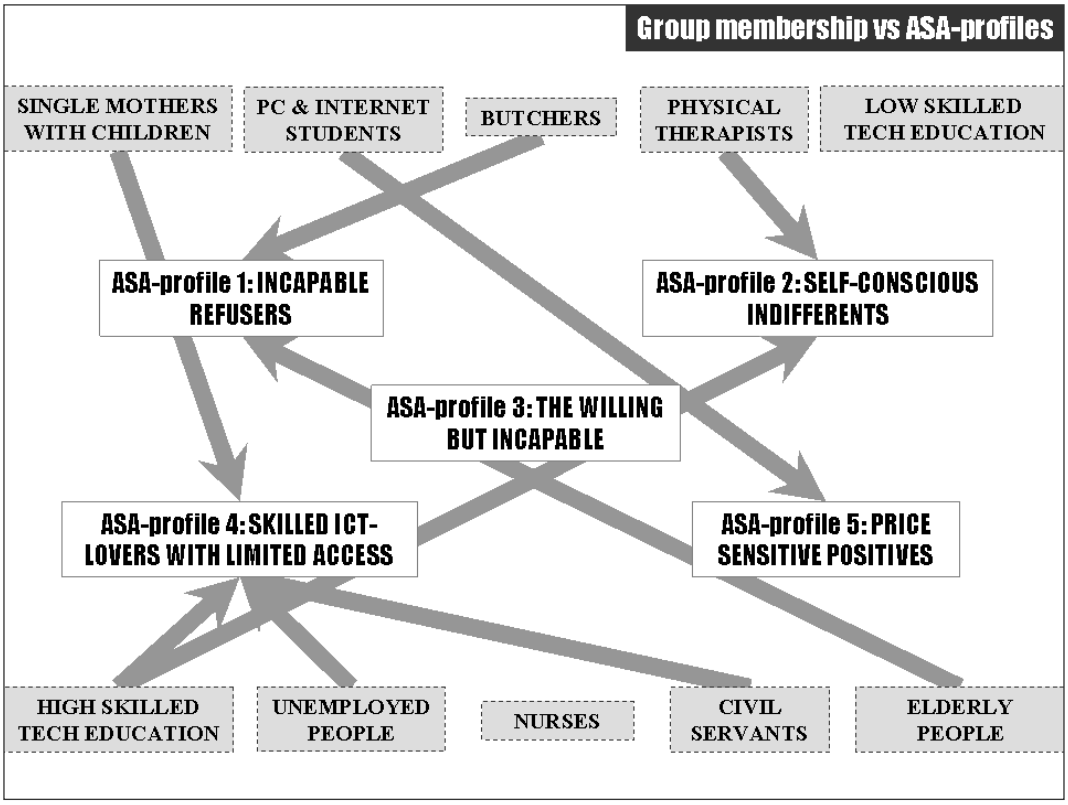

Figure 2. Membership of ASA-profiles

As shown in figure 2, there are two cases in which the socio-professional affiliation of people does not correspond with a specific ASA-profile: the nurses and the people with a lower technical education. Both groups are distributed across different clusters.

The nurses constitute what could be called a negative case (which may actually also be considered a confirmation of the validity of the approach). The nurses are represented in four of the five profiles, but under-represented in Profile 4, 'skilled ICT-lovers with limited access'. Our data indicate that this might be due to the fact that woman are generally more moderate in term of attitudes, the fact that the nurses in our sample were not able to familiarise themselves with ICT. The second exception is the lowly educated group with a technical background. This group is distributed across all profiles. The figures suggest that being male in combination with having a technical training, yields more positive attitudes than for the nurses. But this also causes them to be more dispersed across the different profiles. In this, they differ significantly from the higher educated with a technical diploma who have a clear-cut profile.

5 By means of conclusion

Our research provides an empirical foundation for a policy that aims at improving internet penetration by means of a segmentation and differentiation strategy. However, the research also cautions us for too hasty conclusions. Some of our findings have been counter-intuitive, in particular the observation that the group of nurses and the group of labourers did not generate or fall under any specific ASA-profile, even though they are homogeneous on the basis of critical factors such as education and income. The first, most evident conclusion would be that these groups are in fact heterogeneous in composition due to the influence of another factor. Our research is not conclusive in that respect. But even if it would, it leaves unanswered the question why other groups that were selected on the basis of education and income, such as the engineers and the physical therapists, do yield a specific ASA-profile.

Another possibility is that we actually may have traced evidence in support of our relative utility theory. This follows from the observation that the groups with higher education and income generate specific ASA-profiles, contrary to the groups with lower to moderate income and education. Relative utility means that the perceived 'cost' of ICT is related to the perceived 'utility'. If this is so, a relatively low perception of utility will have less negative effect on persons with a high income than on persons with a low income. The reason is that the cost of acquiring that utility represents a lower proportion of that persons' income and therefore takes a lower proportion out of the budget that could otherwise be spent on other utilities. Moreover, higher education generally contributes to a better and more positive perception of ICT-utility. Consequently, saying that high income and high education are decisive factors in fostering adoption is not the same as saying that a moderate or low income is decisive in motivating non-adoption.

The observation that attitudes towards ICT strongly differ in groups with lower incomes and lower education also suggests that adoption may also be stimulated by increasing the (perceived) utility of ICT for these people, as this will legitimate the expense for ICT. The next, qualitative, stage of our research will allow us to refine our insight on this matter. It will also help us to better understand the positive stimuli that might be decisive in generating ICT acceptance by specific groups.

Disclaimer

The points of view expressed in this paper are the sole responsibility of the authors. They do not by any means engage the Federal Agency for Information and Communication Technology, its political authorities or its partners.

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References

Bakardjieva, M. (2005). Internet society: the internet in everyday life. London: Sage.

Bonfadelli, H. (2003). 'Online communication: putting the knowledge gap theory into perspective'. In: A. Schorr, W. Campbell, M. Schenk (eds) Communication research and media science in Europe. Berlin: de Gruyter.

Compaine, B. M. (2001). 'Declare the war won'. In: B. M. Compaine (eds.) The digital divide: facing a crisis of creating a myth? London: MIT Press.

De Haan, J. & Rijken, S. (2002). The digital divide in the Netherlands: the influence of material, cognitive and social resources on the possession and use of ICT's. The Electronic Journal of Communications, Online, 12 (1&2).

De Marez, L. (2006). Diffusie van ICT-innovaties : accurater gebruikersinzicht voor betere introductiestrategieën. Unpublished PhD thesis, Department of Communication Studies, Ghent University.

eInclusion@EU (2004). Analytic framework – eInclusion and eAccessibility priority issues. Deliverable D1.1. eInclusion@EU – Strengthening eInclusion & eAccessibility across Europe.

FOD Economie (2007). Statistieken over de informatie- en communicatietechnologie (ICT), Enquête bij de Belgische bevolking. Brussel: FOD Economie, Algemene directie Statistiek en Economische Informatie.

Greene, J. & Baron, J. (2001). Intuitions about declining marginal utility. Journal of Behavioral Decision Making, 14, 243-255 (2001).

Kaplan, D., 2005. EInclusion: new challenges and policy recommendations. Brussels: eEurope Advisory Group.

Lenhart, A. & Horrigan, J. B. (2003). Revisualizing the digital divide as a digital spectrum. IT & Society, Online, 1 (5).

Punie, Y.(2000). Domesticatie van informatie- en communicatietechnologie. Adoptie, gebruik en betekenis van media in het dagelijkse leven: continue beperking of discontinue bevrijding? Unpublished PhD thesis. Free University Brussels (VUB).

Roe, K. & Broos, A. (2005). Marginality in the information society: the socio-demographics of computer disquietude. Communications: the European Journal of Communication, 30 (1) pp. 91-96.

Rogers, E.M. (2003). Diffusion of innovations (5th ed.), New York: The Free Press.

Selwyn, N., 2004. Reconsidering political and popular understandings of the digital divide. New Media & Society, Vol. 6 (3), pp. 341-362.

Servon, L. J. (2002). Bridging the digital divide: technology, community and public policy. Oxford: Blackwell.

Stewart, J. (2007). Local experts in the domestication of information and communication technologies. Information, Communication & Society, 10:4, 547-569.

Van Dijk, J. & Hacker, K. (2003). The digital divide as a complex and dynamic phenomenon. The Information Society, 19, pp. 315-326.

Van Dijk, J. (2005). The deepening divide: inequality in the information society. Thousand Oaks, CA: Sage.

Van Dijk, J. (2006). Digital divide research, achievements and shortcomings. Poetics, 34, pp. 221-234.

Van Kesteren, M. & De Haan, J. (2000). Digitaal kapitaal: verschillen in computerbezit en –gebruik tussen jongeren en ouderen. Tijdschrift voor Communicatiewetenschap, 28 (3), pp. 186-213.

Van Rompaey, V. (2002). Media on/Family off? An integrated quantitative and qualitative investigation into the implications of information and communication technologies (ICT) for family life. Unpublished PhD thesis, Leuven: Dept. Communicatiewetenschap, Fac. Sociale Wetenschappen.

Vehovar, V., Sicherl, P., Hüsing, T. & Dolnicar, V. (2006). Methodological challenges of digital divide measurements. The Information Society, 22, pp. 279-290.

Wyatt, S., Henwood, F., Hart, A. & Smith, J. (2005). The digital divide, health information and everyday life. New Media & Society, 7(2), pp. 199-218.

Yu, L. (2006). Understanding information inequality: making sense of the literature of the information and digital divides. Journal of Librarianship and Information Science, 38 (4) December 2006.

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EU principles in modernisation of Justice and the Turkish IT project UYAP

Information and computer technologies play a major role in the development and improvement of the judicial process. It helps to deal with growing complexities of litigation and makes hearings faster and more efficient. Creation and maintenance of an effective, modern and capable judiciary is one of the main aims of the Union, and a continuing obligation of EU membership.

This article discusses the principles of the EU in the modernization of Justice and, in particular, Turkey's place in this process. As the eGovernment issue is so wide and comprehensive, discussion will be restricted to basic principles and initiatives in this field and will focus mainly on one particular aspect of it, namely eJustice. I shall present EU principles in modernization of Justice within the context of the accession process, and afterwards some main institutions and initiatives will be examined. The Turkish judicial IT Project (National Judiciary Informatics System, UYAP) will be analysed in order to demonstrate the Turkish Judiciary's potential role and function in this field, as well as the impacts and benefits of enlargement on the member and candidate countries in terms of modernization of Justice. Turkey will not only benefit from accession, but also contribute to the EU in terms of usage of IT in judiciary.

Many countries, even developed ones, are striving to carry out their domestic approaches on the substance of e-transformation like Turkey. It is believed that sharing the experiences gained during the course of the comprehensive UYAP project would be of interest and beneficial to many countries in the EU.

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Keywords

eJustice, turkey, enlargement, modernization, UYAP, judiciary, law, hearings, courts, e-transformation, administration

> “Thanks to the enlargement, the same level of technology can be provided in all the states of Europe and generate standardisation and interoperability between different systems.”

1 Introduction

Modernity, as a brief and summarized term, is a process that constantly evokes the idea of promoting innovation, continual creation of the new towards the future, being avid for novelty and the establishment of the rights and freedoms. Globalization is one of the most visible consequences of modernity and it stimulates enterprises and states to concentrate on modernization. As for modernisation, it is the sum of the creative processes of large-scale and unceasing change in a society which has economic, political, cultural characteristic and implication of modernity. The development of science and technology, industrialization, political development, democratisation and the establishment of modernity values are the essential aspects of modernisation[1].

In this context, modernisation of Justice has become an indispensable and complementary part of these processes, and has a significant importance. As seen in this essay, the European Union (hereafter EU) has very sound institutions and principles in terms of providing efficient and modern judiciary within its borders. This essay discusses the impacts of EU principles on member and candidate states in the field of modernization of Justice, in particular Turkey's role in this process. As the eGovernment issue is so wide and comprehensive, attention will be restricted to basic principles and initiatives in this field; instead it is mainly focused on one particular aspect of it, namely eJustice. I shall present EU's principles in modernization of Justice within the context of the accession process, and then some main institutions and attempts will be examined. In the following section Turkish judicial IT Project – National Judiciary Informatics System (UYAP) - will be touched on shortly in order to demonstrate the Turkish Judiciary's potential role and function in this field. Afterwards, the impacts and benefits of enlargement to the member and candidate countries are assessed in terms of modernization of Justice. In the final section I will attempt to provide a summary and reach a conclusion.

2 Basic eGovernment Initiatives in Europe

EGovernment is one of Europe's foremost challenges. EGovernment is defined here as "the use of information and communication technologies in public administrations combined with organisational change and new skills in order to improve public services and democratic processes and strengthen support to public policies"[2].

With regards to the EU treaties, responsibility for eGovernment policies seems to remain to the EU member states' national governments. Member states try to get benefit of ICT in their governmental process within one of the main objective of EU; 'promoting new forms of governance'[3].

It can be seen from the Ministerial conference in Manchester in November 2005 that there is a clear commitment from all member states to develop strategies to modernise public administration by using eGovernment to facilitate online services for citizens. In this step, the European Commission agreed to adopt a specific strategy 'e-commission 2006-2010' which offers online, integrated and fully transformed and paperless services. They should be better, more cost-effective, transparent and secure, which are beneficial for staff, national administrations, partners, business and citizens[4]. Main

[1] Alberto Martinelli, *Global Modernization Rethinking the Project of modernity*, Sage publications 1st edition, London, 2005, p.7-10

[2] Signposts towards e-Government 2010; (This report is prepared by the European Commission e-Government Unit in cooperation with the eTEN, e-Europe and IDABC units on behalf of the e-Government subgroup of the e-Europe Advisory Group.) European Commission Information Society and Media Directorate, November, 2005 p.8 (http://ec.europa.eu/information_society/activities/egovernment_research/doc/minconf2005/signposts2005.pdf) (accessed date 24.11.2007)

[3] P.G. Nixon; *ctrl, alt, delete; Re-booting the E.U. via e-government*; E-Government in Europe, Routledge, 2007, p.19-21

[4] e-Commission 2006-2010: enabling efficiency and transparency; http://www.ec.europa.eu/dgs/informatics/ecomm/doc/ecomm-2006-2010_cs_en_v414_postcis.pdf, p.13 (accessed date 23.11.2007)

initiatives presented below provide evidence that significant importance is given to the eGovernment issue in the EU.

Lisbon Strategy : During the meeting of the European Council in Lisbon (March 2000), the Heads of State or Government launched a "Lisbon Strategy" aimed at making the EU the most competitive economy in the world and achieving full employment by 2010. Information Society policies address main objectives of the Lisbon Growth and Job Strategy. They drive productivity growth, create an open and competitive digital economy, and stimulate innovation to tackle changes of globalisation and demographic change[5].

eEurope 2002: In 2000 EU agreed to adopt this initiative as a part of the Lisbon Strategy. The major aims of eEurope 2002 was to ensure online eGovernment services to citizens by providing cheap, secure and fast internet[6].

eEurope 2005: It was launched at the Seville European Council in June 2002 and endorsed by the Council of Ministers in the eEurope Resolution of January 2003. It aimed to develop modern public services and a dynamic environment for e-business through widespread availability of broadband access at competitive prices and a secure information infrastructure[7].

i2010: 'European Information Society 2010' is a comprehensive strategy which is adopted by the Commission on 1 June 2005 to encourage the development of the digital economy by modernising and deploying all EU policy instruments. In this most recent attempt, the EU seeks to promote a system of joined-up, integrated policy initiative to facilitate an information society by enhancing eGovernment services. Organisational, semantic and technical interoperability are mentioned as essential in order to provide different systems which can work together for ICT enabled public services[8].

3 Some basic principles of EU in the modernization of Justice

It is an undeniable fact that as a part of eGovernment, eJustice plays a crucial role to increase transparency, reduce administrative corruption, improve quality of service delivery, provide community a better access to Justice, enhance efficiency and productivity and decrease costs in the interaction of citizens with governments[9]. Furthermore thanks to eJustice projects, the duration of the assizes may even be diminished, especially in routine cases. The speed of service delivery also increases when a civil servant handling a case has real-time access to databases which are located in other units or countries. Data mining techniques enable policy makers to acquire a better insight into the needs of the society instead the need of politicians[10].

There are some legal provisions addressing effective judiciary which can only be achieved by the aid of modernisation of Justice. Article 6(1) of the European Convention on Human Rights[11], as well as Article

[5] Lisbon Strategy, http://ec.europa.eu/information_society/eeurope/i2010/docs/launch/lisbon_strategy_and_ict.pdf (accessed date 26.11.2007)
[6] eEurope 2002, http://ec.europa.eu/information_society/eeurope/2002/action_plan/pdf/actionplan_en.pdf (accessed date 26.11.2007)
[7] eEurope 2005, http://ec.europa.eu/information_society/eeurope/2005/index_en.htm (accessed date 26.11.2007)
[8] i2010, www.europa.eu.int/information_society/eeurope/i2010/index_en.htm (accessed date 26.11.2007)
[9] Subhash Bhatnagar, E-Government From Vision to Implementation, Sage Publications, London 1st edition, 2004, p. 37-60
[10] Stavros Zouridis, Victor Bekkers, *Electronic Service delivery and the democratic relationships between government and its citizens,* Democratic Governance and New technology, Technologically mediated innovations in political practice in Western Europe Routledge, London 2001 P. 125, 126
[11] Convention for the Protection of Human Rights and Fundamental Freedoms as amended by Protocol No. 11 www.echr.coe.int/NR/rdonlyres/D5CC24A7-DC13-4318-B457-5C9014916D7A/0/EnglishAnglais.pdf (accessed date 26.11.2007)

47 of the European Charter of Fundamental Rights[12] mention the right to "a fair and public hearing within a reasonable time by an independent and impartial tribunal established by law". The observance of this right requires member and candidate countries to have an independent, impartial, professional and efficient judiciary. The UN's International Covenant on Civil and Political Rights states (article 14-1)[13] that "in the determination of any criminal charge against him, or of his rights and obligations in a suit of law, everyone shall be entitled to a fair and public hearing by a competent, independent and impartial tribunal established by law".

These provisions, which are explicitly mentioned in the progress and screening reports of candidates, show that significant importance is given to the efficiency and competency of the courts which can be easily provided by the modernization of judiciary. Relating to the 10 new Member States and the two acceding States, the EU stresses that 'the establishment of an independent, reliable and efficient judiciary is of paramount importance. This notably requires sufficient human resources and qualified staff, adequate and modern equipment, acceleration of court proceedings, reduction of the number of pending cases to avoid unreasonable delays and measures to ensure the adequate enforcement of judgments'[14].

The independent, efficient and accountable Justice system demonstrates the country's ability to take on the obligations of EU membership. According to the screening report of Turkey: 'Indicators of effort and progress made by a country to improve judicial efficiency include the level of the annual budget of the courts and infrastructure and equipment including the physical state and sufficiency of court houses, the level of computerisation, online access (to eg. constitutional court and supreme court jurisprudence) and effective case flow (the way cases flow through the entire court system, i.e. the way cases and court capacity are matched) and records management in courts'[15].

There are some challenges all over the European judicial system: huge workload, keep updated with innovations, lack of well educated staff and the need of modern and well- equipped courts to name just a few. Functionally adequate court buildings equipped with the latest technology and linked with the inside or outside judicial units are essential for the efficient operation of a court. This is the most effective way to shorten the duration of the cases. The average duration for civil proceedings and criminal proceedings should not be over the reasonable time according to (Article 6-1) ECHR, in fact it is one of the most serious problems in many of the judiciary. This requirement has a significant importance not only from the individual's human rights point of view, but also from the EU accession point of view.

4 Some basic institutions

Directorate-General for Justice, Freedom and Security

The European Commission set up a small task force for Justice and Home Affairs when the Maastricht Treaty was signed in 1992. This was expanded into a full directorate-general (The Justice, Freedom and Security DG) in October 1999. It is one of the European Commission's 36 departments and is made up by 17 policy units. One of them is the IT dimension of the area of Freedom, Security and Justice. This unit's task is to deliver support for the design and preparation of modern Justice and to implement large-scale IT systems to ensure the Freedom, Security and Justice in Europe[16].

[12] Charter of Fundamental Rights of the European Union, www.europarl.europa.eu/comparl/libe/elsj/charter/art47/default_en.htm (accessed date 26.11.2007)
[13] International Covenant on Civil and Political Rights (UN), Entry into force 23 March 1976. http://www.unhchr.ch/html/menu3/b/a_ccpr.htm (accessed date 26.11.2007)
[14] Report, www.eu-coordinator.gov.cy/harmonization/harmonization.nsf/All/1D8E86ADF769C9D5C2256E89002FC45D/$file/24_jha.doc. (accessed date 26.11.2007)
[15] E.C. Turkey Screening Report Chapter 23 - Judiciary And Best Practices
[16] The Justice, Freedom and Security Directorate General http://ec.europa.eu/dgs/justice_home/index_en.htm (accessed date 27.11.2007)

The European Network of Councils for the Judiciary (ENCJ)

It was established in 2004 and consists of national institutions in the member states of the EU. These are independent of the executive and legislature, and responsible for the support of the Judiciaries. The Ministry of Justice in member states and institutions from EU candidate states may be granted observer status. National organisations for the judiciary from 24 EU (candidate) member states have joined the ENCJ. Main responsibilities of the ENCJ are: eJustice, quality management, supporting co-operation between members, exchange of experience in relation to how the judiciary is organised and how it functions, and provision of expertise, experience and proposals to EU institutions and other national and international organisations[17].

European Commission for the Efficiency of Justice (CEPEJ)

The European Commission for the Efficiency of Justice (CEPEJ) was set up by the Committee of Ministers of the Council of Europe on 18 September 2002 with Resolution (2002-12). It consists of qualified experts coming from the 47 Member States of the Council of Europe. The aim of the CEPEJ is to ensure the improvement of the efficiency and functioning of Justice in the Member States. The creation of the CEPEJ demonstrates the will of the Council of Europe to promote the knowledge in the judicial systems and usage of new information technologies (IT) to improve the efficiency of Justice in Europe[18]. Due to the importance of the work undertaken by the CEPEJ, the EU considers it essential to co-operate with the Council of Europe in order to ensure consistency in the field of evaluation of Justice in Europe[19].

Eurojust

Eurojust is a new EU body established in 2002 to enhance the effectiveness of the competent authorities within Member States in particular when they are dealing with the investigation and prosecution of serious cross-border and organised crime. Eurojust improves co-operation between the competent authorities of the Member States by facilitating the execution of international mutual legal assistance and the implementation of extradition requests. Eurojust fulfils a unique and important role as a new permanent body in the European legal area. Its mission is to enhance the development of Europe-wide co-operation on criminal justice cases.[20]

5 Turkey's Status

Turkey is a democratic and secular country aiming to join EU because of economic, politic and historical reasons. The most important reason is the historical target showed by Atatürk, the founder of Turkish republic, to keep up with the modern nations' level. Everyone would agree with the idea that Turkey will benefit from EU if the negotiation process is completed successfully. On the other hand, it is widely discussed among academicians and politicians that the accession of Turkey would contribute to the EU. There are many aspects in this discussion, but it is mainly focused on the usage of technology in the judiciary.

6 National Judiciary Informatics System (UYAP)

The Ministry of Justice of Turkey has prepared a National Judiciary Informatics System (UYAP), which is to implement a very ambitious information system between the courts and all other institutions of the ministry. The UYAP equipped these institutions with computers and networks, and also gave them access to all the legislation, judicial records and data of the Police and the Army. It is an eJustice system

[17] ENCJ, www.encj.net/encj/ (accessed date 27.11.2007)
[18] CEPEJ, http://www.coe.int/t/dg1/legalcooperation/cepej/presentation/cepej_en.asp (accessed date 27.11.2007)
[19] Twining process, http://www.abgs.gov.tr/files/tarama/tarama_files/23/SC23EXP_Judiciary%20-%20Impartiality,%20Prof,%20Efficiency.pdf (accessed date 27.11.2007)
[20] EUROJUST, http://www.eurojust.europa.eu/index.htm (accessed date 27.11.2007)

integrated in the eGovernment, which has been developed in order to ensure a fast, reliable, soundly operated and accurate judicial system[21].

The Accession Partnership with Turkey adopted on 8 March 2001 requires strengthening the efficiency of the judiciary through, in particular, reinforcing its institutional capacity[22]. Accordingly, Turkey prepared a National Plan for the Adoption of the Acquis (NPAA) to achieve the objectives stated in the Accession Partnership[23]. Modernisation of Justice and penal reform are included as fundamental priorities in the Accession Partnership and in the NPAA.

The UYAP has not only integrated judicial units with each other, but also with concerned institutions, making it possible to reach all kind of data which is needed during processes. During the trials, judges can access criminal records online according to their authority. The judicial record database has been integrated with the database of UYAP.

The birth certificate registrations can also be accessed online by the courts and procedure's offices. All cases in Turkey's courts can be accessible online by the judges, prosecutors and lawyers provided that they have an approval from the judges who deal with the case. Land registries and drivers records can be retrieved instantly at the beginning of the trials[24].

6.1 Phases

The project was started in 2000 and completed by the end of 2007. UYAP has been planned in two phases. First, the central organization in Ankara: The first phase's objective was automating the procedures of the central organization of the Ministry and its subordinate units. This stage was completed in 2002.

Second, the countrywide organization: Automation of the UYAP Provincial Units. The second phase of the project was completed by the end of 2007, and since then the project has turned out to be a system rather than a project. All the judicial units and agencies make use of ICT in their daily processes, and all the judiciary processes, transactions and trials are transmitted into an electronic environment.

6.2 UYAP consists of these sub-systems:

- Penal and civil Law System
- Administrative Law System
- Public Prosecutors Services System
- Court of Cassation System
- Probation System
- Verdict Support System
- Lawyer Information System

[21] UYAP, www.uyap.gov.tr/english/genelbilgiler/genelbilgi.html (accessed date 28.11.2007)
[22] Council Decision 2006/35/EC of 23 January 2006. http://eur-lex.europa.eu/smartapi/cgi/sga_doc?smartapi!celexplus!prod!DocNumber&lg=en&type_doc=Decision&an_doc=2006&nu_doc=35 (accessed date 28.11.2007)
[23] National Plan for the Adoption of the Acquis, http://ec.europa.eu/enlargement/fiche_projet/document/TR%200401.02%20Courts%20of%20Appeal.pdf (accessed date 28.11.2007)
[24] UYAP, http://www.uyap.gov.tr/english/index.html (accessed date 28.11.2007)

- Enforcement-Bankruptcy System
- Convict-Arrest Management System
- Citizen Information System
- Personal Management System
- Financial Management System
- Supply and Procurement Management System
- Training Management System
- Document Management System
- Forensic Medicine System
- General Support System
- Inspection Management System

6.3 Citizens and Lawyers portals

Turkish citizens can now reach and examine their case information via Internet and learn the day fixed for a trial without going to the court; they can be informed online about their cases or hearing dates; they can submit their claims to the court by using their electronic signature and examine their files through internet. As a recent development, after reaching and agreement with the GSM operators and completion of technical issues, text messages containing information about the case files are also being sent to parties who need to be warned of when to attend court.[25].

The Lawyer Portal is available only for certificated lawyers. According to the present online system, lawyers can obtain information to see in which phase the cases are or to learn the date of hearing without going to the courthouse. Lawyers can pay process and tax fees from their offices by use of VPN Technology; litigate a claim or dispute to court through electronic means; review cases and submit petitions online via UYAP[26]. Online cases have just started in Turkey, as some lawyers have begun to submit their claims using their e-signature.

Thanks to the private passwords given to them, lawyers can enter the system from their computer in the bureau. It is no longer necessary to go to a courthouse to learn information about the phase of a case or to learn the date of a hearing, and this provides a 20% savings in working hours of the judicial staff.

6.4 Decision support system

In every stage of an investigation, especially during the hearings, the system may suggest some proposals to the users whenever they request it, or may warn them in order to prevent basic judicial errors.

It is expected that these improvements/ warnings can result in an 80% decrease in the number of cases returned from Supreme Court due to errors in the proceeding. For example, many fugitives have been

[25]UYAP citizen portal http://vatandas.adalet.gov.tr/proxy/lib/vatandas.html (accessed date 28.11.2007)
[26]UYAP Lawyer portal, http://www.uyap.gov.tr/avukatport/avukat.htm (accessed date 28.11.2007)

caught thanks to this new platform, because it warns users with pop-ups on the screen if the data of any fugitive is entered into the system.

6.5 Document Management System

The Document Management System (DMS), the exchange of the electronic documents between the provinces and the core centre, has been started. At present, all kinds of data and information flow electronically in a documentation management system between the MoJ and other units. Announcements, circulars, opinions and letters of the personnel, in addition to the data and all sorts of communications of the Legal Jurisprudence, Administrative Jurisprudence and Justice Commissions with the Ministry are managed within the UYAP.

With document management software, all documents are just a few clicks away. Judicial units use that system to get documents online and to store and manage them. All bureaucratic procedures and formal writings are made in the electronic environment, thereby avoiding delays and reducing mistakes, especially those related to codes of procedures, as well as ensuring some degree of transparency.

6.6 Structure

UYAP has a central filing system. Structure is central. All servers are in Ankara. All data flows into central units, providing money, hardware and personnel savings. All the data is processed by the UYAP database momentary. Thus all the data is integrated, factual, reliable and current.

The software was designed totally flexible to enable the convenient usage in all courthouses whatever the size, type of work or intensity may be. Data repository and migration is only in one system to avoid data confusion and duplications. Java programming has been used in the UYAP, as the Ministry of Justice believes it is a mature, robust, and versatile language.

6.7 Electronic signature

The legal status of the e-signature, activities of the electronic certificate servers and the transactions concerning the use of electronic signatures in every field are regulated under a legal framework with the Law on Electronic Signature no 5070, dated 15.01.2004. Furthermore, it is laid down under the Article 5 of this Law that a reliable electronic signature has the same legal effect as a hand signature. Moreover, the article 14/1 of the Law on Obligations says as follows: “Reliable electronic signature has the same power of proof with the hand signature”

After the enactment of legal provisions, the Turkish Ministry of Justice has reached an agreement with the public e-signature provider for the delivery of 30,000 e-signatures for judges, prosecutors and staff by the end of June 2008. Until now, 20,000 personnel applied for the e-signature and 8,000 of them have received it. The Ministry of Justice is planning to issue a regulation which will ban any document to circulate physically among the judicial units after 01.07.2008. All the documents will be required to be sent in an electronic environment, signed by an e-signature. Namely, correspondence among the judicial units will be completely transformed into a digital environment after that moment.

6.8 Benefits of UYAP

Speed and efficiency of operations: UYAP created a fast, secure and efficient system enabling the appropriate sharing of information across the Turkish judicial services by transferring key business processes of the judicial system into central electronic means. Instructions to other courts in order to collect evidence can be instantly sent and received online. Access to information and transactions are online, instant and secure.

All documents, processes and files are standardised: Before UYAP, courts and other judicial units had to write the writs one by one. After UYAP, similar writs are being written through stencils. That is one of the significant impacts of this case in terms of benefits and costs. Employees save time and effort - courts and other units save personnel. Due to standard and ready forms, all the data is filed automatically, such as instructions, indictments, hearing minutes, decision and others, allowing to finish cases faster and more efficiently. It has enabled court staff to produce common documents without having to type each of them one by one. UYAP has nearly saved on labour force by 30%.

Economical judicial services: UYAP has reduced the clerical, administrative and communications costs which would otherwise be incurred in the traditional manual and paper-based system. With the online connection of courts, expenses of bureaucracy and postal costs are removed.

The Ministry of Justice issues a monthly bulletin about Turkish judicial legislation. Paper copies of the periodical (a total of 13,000) were being sent to all Turkish judicial units including lawyers, bar associations, etc. A recent policy change has led to an important saving in the budget of the judiciary, some 400,000 New Turkish Liras (NTL). Indeed, since the recent decision, the bulletin is distributed through the ministry's website and not by post. Furthermore, consulting old issues of the Judicial Legislations Bulletin used to take some time. Now, previous numbers of the publication can be accessed online.

Obtain central financial control: The payments of the experts and taxes can be controlled in a more reliable way. Now the budgets of the judicial units are prepared by UYAP and budgetary control is made online. Determination, audit and expenses are pursuit on a central database with the accounting system in UYAP.

Transparency in terms of accountability and data accuracy: All takeover files from previous years can be prepared instantly. An easy and fair dispatch of the files and works of courts and enforcement units is ensured.

Prevention of corruption: Destruction of files is impossible due to the electronic recording. All activities are logged in the system.

Performance management through integrated management information: To provide the capability to measure performance and report the effectiveness of Turkish judicial services in the terms and indicators defined by Government and stakeholders. All the data required for this is captured and made available through the operational UYAP system. The performance of the personnel can be followed through the digital environment.

Inspections by electronic means: Inspection of the judicial units can now be done online, providing time and costs savings.

Data mining in judicial field: Data mining tools which collect and disseminate aggregated data for future plans, providing a research capability to evaluate for example the impact of offender-crime assessment tools and programmes and to assess the effectiveness of interventions designed to reduce crimes. The evaluation of statistics is possible, and users who have the authority to gain access to this data can see it simultaneously and updated.

6.9 Simplify process:

- Before UYAP, promotion (being raised to a higher rank) of employees was notified in individual notifications. After UYAP, notifications are sent to the relevant units in a single copy.

- Decrease administrative and judicial workload, enabling practitioners to focus on other priorities. Processes that take hours or days can be done only in minutes with UYAP. Furthermore, the

figures related to files, selected crimes and the workload of units can be obtained in a swift way nationwide

- Instructions to other courts or other public offices in order to collect evidence can be instantly sent and received.

- Serving term of offenders can be calculated automatically by considering all related enforcement laws in detail. Miscalculations, discrepancies and waste of time are prevented.

- The forms and tables prepared by judicial units at the end of the day or year in order to take over files would last hours and weeks. All these documents can now be prepared within seconds and minutes. It has produced 25% savings in working time of staff and prevents overtime.

- Dispatch of the files and works of courts and enforcement units is being done and monitored easily and fairly by UYAP. For example, the collection of charges and duty distributions carried out before by hand are now carried out by the system, following the objective criteria determined in an electronic environment.

6.10 Interoperability opportunities

UYAP planned to set up integration means with other related public institutions and organizations. In this extent, integration was provided first of all with the MERNİS and Record of Convictions Database, giving users the opportunity of cross examination of identity and criminal records in seconds.

The integration continued with other projects such as POLNET (Police, Gendarmerie) and TAKBİS (Land Registry). Driver's license and land registries can be interrogated instantly by judges during the hearings. Prosecutors also can cross-examine the driver's license and land registries according to their limited authority.

On the other hand, postal services can be followed up by courts users instantly. Besides, arrest warrants in default can be pursued by courts automatically and online. When the system determines a sentence in absentia, it alerts users and due notice is under way.

6.11 General characteristics

- n-tier architecture, web-based, centralized system,

- Object-oriented software development technology,

- Java and J2EE V1.3 architecture,

- User interface by applets,

- Word processor, digital signature, coded documents

- Single sign-on,

- Using smart cards during login and access to improve security

- Integration with other systems in eGovernment scope,

- Menu and work flow driven processes within the system Can support multiple platforms

– All Framework of the Project deployed to Oracle Application Server at Automation of Election Information System

– Adaptable to changing laws

6.12 Some statistics

Number of UYAP User at 2006	10.012
Number of UYAP User at the beginning 2007	27.806
As of now number of UYAP user	48.615

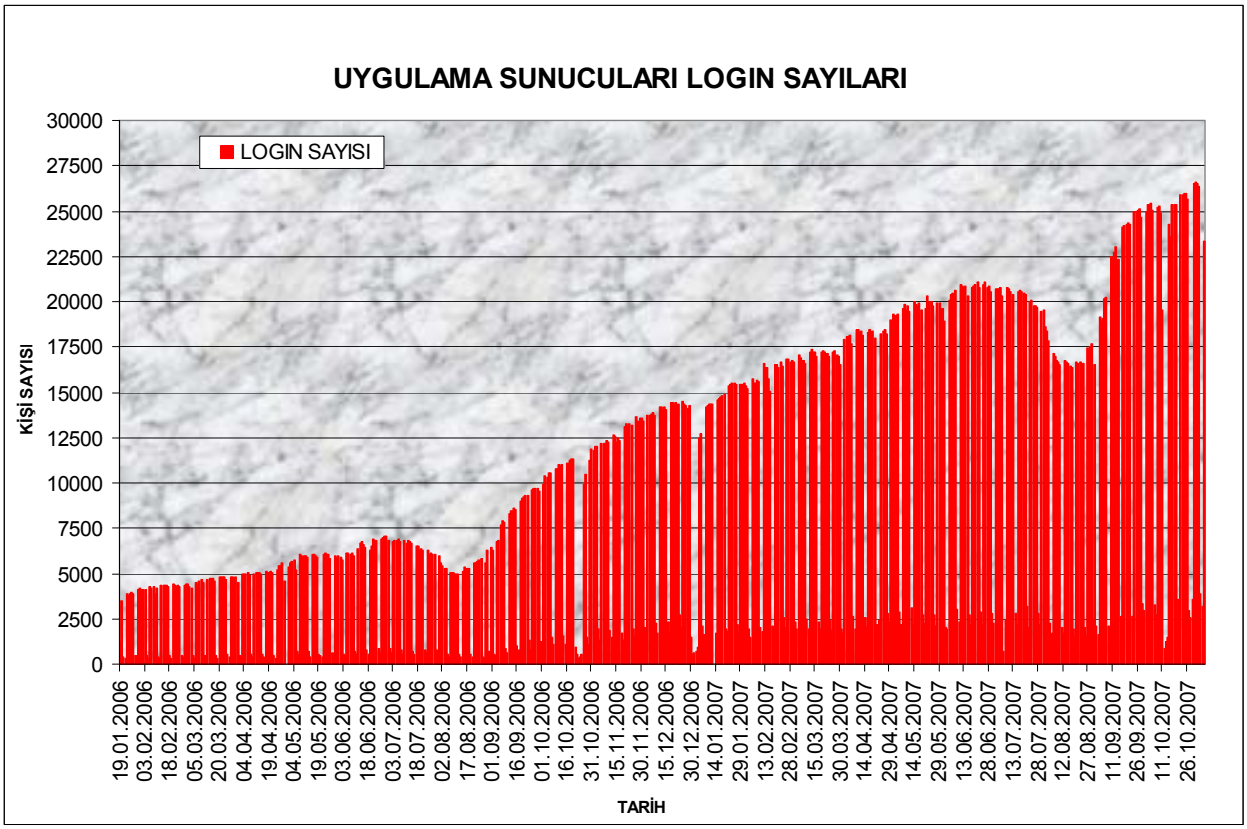

Figure. Number of Connected Users to UYAP System (LOG-IN Numbers)

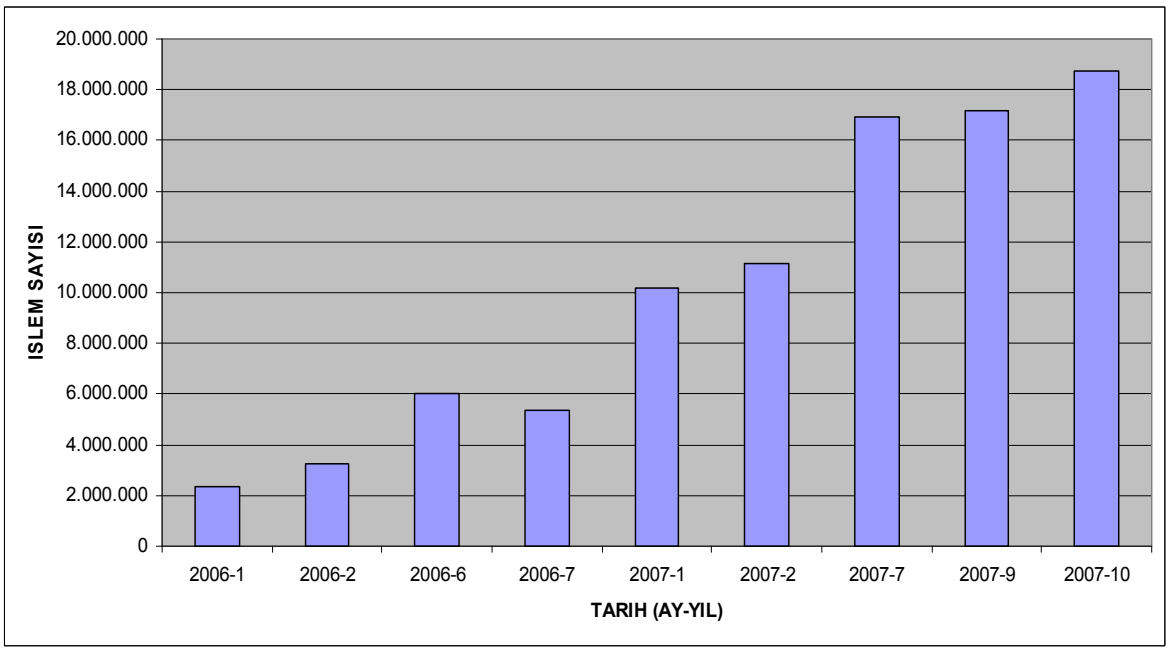

Figure. Number of transactions in UYAP

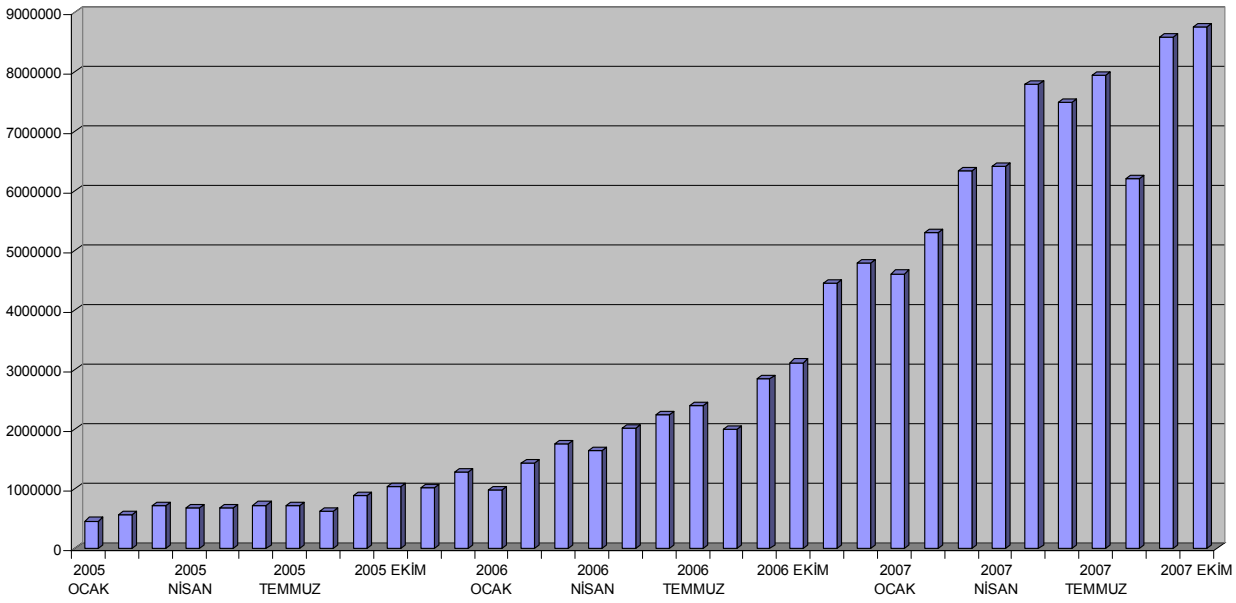

Figure. Monthly joined document's number in to the UYAP system

Comparison tables before and after UYAP

Criminal courts		
PROCESS	BEFORE UYAP	AFTER UYAP
Writing edits	3-5 mn.	3 mn.
Post lists	10-20 mn.	1 mn.
Statistics	15-20 day	15-20 mn.
Criminal record	1-15 day	1 mn.
Birth Certificate	1-15 mn.	1 mn.
Take over files	7-15 day	1 dk
Transfering files	15-20 day	2-3 mn.
Promotions	1 day	0–1 mn.
Annual statistics	1 week	0–5 mn.

Savings of UYAP	YTL	EURO
Savings thanks to UYAP-Judicial Record integration	25.320.896,0000 YTL	14.498.909,76 €
Savings thanks to UYAP-Birth Record integration	28.672.301,0000 YTL	16.417.946,06 €
Savings thanks to UYAP-Supreme Court integration	22.000.000,0000 YTL	12.597.343,11 €
Savings thanks to UYAP-SECSIS (E-ELECTION SYSTEM) integration	25.000.000,0000 YTL	14.315.162,62 €
Savings thanks to preventing duplicated data(double jeopardize)	29.268.000,0000 YTL	16.759.047,18 €
Savings thanks to eased takeover process	32.650.800,0000 YTL	18.696.060,47 €
Savings of UYAP in prisons	2.684.571,0000 YTL	1.537.202,82 €
Savings thanks to lawyer portal	261.150.000,0000 YTL	149.536.188,73 €
Savings thanks to citizen portal	4.128.850.000,0000 YTL	2.364.206.367,38 €
Savings thanks to databank, Laws and Jurisprudence programmes	3.565.600,0000 YTL	2.041.685,75 €
Savings thanks to UYAP editor	49.850.000,0000 YTL	28.544.434,26 €
Savings thanks to decision support system	28.448.489,0000 YTL	16.289.789,85 €
Savings of the free Lectern and e-mail services	25.000,0000 YTL	14.315,16 €
Savings of delivering hardware equipment	25.481.600,0000 YTL	14.590.929,91 €
Savings of rolling out activities	4.090.182,0000 YTL	2.342.064,82 €
Savings thanks to training of expert users	10.684.930,0000 YTL	6.118.260,42 €
Savings thanks to training of technical staff	194.400,0000 YTL	111.314,70 €
Savings thanks to distance learning facilities	12.500.000,0000 YTL	7.157.581,31 €
Savings thanks to Help desk	18.584.040,0000 YTL	10.641.342,19 €
Savings thanks to removal of outdated programmes	182.307,0000 YTL	104.390,17 €
Savings of UYAP I	7.713.568,0000 YTL	4.416.839,21 €
Savings of PM Social Aid and Solidarity Association spare system	276.000,0000 YTL	158.039,40 €
TOTAL	4.717.192.684,0000	2.701.095.215,30 €

7 Impacts of enlargement to the modernisation of Justice

It is common to hear that thanks to the unpreventable data flow in the borderless structure of internet, the world has been transformed into a small village. Information Technologies make all parts of the world more accessible and, potentially, networkable[27]. In this enormous flow of information, more cooperation and collaboration is needed in order to fight crime effectively and globally, in particular war on extremism and terrorism[28]. International crime forces the EU to be better organized, and that can be achieved by modernisation[29].

In a globalised world, to combat effectively international crime and terrorism requires more cooperation. Integration of data belonging to different nations and units is as important as the existing data collection in this process [30]. It is completely true to say that the enlargement of the EU contributes to this process and enhances cooperation. In order to reach an effective cooperation, modernization of Justice is a must that comes with the natural result of the enlargement process thanks to some basic standards required by the EU in this field.

All over the world it has been argued that the growth of the technology has gone beyond the development of the legislation in particular in copyright law, advertising codes, consumer protection, data protection, marketing restrictions, criminal law, employment law and international law. Enlargement process affecting judiciaries as a whole also can play a vital role to reach a Euro-wide legislation about these important issues.

One of the three priorities set out by the EU in judiciary is to enable individuals and companies to exercise their rights in a Member State other than their own. Other priorities are mutual recognition of judicial decisions and increased convergence in procedural law. In addition to this, criminals must find no way of exploiting differences in the judicial systems of Member States. Judgments and decisions should be respected and enforced throughout the Union, while safeguarding the basic legal certainty of people and economic operators[31]. In the enlargement process, candidates are forced to catch some standards and this should play a vital role to realize these priorities efficiently all over Europe.

Furthermore, thanks to the enlargement, the same level of technology can be provided in all the states of Europe and generate standardisation and interoperability between different systems. New techniques in information and communications technologies are diffused quickly, however adopted unevenly across the member states and the candidate states[32]. Some basic and main requirements determined by the Union as the conditions of acquis motivate candidate states to modernize their judiciary in an upward high and same level. By the enlargement process assistance to some candidate states that are weak or inexperienced in this field can also be provided. All countries can still learn from one another by examining the more advanced solutions of the others for their own unsolved questions[33].

In this context, Turkey will not only benefit from accession, but also contribute to the EU in terms of usage of IT in judiciary. As reflected in the recent progress report in the topic of "judiciary and fundamental rights", the Ministry of Justice of Turkey has gained outstanding experience in the usage of

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[27] Andrew Duff and Shirley Williams, *European futures, Alternative scenarios for 2020*, The federal Trus for Education and research, 2001, p.24.
[28] Malcolm Anderson And Joanna Apap, *Striking A Balance Between Freedom, Security And Justice In An Enlarged European Union,* Centre For European Policy Studies , Brussels, 2002, P.19
[29] Supra 27, p.37.
[30] Roland Traunmüller, *Modelling law and legal expert systems* Expert systems in Public Administration Elsevier Science Publisher Amsterdam 1989, P.93 94.
[31] Judicial priorities of EU, http://ec.europa.eu/justice_home/fsj/intro/fsj_intro_en.htm (accessed date 28.11.2007)
[32] Malcolm Anderson and Joanna Apap, *Striking A Balance Between Freedom, Security And Justice In An Enlarged European Union,* Centre For European Policy Studies , Brussels 2002 P.19
[33] Martin Eifert, Jan Ole Püschel; *Electronic Government as a challange for cooperation between different levels of public administration* National Electronic Government Routledge 2004 p. 260-261

IT in judiciary[34]. Many countries, even developed ones, are striving to carry out their domestic approaches on the substance of e-transformation like Turkey. It is believed that sharing the experiences gained during the course of this comprehensive study (UYAP) would be of interest and beneficial to many countries in the EU.

As mentioned in the global eGovernment report 2007 which has analyses 1,687 national government websites of 198 nations around the world, and based on the availability of publications, databases, and number of online services (namely *their overall eGovernment performance),* Turkey has been selected the 9th top ranked country in the world and the 3rd in Europe (after the UK and Portugal) between 2006 and 2007[35]. This report proves that the level of technology being used in Turkey is not far behind Europe, especially in judiciary; on the contrary, Turkey is ahead of many other European countries.

At the present day UYAP is being used by over 40,000 users, and the deployment level of UYAP is approximately 98% in the whole Turkish judicial institutions. All units are using the National Judiciary Network and they make their transactions and trials via UYAP.

UYAP was awarded the annual eGovernment prize of Turkey in 2004 and 2005 due to its significant breakthrough in Turkish judiciary[36].

8 Conclusion

Information and computer technologies play a major role in the development and improvement of the judicial process. It helps to deal with growing complexities of litigation and makes hearings faster and more efficient[37]. Creation and maintenance of an effective, modern and capable judiciary is one of the main aims of the Union, and a continuing obligation of EU membership as mentioned in this essay. It is aimed to achieve better compatibility and more convergence between the legal systems of Member States[38]. In order to achieve these objectives, the EU set up some standards and started some initiatives not only for the member states but also for the candidates looking forward to develop a functional and modern judiciary. An independent, modern, efficient and accountable Justice system is mandatory for a country willing to take on the obligations of EU membership. As a result, the accession process and the enlargement policy has generated an unprecedented momentum for judicial reform in the candidate states[39].

Likewise, in the course of progress towards accession to the EU and in response to the obligations of the acquis of the EU, the Turkish government started an ambitious eJustice project called UYAP which aims to modernise judiciary on the way to Information Society. Finally, in response to Turkey's achievements on the way of joining the EU, it may be its duty and responsibility to contribute to the EU or any other candidate states in the field of modernisation of Justice thanks to the internationally recognized experience gained during the last ten years.

[34] Progress report 2007 http://ec.europa.eu/enlargement/pdf/key_documents/2007/nov/turkey_progress_reports_en.pdf p.10 (accessed date 28.11.2007)

[35] Global E-Government, 2007 by Darrell M. West 67 George St. Center for Public Policy Brown University Providence, Rhode Island 02912-1977 United States Darrell_West@brown.edu (401) 863-1163 www.InsidePolitics.org august 2007 (accessed date 28.11.2007)

[36] UYAP information, http://www.uyap.gov.tr/english/index.html (accessed date 28.11.2007)

[37] Andrew Mowbray, *Justice and technology*, Justice in the twenty-first century Cavendish 2000 p. 207

[38] Supra note 31

[39] Monitoring The EU Accession Process: Judicial Capacity (accessed date 28.11.2007) www.eumap.org/reports/2002/judicial/international/sections/overview/2002_j_05_overview.pdf p.17-19

References

Alberto Martinelli, Global Modernization Rethinking the Project of modernity, Sage publications 1st edition, London, 2005, p.7-10

Andrew Duff and Shirley Williams, European futures, Alternative scenarios for 2020, The federal Trus for Education and research, 2001, p.24.

Andrew Mowbray, Justice and technology, Justice in the twenty-first century Cavendish 2000 p. 207

CEPEJ, http://www.coe.int/t/dg1/legalcooperation/cepej/presentation/cepej_en.asp (accessed date 27.11.2007)

Charter of Fundamental Rights of the European Union, www.europarl.europa.eu/comparl/libe/elsj/charter/art47/default_en.htm (accessed date 26.11.2007)

Convention for the Protection of Human Rights and Fundamental Freedoms as amended by Protocol No. 11 www.echr.coe.int/NR/rdonlyres/D5CC24A7-DC13-4318-B457-5C9014916D7A/0/EnglishAnglais.pdf. (accessed date 26.11.2007)

Council Decision 2006/35/EC of 23 January 2006. http://eur-lex.europa.eu/smartapi/cgi/sga_doc?smartapi!celexplus!prod!DocNumber&lg=en&type_doc=Decision&an_doc=2006&nu_doc=35 (accessed date 28.11.2007)

E.C. Turkey Screening Report Chapter 23 - Judiciary And Best Practices

e-Commission 2006-2010: enabling efficiency and transparency; http://www.ec.europa.eu/dgs/informatics/ecomm/doc/ecomm-2006-2010_cs_en_v414_postcis.pdf , p.13 (accessed date 23.11.2007)

eEurope 2002, http://ec.europa.eu/information_society/eeurope/2002/action_plan/pdf/actionplan_en.pdf (accessed date 26.11.2007)

eEurope 2005, http://ec.europa.eu/information_society/eeurope/2005/index_en.htm (accessed date 26.11.2007)

ENCJ, www.encj.net/encj/ (accessed date 27.11.2007)

EUROJUST, http://www.eurojust.europa.eu/index.htm (accessed date 27.11.2007)

Global E-Government, 2007 by Darrell M. West 67 George St. Center for Public Policy Brown University Providence, Rhode Island 02912-1977 United States Darrell_West@brown.edu (401) 863-1163 www.InsidePolitics.org august 2007 (accessed date 28.11.2007)

i2010, www.europa.eu.int/information_society/eeurope/i2010/index_en.htm (accessed date 26.11.2007)

International Covenant on Civil and Political Rights (UN), Entry into force 23 March 1976. http://www.unhchr.ch/html/menu3/b/a_ccpr.htm (accessed date 26.11.2007)

Judicial priorities of EU, http://ec.europa.eu/justice_home/fsj/intro/fsj_intro_en.htm (accessed date 28.11.2007)

Lisbon Strategy, http://ec.europa.eu/information_society/eeurope/i2010/docs/launch/lisbon_strategy_and_ict.pdf (accessed date 26.11.2007)

Malcolm Anderson And Joanna Apap, Striking A Balance Between Freedom, Security And Justice In An Enlarged European Union, Centre For European Policy Studies , Brussels, 2002, P.19

Malcolm Anderson and Joanna Apap, Striking A Balance Between Freedom, Security And Justice In An Enlarged European Union, Centre For European Policy Studies , Brussels 2002 P.19

Martin Eifert, Jan Ole Püschel; Electronic Government as a challange for cooperation between different levels of public administration National Electronic Government Routledge 2004 p. 260-261

Monitoring The EU Accession Process: Judicial Capacity (accessed date 28.11.2007) www.eumap.org/reports/2002/judicial/international/sections/overview/2002_j_05_overview.pdf p.17-19

National Plan for the Adoption of the Acquis, http://ec.europa.eu/enlargement/fiche_projet/document/TR%200401.02%20Courts%20of%20Appeal.pdf (accessed date 28.11.2007)

P.G. Nixon; ctrl, alt, delete; Re-booting the E.U. via e-government; E-Government in Europe, Routledge, 2007, p.19-21

Progress report 2007 http://ec.europa.eu/enlargement/pdf/key_documents/2007/nov/turkey_progress_reports_en.pdf p.10 (accessed date 28.11.2007)

Report, www.eu-coordinator.gov.cy/harmonization/harmonization.nsf/All/1D8E86ADF769C9D5C2256E89002FC45D/$file/24_jha.doc (accessed date 26.11.2007)

Roland Traunmüller, Modelling law and legal expert systems Expert systems in Public Administration Elsevier Science Publisher Amsterdam 1989, P.93 94.

Signposts towards e-Government 2010; (This report is prepared by the European Commission e-Government Unit in cooperation with the eTEN, e-Europe and IDABC units on behalf of the e-Government subgroup of the e-Europe Advisory Group.) European Commission Information Society and Media Directorate, November, 2005 p.8 (http://ec.europa.eu/information_society/activities/egovernment_research/doc/minconf2005/signposts2005.pdf) (accessed date 24.11.2007)

Stavros Zouridis, Victor Bekkers, Electronic Service delivery and the democratic relationships between government and its citizens, Democratic Governance and New technology, Technologically mediated innovations in political practice in Western Europe Routledge, London 2001 P. 125, 126

Subhash Bhatnagar, E-Government From Vision to Implementation, Sage Publications, London 1st edition, 2004, p. 37-60

The Justice, Freedom and Security Directorate General http://ec.europa.eu/dgs/justice_home/index_en.htm (accessed date 27.11.2007)

Twining process, http://www.abgs.gov.tr/files/tarama/tarama_files/23/SC23EXP_Judiciary%20-%20Impartiality,%20Prof,%20Efficiency.pdf (accessed date 27.11.2007)

UYAP citizen portal http://vatandas.adalet.gov.tr/proxy/lib/vatandas.html (accessed date 28.11.2007)

UYAP information, http://www.uyap.gov.tr/english/index.html (accessed date 28.11.2007)

UYAP Lawyer portal, http://www.uyap.gov.tr/avukatport/avukat.htm (accessed date 28.11.2007)

UYAP, http://www.uyap.gov.tr/english/index.html (accessed date 28.11.2007)

UYAP, www.uyap.gov.tr/english/genelbilgiler/genelbilgi.html (accessed date 28.11.2007)

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