

E-government and E-health portals

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1 Executive Summary

Nowadays with the increasing use of information and communication technologies (ICTs) all over the world new tools, new services and new structures could be exploited by citizens and governments, health professionals and patients, business and health industries, ...

New opportunities arise for each player who tries to understand and invest in these new dimensions where technology is the key, specially ICTs.

Nevertheless some barriers exist, e.g. high costs for the ICTs structures, the "digital divide" that subdivides the population between some who has the technologies and can benefit from them and the others who can not. Other institutional or economical problems can limit the implementation of the necessary infrastructures, nevertheless each user has to consider the potential advantages in using these technologies. like, e.g. are portals.

E-government and E-health offer a good chance to break through the existing barriers to change but we have not to consider them just a set of tools for doing the same things better. Through changing the economics of service delivery it offers government the opportunity to do different things, where more effectively meets the needs of citizens, businesses, health professionals,... at reduced cost.

E-health is one part of the E-government like e.g. E-voting, the two are strictly correlated because E-government should set the scene for infrastructure, policy, cross border and top level requirements, E-health needs the discipline, standards, good practice and scale from E-government.

This work aims to analyze one particular tools of E-government and E-health: the portal with its characteristics and its use in the public administration and for the health sector.

The first part tries to describe what is a portal and what are its main features, criteria and advantages; the second one is divided into two main chapters, the first chapter explains the E-government main characteristics and the role played within by portals. The second chapter wants to explain E-health and E-health portals.

The third part aims to compare the first one, more theoretic, with the practical analysis of some different portals (one for E-government: www.ch.ch and one for E-health: www.gesundheit.ch); like this we will try to compare the theory and see what really happens in the reality.

At the end we would try to be able to describe the effective role played by portals in today's E-government and E-health realities.

2 E-government Portal

To describe what is E-government we will take the definition given by the OECD (Organization for Economic and Co-operation and Development):

“E-government represents the use of ICTs (Information and Communication Technologies), and particularly the internet, as a tool to achieve government through better policy outcomes, higher quality services and greater engagement with citizens”¹.

The main goal of E-government, and consequently of portals, is to allow government to perform better with the help of the new technologies improving efficiency, services and helping all the stakeholders involved share information and ideas, and also to contribute to specific policies outcomes: E-government is not only about technology but is, above all, about providing services to citizens. Some examples of functions and actions that people can exploit through E-government portals are to consult databases, online payment, download of documents, online registration, registration, ask questions, ...

The full exploitation of the benefits of E-government technologies requires continued commitment to the development and use of a robust, secure and interoperable infrastructure, as well as to wide availability and use of broadband communications to maximize the efficiency of E-government systems and applications.

The technology dimension plays a central role because of ICTs are the base to develop any electronic service (E-government, E-business, E-health,...) and consequently also portals; as well the economical dimension is important because public administrations tries to provide better services with lower costs (even if the beginning costs for the new technologies are very high). Actually these new technology systems can contribute to reduce governments expenditures through more effective and efficient programs, for example with the decrease use of paper, the reduction of time spent for communication, and other services provided, but they can be also economically favorable for citizens and the other stakeholders involved (faster communication processes, less shifting, less paper,...).

The third key dimension involved in the development of E-government portals is that they would be able to assure privacy and protection issues to avoid abuses.

These 3 dimensions can be also considered in the E-health sector, where in the economical dimension health professionals like hospitals, doctors, pharmaceutical industries and so on have a central role; however for the other two we can consider the same characteristics.

Nevertheless E-government has to face with legislative and regulatory barriers as well as limited governments budgets that can impede the development of E-government and restrict its initiatives like the development of new portals.

It is also important to consider that online access has advantages that are impossible to replicate off-line, this causes significant differences between regions with access to the ICTs and Internet and regions without. This phenomenon called “the digital divided” represents *“a barrier to E-government in that people who do not have access to the Internet will be unable to benefit from online services.”¹*

Nowadays a growing number of people has access to the Internet, but there are still large numbers of people who do not (see Figure 2 and 3).

¹ OECD “The E-government imperative: main findings”; Paris, 2003

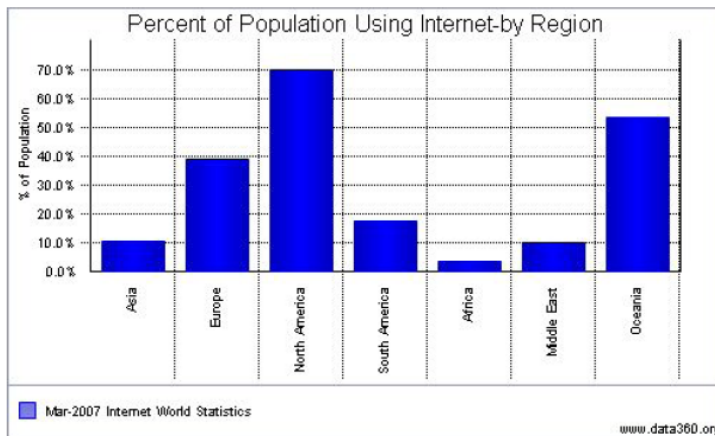


Figure 1: Percent of Population Using Internet-by Region

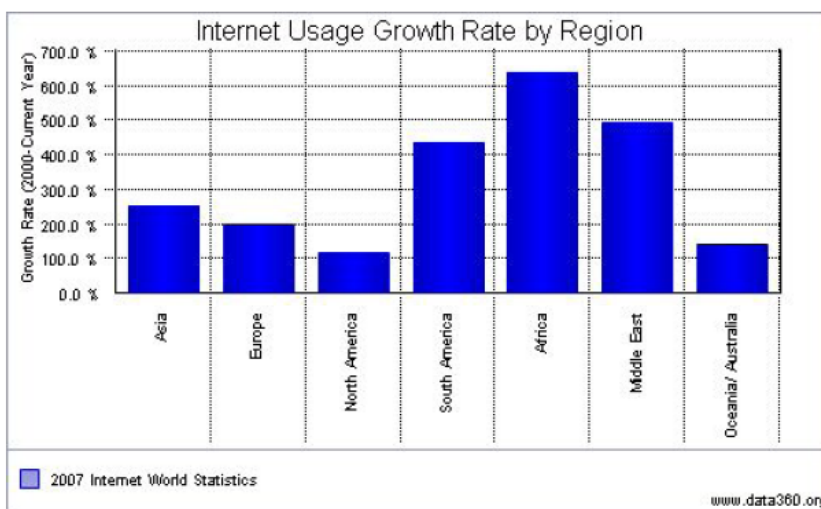


Figure 2: Internet Usage Growth Rate by Region

The first figure represented above shows a great percentage of people all around the world that today do not have access to the Internet, especially: Africa, South America, Middle East and Asia, consequently people living in these regions can not access directly to the services offered by the ICTs.

Nevertheless as showed in the second graph, there is a high growth rate, particularly in these regions, this can be an incentive for governments to improve their efforts on investing in E-government giving their citizens more possibilities to join “e-services” that could, also mean a contribution of the welfare.

The participants (or users) involved in E-government, and users to consider for the development of portals, can be classified into three main groups (see Figure 1)².

This categorization follows the general schema of the 3-users portal model, characteristically used to all levels of public administration today; these being the national or federal, state or provincial, and local or municipal levels of jurisdictional².

² Wyld, D.; “the 3 Ps: the essential elements of a definition of E-government”; Journal of E-government, Vol.1(1); <http://www.HaworthPress.com> 2004

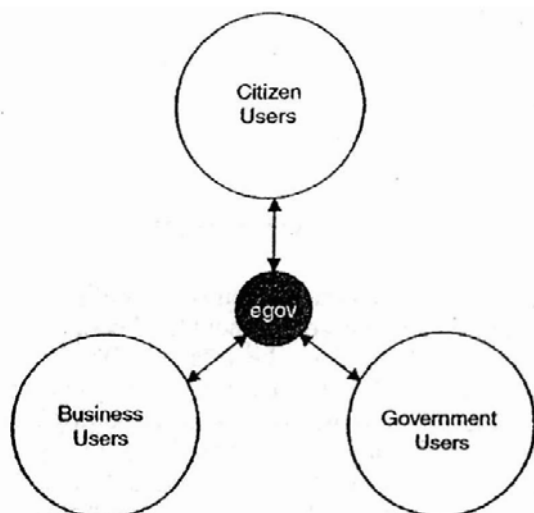


Figure 3: the participants in E-government

As showed in the figure these 3 main group of users can use E-government services to interact with each other, they also have different objectives on using portals and consequently different way to use them.

Government users want to talk with each other and transmit information across the governmental network trying to decrease the costs for the public administration; citizens want to communicate with the public administration: ask and receive information trying to spend less money and time, but also government gives information and interacts with citizens. Business users need specific information and they want also communicate and interact in the cheapest and fastest way with the government institutions and vice versa for the government with the economic users.

3 E-health portals

Nowadays health is a very important topic and lot of attention is paid on it, consequently E-health has becoming a growing interest for the public administration, health professionals, patients, citizens and all the stakeholders involved.

One of the main reasons is the rising health care costs that are a drag on economic competitiveness for government and the health industry and a great expense for families (and generally patients).

Also the access to health care is a major social issue that will have implications for public health and social policy for many years to come.³

That's why according to recent studies, E-health care industry is growing very fast, e.g. in 2003 in Europe E-health market grew was 9.7% (EUR 2.4bn), and became the third largest industry in the European health sector, with a turnover of €11 billion⁵ this can explain the great amount of different portals that we can find.

Today there is also a rising demand for health and social services, due to an ageing population, higher income and educational levels; portals and ICTs in general can be the answer to the increasing expectations of citizens who want the best care available, and at the same time to experience a reduction in inequalities in access to good health care, to respond to emerging disease risks (for example, new communicable diseases like SARS), to limit occupational accidents and

³ Schramm J., Burke, M.E.; SHRM Research; Workplace forecast 2004-2005. A strategic outlook"; 2005

diseases, to reinforce well-being at work and to address new forms of work-related diseases.

E-health portals can be an important tool for the reaching of these objectives in particular: *“E-health refers to the use of modern information and communication technologies to meet needs of citizens, patients, healthcare professionals, healthcare providers, as well as policy makers.”*⁴

Particularly *“E-health tools or solutions include products, systems and services that go beyond simply Internet-based applications. They include tools for both health authorities and professionals as well as personalized health systems for patients and citizens. Examples include health information networks, electronic health records, telemedicine services, personal wearable and portable communicable systems, health portals, and many other information and communication technology-based tools assisting prevention, diagnosis, treatment, health monitoring, and lifestyle management.”*⁵

These systems can e.g. help shorten or completely avoid the stay of patients in hospitals, while ensuring monitoring of their health status.

In this specific context portals, and ICTs generally, work for enhancing health promotion and health protection, as well as quality, accessibility and efficiency in all aspects of health care delivery.

Portals can enhance efficiency and bring added value to health care by avoiding duplicate or unnecessary diagnostic or therapeutic interventions, by supporting the continuity of care, by improving communication between healthcare establishments and by widening access to health knowledge and evidence-based medicine decreasing the void that exists between health professionals and patients.

One very important goal of E-health is that it is able to empower health consumers: patients and healthy citizens, both can benefit from better personal health education and disease prevention. They want to be involved actively in decisions related to their own health, rather than simply accepting the considerable discrepancy (‘asymmetry’) in knowledge between themselves and health professionals. E-health services provide timely information tailored to individuals in need.

Personalized systems for monitoring and supporting patients are also currently available – examples include wearable or implantable communication systems for continuous monitoring patients’ heart conditions.

One of the most important priority for the right use and development of E-health and its services is the creation of the necessary good working infrastructures, education and awareness of all the stakeholders involved so as to all are able to understand and to be understood in the system, define a common clinical language that is understood by professionals and non. It is also important to show what is the Evidence of value and benefits in adopting E-health in term of costs saved, time spared, information shared,... All “health system” e.g. clinics, hospitals, professionals,... have to be involved and support the initiatives. To join this goal is important to create a general confidence in E-health incorporating security standards and legacy systems because of a huge amounts of health information needs to be available securely, accessibly, and in a timely manner at

⁴ European Union, E-health conference, Ministerial Declaration; Brussels, 2003

⁵ E-health - making healthcare better for European citizens: An action plan for a European E-health Area; Commission of the European Community; Brussels, 2003

the point of need, processed efficiently for administrative purposes, and the need to provide the best possible health care under limited budgetary conditions.

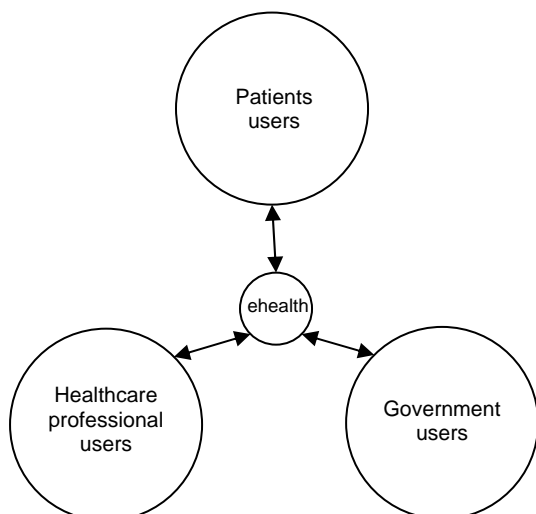


Figure 4: the participants in E-Health

We have taken the same figure used in the chapter 3 (Figure 4, page 6) for the E-government users, adapted to the h-health users (Figure 5). Portals are at the center and they allow the 3 groups to interact each other.

The most important user involved in this process are patients (including citizens that is more general), healthcare professionals as well as policy makers; their needs should be at the centre in the development of high quality health related information services; citizen empowerment is possible through widespread availability of high quality appropriate health information on the internet.

Today's a growing number of patients want to be more active on their health decisions they are looking proactively for information on their medical conditions and E-health portals can improve patients power because give them the possibility to have more information easier.

Having access to comprehensive and secure electronic health records has been shown to improve quality of care and patient safety. This will facilitate appropriate treatment of patients in providing health professionals with a better knowledge of the patient's history and of previous interventions by other colleagues.

Citizen and patient uses E-health e.g. when he seeks information online, uses self-management tools, participates in electronic communities, and requests a second opinion.

For health professionals E-health means offer best quality care within available resources limiting risks for the patients but unfortunately, medical errors still occur. Some of these might be avoided by making good use of E-health systems that can provide vital information, alerts, and make best practices, expert advice and results of clinical treatment more widely available.⁶

Hospitals may call upon portals for scheduling logistics, patient administration, laboratory information, radiology, pharmacy, nursing, electronic messaging between the hospital and other healthcare actors for communication of clinical and administrative data, and telemedicine and second opinions, in any specialty.

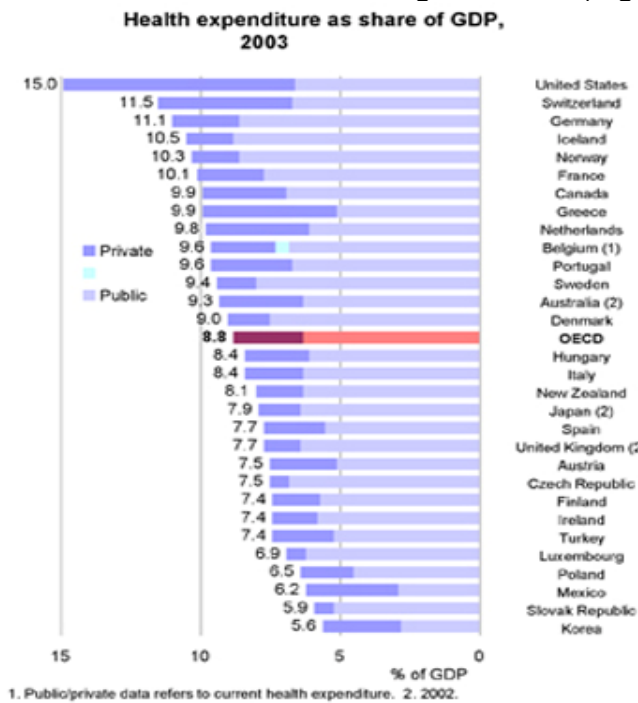
⁶ Silber, D., Comment améliorer le système de santé? Harvard University Colloquium, August 2003. *Espace Européen*, October 17, 2003.

E-health can benefit not only health professionals but all the staff employed in the health

sector including nursing, care, and administrative staff. Furthermore, E-health can contribute to achieving a safer working environment for health practitioners. In the European Union, health and social services have an accident rate which is 30% above the average by sector of accidents recorded⁷.

This means that something has to be done for the improvement of E-health infrastructures to join this goal.

Policymakers have to closely consider the potentialities offered by E-health portals because of the even higher costs of the health a the 2006 OECD report shows: *“health spending continues to rise in OECD countries and, if current trends continue, governments will need to raise taxes, cut spending in other areas or make people pay more out of their own pockets in order to maintain their existing healthcare systems.”* According to OECD Health Data 2006, health spending has grown faster than GDP in every OECD country, In most OECD countries, the bulk of healthcare costs is financed through taxes. ⁸ (Figure 6)



9

Figure 5: Health care expenditure in per cent of the gross domestic product.

Source: OECD Health Data, Paris, 2005.

Expenditure on the health care sector in percent of the gross domestic product (GDP) varies considerably across countries.

Only through concerted efforts by all stakeholders, can be possible to ensure a successful implementation where all partners benefit, thereby creating a win-win situation.

⁷ Communication from the Commission, *Adapting to change in work and society: a new Community strategy on health and safety at work 2002-2006*, COM(2002) 118 final, Brussels, March 2002.

⁸ OECD, http://www.oecd.org/document/37/0,2340,en_2649_201185_36986213_1_1_1_1_00.html, Paris, 26/06/2006

⁹ http://bulletin.sciencebusiness.net/ebulletins/images/1503/health_factcheck_one_f_20060106.jpg

4 Basic necessities for E-government and E-health

Despite the availability and proven benefits, that we tried to show before, E-health and E-government systems and services are not yet widely (see figures on page 4).

In many places, development is still at a pilot phase, often financed through research grants, moreover the speed of organizational change is often slow, and it can take up years to achieve full implementation¹⁰; to reach this objective it would be necessary the commitment and leadership of authorities, in particular related to financial and organization issues, these are essential elements for the successful deployment of portals, as well as the introduction of new applications and techniques. There is also an absolute need for fast connection, connectivity, and high speed, but we also consider confidentiality and security issues because of the importance of the confidentiality and protection of users data; the requirement for confidentiality makes information systems security critical.

Building trust is a prerequisite to the development of an information society, in E-health probably more than anywhere else. Citizens prefer services and information tailored to their needs and requirements, while knowing that their right to privacy is protected.

Liability in the event of problems - such as technical malfunctions of the system, network, or provision of the service itself.

Needs and interests of users are at the center of the process because, in general, these should be better integrated into the development and promotion of E-government and E-health.

In spite of the "digital divide", the equal access of all groups of society is an important goal in the public policy field. There is a risk that certain parts of society - such as lone parents of families, isolated communities, inner city communities, individuals with literacy, groups of immigrants, homeless persons, elderly persons and disabled persons – could remain excluded from the possibilities offered by portals if special efforts are not made to counterbalance such trends. On the other hand, portals can offer considerable possibilities for the provision of services to such individuals, groups, and communities.

5 What is a web portal?

E-Portal is the web service which can be reached from everywhere, is provided information from database web sites and dynamic data banks, is browser based, contains many features and activities such as chat rooms, forum fields, catalogues, live news, e-mail and customization, and provides access and integration to information and services cheaper, faster and securely. E-Portals provides people to reach the information stacks which are published disordered and dispersed on the internet faster and easier from one place on an integrated structure.

E-Portal provides possibility to access different data sources. However e-portal is required to be updated in order not to turn into a lumpish structure.

¹⁰ I. Iakovidis (1998) Towards Personal Health Record: Current situation, obstacles and trends in implementation of Electronic Healthcare Records in Europe, In *International Journal of Medical Informatics*, vol. 52, no 123, pp 105 –117.

E-Portals not only provide enterprises to open out to internet but also facilitate to data administration by both providing public officers with public data from one place and fulfilling the intranet function.

Since the 80s the developed countries have begun to use data technologies densely in order to increase access to public services by the nationals. The three main factors of this are;

- public expenditures which do not turn into efficient public service (which take root from delays, incorrect administration and poor organizational structures)
- Neo-liberal approaches which accentuate that the government to work within the market rivalry as private sectors
- understanding the fast development and added value created by data and communication technologies.

Public e-portals are critically important for public services to be given as online, for increasing the participation of the nationals to the highest position, decreasing the bureaucracy of the government, increasing the democratic participation of the nationals and for increasing the sensibility of the public bodies against the demands of the nationals.

Public e-portals perform services to different target audience for different job demands at different platforms as government-national, government-government, government-supplier and government-personnel.

E-public is realization of the work model, organization structure, working processes, product and services in electronic form.

6 Advantages of the portals

- Intelligent integration and access to enterprise content, applications and processes
- Improved communication and collaboration among customers, partners, and employees
- Unified, real-time access to information held in disparate systems
- Personalized user modification and maintenance of the website presentation

7 Importance of E-Portal in E-Government Approach

E-portal keeps an essential place in performing the public services. When surveyed in this concept, it is essential for;

- Data sources and services to come together and to be able to be reached from one point,
- Providing the possibility to access data fast and easily,
- Obtaining real time and dynamic data,
- Converting services to easy and simple forms,
- Increasing the rivalry power among the establishments,
- Providing financial savings and creating income sources,
- Joint use of sources and increasing the efficiency,
- Increasing the efficacy of service presentation,
- Creating cooperation among the employees,
- Increasing the transparency,
- Providing public data,
- Providing the confidence of the nationals.

8 E-Portal Criteria

8.1 E-Portal Criteria for Nationals and Information Technologies Substructure

- **Scalability:** Providing harmonization with the increase in user demands and working load (Transaction capacity, etc.)
- **Security:** Providing the security of private information and documents which belong to people / bodies.
- **Constant accessibility, continuity:** Providing 7x24 uninterrupted services to the user crowds.

8.2 E-Portal Criteria for the Use of the Nationals

- **Customization:** By providing recognition and register of the users by user name and passwords, e-portal should be customized according to demands and priorities and the customized information, document and services should be accessible. The person should access to different information and services provided by the body when required after introducing himself once.
- **One Stop Service Apprehension:** The establishment should access to the related service points which are provided by the body from its e-portal directly.
- **Full automation:** The work processes' starting and finishing in electronic form.
- **Dynamic Data Providing:** E-portal should not only provide statistical information but also the suitable medium which will provide producing reports and graphics easily from the existing information and interrogating from databases to people and inputting information when deemed appropriate.
- **Ease-of-use:** Accessibility to common data by devices (computer, telephone, wireless devices, hand-devices, kiosks, etc.) from different channels.
 - Simple, subject based categorized menu system
 - Site Map
 - Research and inquiry tools, metadata
 - Options lists (list box)
 - Cautioners which draw attention to new information
 - Help Menus and frequently asked questions (FAQ)
 - Online training
 - Guidance services for new users
 - Providing possibility to the disabled to use
 - Should provide possibility to get simple, correct and easy printput.
- **Transparency:**
 - Having tender data substructure
 - Producing document relating that the process is made successfully when online process is finished, and making confirmation.
 - Providing confidence (to presented information, privacy of private information, working processes, etc.)
- **Content Richness:**

- Service possibility with feed back mechanisms (e-mail, telephone, etc.)
 - Multiple language support
 - Facility address, telephone, legislation, organization structure, etc. information.
 - Discussion lists
 - E-library (documentation, archive system, etc.)
 - Communication richness with other related facilities (domestic and abroad)
- **Software Burden:** It should not bring any software/hardware burden to the users to use e-portal. E-portal is required to be used only through a web browser technique.

8.3 E-Portal Criteria for Data and Information Technologies Substructure

- **Multiple Medium:** It should be able to extend to provide possibility for supporting different platforms and data bases and for horizontal enlargement.
- **Flexibility:** Possibility of new application functions to be added easily, and systems and applications to be integrated with customers, business partners and suppliers.
- **Open standards:** Usage of the standards which provide flexibility to the applications and allow integration.
- **Easy-to-install:** Installing in a very short time and easily.
- **Acknowledging e-portal usage profile:** Tracing the profiles of users who visit e-portal and e-portal usage frequency, producing the related statistics and bettering the service which is presented in this direction.

9 TERM OF E-Governments- & E-Gesundheit-Portal

9.1 Definition of E-Government-Portal

The E-Government-Portals enable persons, enterprises and organizations an immediate and uncomplicated access to the public services. Portals serve for the orientation and information along with establishing contacts and social interactions such as handling the proceedings with public offices, in the same time.¹¹

9.2 Definition of E-Government-Portal

citizens as well as specialists of healthcare can be supported with / are able to offer information and services regardless of governmental borders which confronts national and international jurisdiction with new challenges.

10 E-Government-Portal & E-Health-Portal strategy and Standard in Switzerland

10.1 E-Government-Portal Strategy

eGovernment-Portals constitute an essential configuration element as a data interface for the administrative clients of the eGovernment. Over the eGovernment-Portal, the administrative clients can articulate their petitions and

¹¹ Definition of eCH : www.ech.ch

this is performed through electronic application without media-disruption of the related government [Tamb].

The following targets and demands of the administrative clients must be relocated in the configuration of the *eGovernment-Portals* in an apparently manner:

- *Electronic administrative information is fast and anytime findable for everybody.*
- *„The quality of the information presented is assured.“*
- *Electronic accesses to government offices are workable around the clock.*
- *Electronic accesses to government offices are unbureaucratic, reliable and comprehensible.*
- *Electronic accesses to government offices are cost-effective and quickly finalized.*
- Electronic accesses to government offices are protected and legal.

In EC-countries, this objective is followed with the start of „One Stop-Government“: Here, all the administrative clients receive access to all public services on all governmental levels over a single *eGovernment-Portal*. The clients must make efforts as a precondition, for an information questioner or for a public office, either on task or competence sharing or over the organizational structure of the offices. Even when the conversion of “One-Stop” (“A portal for all public services”) application will not be realistic in Swiss because of the developed structures and political boundary conditions, the reduction and target oriented structuring of the *eGovernment-Portal* region must remain as a target.

The public service presentations on the *eGovernment-Portal* is to be structured in a demand-oriented manner. Thereby, an access structure tested in practice is maintained on the grounds of life situations (of the natural persons) or business situations (enterprises, organizations). Over life situations and business situations, the target groups are addressed directly.

The technical security and reliability of the *eGovernment-portals* must be secured. The same is also valid for the quality and protection of the informations presented or made available over the portal. During the electronic access to the public offices, legal transactions could have been accomplished.

The administration client must rely on that all of the informations produced during the proceedings of the administrative procedure are protected.(Protection of personalities).

The user friendliness of the *eGovernment-Portals* is measured, depending on, how quick and how good the administrative client finds his/her way („Where am I?“, „What must I do?“, „What can I use?“ etc.). Simplicity of the services and navigation is an essential element to achieve a good portal conversion for the beginners and inexperienced users and then, help functions and clear structuring of the contents and functions, barrier-freeness, language versions, all of these are significant essential features of a good portal conversation.

- The visual (graphic) standardization of the public office entrances of the governmental departments had been carried out within frame of the project „Corporate Design Bund (CD Bund)“ and completed up to 31.12.2006.¹²
- The „Usability-Standard R013“ [R013] of the union regulates the formal configuration (page distribution, navigation elements, display resolutions) of the web-pages of the Union.

¹² Vgl. <http://www.cdbund.admin.ch/index.htm>

- An important petition of the *eGovernment*-conversion is the barrier-free access for the disabled persons, which had been also sanctioned by law (vgl. [BehiG]).¹³

Within the frame of a portal concept, the following organizational questions should be answered, taking the cost factors and usage aspects under consideration:

- Which public services will be presented and for which criteria will these be offered electronically?
- How and which administrative departments present their services under a jointly used *eGovernment*-Portal (thematic proposals-trunking of the fragmented public services of individual offices)? Providing the politic future course, the involved offices, responsibilities, cost sharing and processes must be regulated.
- How will be the *eGovernment*-Portal region configured as a teamwork of the pathfinder-, service providing portals and office accesses comprehensively and in a wide spread form?
- Which service proposals-types („only Information“, „Information and office access“) are appropriate for the individual portal forming?

10.2 *E-Government-Portal Standard*

10.2.1 Quality Standart

- **Transparency and Honesty**
 - Transparency of provider of site – including name, physical address and electronic address of the person or organisation responsible for the site (see Article 5 and 6 Directive 2000/ 31/ EC on Electronic Commerce).
 - Transparency of purpose and objective of the site
 - Target audience clearly defined (further detail on purpose, multiple audience could be defined at different levels).
 - Transparency of all sources of funding for site (grants, sponsors, advertisers, non-profit, voluntary assistance).
- **Authority**
 - Clear statement of sources for all information provided and date of publication of source.
 - Name and credentials of all human/ institutional providers of information put up on the site, including dates at which credentials were received.
- **Privacy and data protection**
 - Privacy and data protection policy and system for the processing of personal data, including processing invisible to users, to be clearly defined in accordance with community Data Protection legislation (Directives 95/ 46/ EC and 2002/ 58/ EC).
- **Updating of information**
 - Clear and regular updating of the site, with date of up-date clearly displayed for each page and/ or item as relevant. Regular checking of relevance of information.

¹³ Im Rahmen der schweizweiten *eGovernment*-Standardisierung bei *eCH* befasst sich die *Fachgruppe Accessibility* mit Fragen des barrierefreien Zugangs zu *eGovernment*.

- **Accountability**
 - o Accountability -user feedback, and appropriate oversight responsibility (such as a named quality compliance officer for each site).
 - o Responsible partnering -all efforts should be made to ensure that partnering or linking to other websites is undertaken only with trustworthy individuals and organisations who themselves comply with relevant codes of good practice.
 - o Editorial policy -clear statement describing what procedure was used for selection of content.
- **Accessibility**
 - o Accessibility -attention to guidelines on physical accessibility As well as general findability, searchability, readability, usability, etc.

10.2.2 Usability Standard

- Display resolution

It will be optimized for a display resolution of 1024 x 768 pixels. Dynamic page layouts will be used, width of the middle spacing (contents area) can be varied, while having the right and left spacing a fixed width.

- Page distribution

For web-pages, the following standardized distribution is binding (compulsory):



Figure 6:Page Distribution

Schematic representation of page distribution of page distribution for web-pages.

Notice: on this representation, the effective proportioning and measures are not repeated again.

- Categorizing the Elements:

- o **Identification area:** Logo, Localization/Identification, Identifiability, Footnotes
- o **Navigation area:** Service navigation, Language selection, Global- and main navigation such as elements of the user guidance (Bread Crumb Trail, Page-Navigation, Article-Navigation).

The first hierarchical stage is shown as global-navigation under the service-navigation horizontally. Depending on the selected menu point in the global-navigation, the corresponding subchapter will be visible in the main-navigation on the left spacing.

- **Contents area:** Content and context formation and –navigation, quick search/extended searched.

For over dimensioned charts, graphics and attached web-applications, context information is optional.

– Navigation elements

The following navigation elements should be used. Their placing and nomenclature is everywhere uniform.

Navigation element	Guidelines
Logo	Usage of uniform Logo is compulsory. This logo leads onto the homepage of the related website. No additional text-link will be inserted near the Logo
Service navigation	The service-navigation placed under the title line should contain the following three elements as the minimum content: Start page, overview, contact. For these minimum content of the service-navigation, a uniform nomenclature should be used all over the federal country. The sequencing of the elements had been given in advance.
Language selection	Language name in original language: Deutsch - Français - Italiano - Rumantsch – English
Global- and Main-navigation	The global-navigation can be adapted to the den related requirements. It may not contain more than seven elements. Additional navigation-elements are to be inserted between subject and documentation. Actual <Subject of the Site> documentation services provided <Over this Site> *Rubric names, which are marked bold, are to be used compulsorily.* only at the authorized points, Name will be mentioned, at many places, the name "on this page" will be used. Main-navigation The main-navigation conforms to the related requirements of the portal.
Search / Quick search	On each pages, there is a text field for departments and quick search. Data of the search area of the quick search in title of the text field Link for a extended search underneath the text field
Contents area	Positioning of the contents navigation at the top of the contents area. Link-titles correspond (as word or short sentence) to the title of the linked article. Under no circumstances, it should not be mentioned a web-address, which starts with http:// Style: Links should be differed optically clearer comparing to other texts. The description regarding to the linked content should be defined with one or two short sentences. The visitor must be informed, when a link will lead to an other web-site. This should be made in a new window opened. Links to dokuments (pdf, xls, ...) will open these in a new browser window. No popup-window is allowed to be used. Big views will be opened in a new complete browser window.
Context information	Informations will be presented in a uniform defined rubric. As a guiding size, for per rubric maximal five links should be used. The descriptions of the rubrics of the context-information are binding. Only when the context-informations do not fit in any of these rubrics, then, additional or other rubrics can be used.
Footnotes	Mentioning the web-side provider with contact information. For the mail address of the provider, an impersonal address or a mail form should be used. A remark of "legal" will be inserted by means of a link to a central disclaimer/legal" - page.

Table 1: Navigation Table

10.2.3 Accessibility Standard

– Accessibility as a management matter

The disabled friendliness of a web-site is not only a matter of development department, but, also it belongs to to each internet strategy.

Websites of the public offices must have been already configured barrier-free in accordance with BehiG Art. 14 Prg. 2, since 1. January 2004.

– Accessibility as integrated component of the project

The barrier-freeness should be taken into consideration and included already from the start on of each internet project. Accessibility can be converted for a less additional cost, in this case.

On the other hand, to adapt the accessibility of an existing website or taking the accessibility into consideration, first following to the completion of a project, leads to the partly high additional costs.

Accessibility should be mentioned as an essential component in the public announcements and contracts with the web-agencies.

Before the acceptance, it should be thoroughly controlled, whether the legal guidelines had already been converted.

Trough the foundation «Accessibility to everybody», the legal conformity can be tested. In the course of the year 2006, the certification of the barrier-free access should be possible through the foundation.

– Design for All

The principle of «Design for all» puts the user in the foreground.

Independently of the restrictions, a website should be developed, so that it can be used reasonably by most of the possible users.

Text versions for blind users should be prevented in any case.

– Separation between structural content and layout

HTML is not a program- or page definition language! A strict separation of structural content ((X)HTML) and Layout (CSS) is the foundation-stone of a barrier-free website.

– Guidelines

The international guidelines of W3C, the WCAG 1.0 is suitable for all braches of the public offices, as well as for the private enterprises.

To attain the federal standard P028, the conformity stage AA of the WCAG 1.0 must have been obtained, that means all checkpoints of the priority 1 and 2.

– Complexity

The complexity should be adapted always to the content and unnecessarily, high by no means.

– Device-Independent

The device-independency enables access of the different assisting technologies, such as screen reader, but, also access for other output-devices, for example, PDA or Handy

– Testing

The testing, whether the website is suitable to be used by the disabled persons, can only be tested adequately by the disabled persons, as the barriers and the functionality of the assisting technologies can only be tested and determined by themselves. For further information: www.access-for-all.ch/de/webtest.html

– Training

Accessibility is influenced partly through the systems (Content Management System) and tools. However, a part of the accessibility will be determined still by the author/redactor.

Therefore, information-responsible, authors and redactors should have been trained appropriately, so that they can reasonably convert the requirements of a disabled person friendly website.

– **Sustainability**

The accessibility is not matter that will be developed one time and remain constant thereafter. It must be always followed that new contents or new accessibility elements may always be available, which are to be added or applied.

10.2.4 Themenkatologe

The subject catalogue structures the range of services on the E-Government-Portals to the view point of the certain target groups (private persons, enterprises), so that they can reach more accurately to the public offices and the competent bodies, in order to obtain or access for the requested service (information or access to the public offices).

10.2.4.1 Structure and content of the Subject Catalog

– **Structure**

The subject catalog respectively for private persons and enterprises are located in separate documents (related Appendixes to eCH-0049) for the practical reasons.

The Structuring of the subject catalogs are closely leaned on the problem oriented order structure of the public service inventory [eCH 0015].

The subject catalogs define a hierarchical access structure to the public services. It consists of two hierarchical levels:

- Range (1st Hierarchical Level) contains a conceptual macrostructuring of the subjects such as “Employment & Social”, “Knowledge Education”, “Traffic” (subjects catalog for enterprises), etc.
- Group (2nd Hierarchical Level) contains the further finestructuring of the subjects within a range. For example, for the field of “Traffic” (subjects catalog for enterprises), there are following groups: „Train“, „Construction sites“, “Air flights“, “Street traffic“ etc.

– **Conversion**

The subject catalog for private persons had already been converted in Swiss E-Government-Portal **www.ch.ch**, which serves as a guidepost for the wide range of services on the portals of the union, cantons and communities (for example, **www.ag.ch** – Private persons and enterprises, **www.bs.ch** – Private persons). The subject catalog for enterprises will be implemented on the **www.ch.ch** in the course of 2007.

– Example for conversion „Range“ on the www.ch.ch

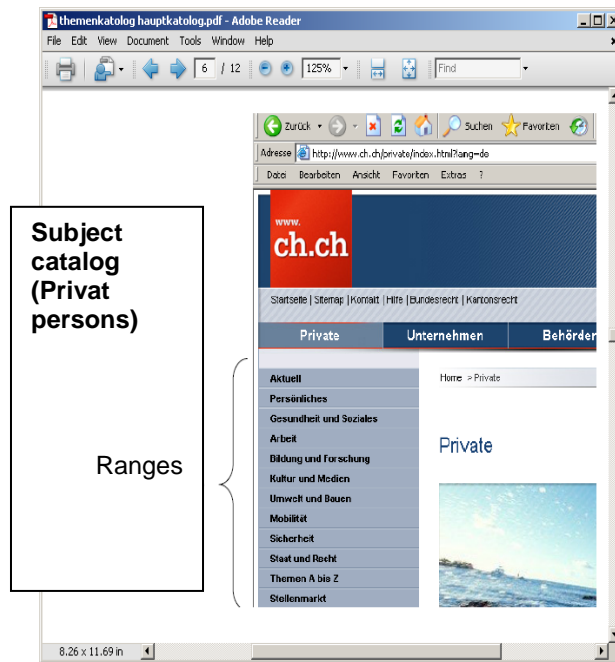


Figure 7: Subject Catalog (Private Persons

– Example for conversion „Groups“ on the www.ch.ch

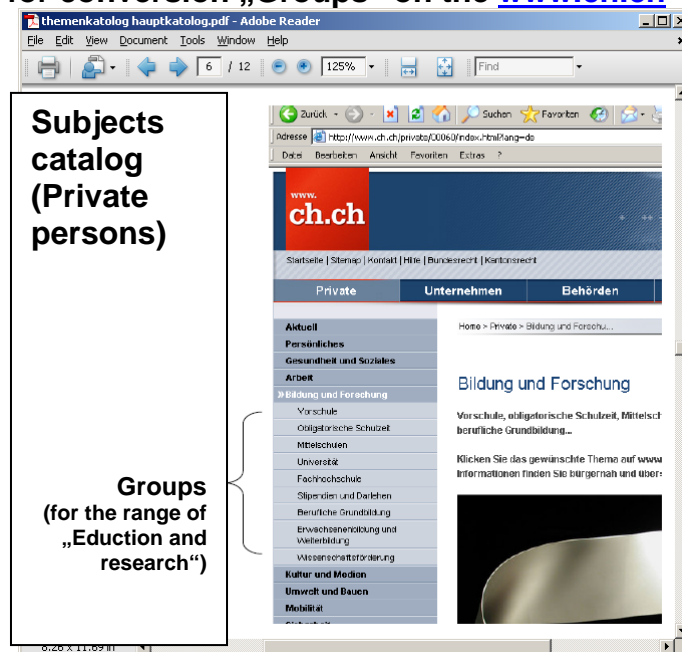


Figure 8: Groups (fort he range of „Education and research“

10.2.4.2 Language versions

The subject catalog for private persons gathers the synonyms and descriptors assigned to the subjects and is presented in 5 languages German (eCH-0049 Appendix 1-1), French (eCH-0049 Appendix 1-2), Italian (eCH-0049 Appendix 1-3), Rhaeto-Romanic (eCH-0049 Appendix 1-4) and English (eCH-0049 Appendix 1-5).

The subject catalog for enterprises descriptors assigned to the subjects and is presented in 3 languages German (eCH-0049 Appendix 2-1), French (eCH-0049 Appendix 2-2), Italian (eCH-0049 Appendix 2-3).

Number of the synonyms and descriptors may vary in each languages, depending on the individual language characteristics.

10.2.4.3 Maintaining and Actualization

The Swiss public office maintains the subject catalog of eCH and gathers the synonyms and descriptors in the languages of German, French, Italian, Romanic and English. Change- and amendment proposals can be delivered to the Swiss public office ccweb@bk.admin.ch.

The Swiss public office secures further the consistence of the public services inventory [eCH-0015] with the new versions. The subject catalog will be actualized yearly. If necessity occurs, the actualization is also possible within a shorter period of time.

10.3 E-Gesundheit-Portal Strategy

The Internet as a platform enables information flows that aren't bound to national borders anymore. Thus citizens as well as specialists of healthcare can be supported with / are able to offer information and services regardless of governmental borders which confronts national and international jurisdiction with new challenges. Because of the fact that quality is not assured, new solutions are required in order to grant such quality.

The government is actively interested at publishing information and suggestions regarding its offers and the effects of its activities which can be understood even by not involved people. The Government is obliged by law to inform about acute health risks (e.g. seasonal caused diseases). Information regarding health issues is included in the scope of the most utilized information of the Internet. However the flow of information concerning health matters confronts many patients and their relatives with problems of selection and confidence. The opinion of experts is clear: There are too many information in the Internet which are insufficiently prepared and structured and whereof the quality is not assured.

The activity field "Online Services" includes a sector that is still growing and that is located at the intersection point of medical information, public health and e-government. A very often discussed matter is quality assurance of online information and services regarding health sector. The discussions in the EU show that access to balanced, correct and reliable information has central importance if people shall be supported by obtaining of more competence and self-determination.

The strategies of health authorities of Switzerland (federation, cantons and municipalities) and their policy of information derived from such strategies are partially designed to take aim at a superior target: strengthening individual health competence. Forasmuch preventive information and campaigns are only effective if they are understood and applicable. The activity field includes the following sections of health policy:

- Health competence and health promotion
- Prevention (diseases and major events)
- Structural and medical fundamental care

Punctually information on various channels shall be completed within the scope of "e-health" by a structured information policy. The aim is to apply a standardizing and controlling process to the offers presented to people and thus to create

convenient frame conditions. Only through the perpetual promotion of health competence citizens of the information society can be enabled to decide in a self-responsible manner regarding health issues and to use the health system in an efficient way if necessary.

Therefore the following common principle shall be valid for health authorities of the levels federation, cantons and municipalities: to inform and to communicate. In this regard the priority is to submit information and knowledge of health issues. The farther the digitalization of health proceeds, the more important become information, suggestions or instructions for handling personal and medical data.

Lacking health competence increases health costs, because people behave less health promoting and preventive and treatments can be carried out less target-oriented. When considering assessments from the USA and applying them to Switzerland, we'll see that approximately three percent of health costs are resulting from insufficient health competence. The equivalent of this percentage in the obligatory health insurance is approximately a sum of 700 million Swiss Francs. The equivalent within the whole health section is approximately 1.5 billion Swiss Francs.

Under these circumstances it is necessary to clear which authorities of federation, cantons and municipalities have to provide which health information. Mainly the ability of the citizens to make decisions regarding their own health shall be supported. Some examples of information provided by authorities:

- Addresses, Registries, Service Providers, Authority's roles within the health system
- Patients' rights
- Health protection, prevention
- Handling of health crisis's
- Diseases; possible links to portals of health institutions or professional providers which are recommendable under consideration of their quality.

Since Internet came into existence in the nineties, the possibilities of online offers concerning health developed continuously.

- *Information:* At the beginning electronically access to relevant information concerning health or diseases had priority (e.g. Websites regarding diseases, guidelines).
- *Transaction:* News of health services are often sent in electronic form (e.g. e-Mail, documents).
- *Interaction:* Other sectors already enable their customers to access their systems independently (e.g. online bookings in the travel sectors)
- *Providing of Service:* Services which are provided over the Internet and by phone routinely are still exceptions concerning health services (e.g. Tele-consultation, Tele-monitoring).

The development of the patients' files requires citizens' involvement at this early stage. Authorities and actors of health supply shall provide them with important information. The development of these possibilities of communication requires a strategic proceeding and fundamental considerations concerning the handling of health information.

The European Union made available a new health portal in May 2006 (health.europe.eu). This portal was the European Commission's reaction to the problem, that citizens are confronted with thousands of mostly complex Internet-pages concerning health issues. The portal contains international information on

EU level. However it is linked to the Internet pages of the member states. Publishing exact and updated information is the aim. But the Commission does not undertake responsibility for the content. With this solution the EU found a pragmatic way to provide Europeans easy access to comprehensive information concerning initiatives and programs about public health. The issues are carried together through keywords entered by the users (“my health”, “my way of life”, “my environment”, “health problems” etc.).

Targets

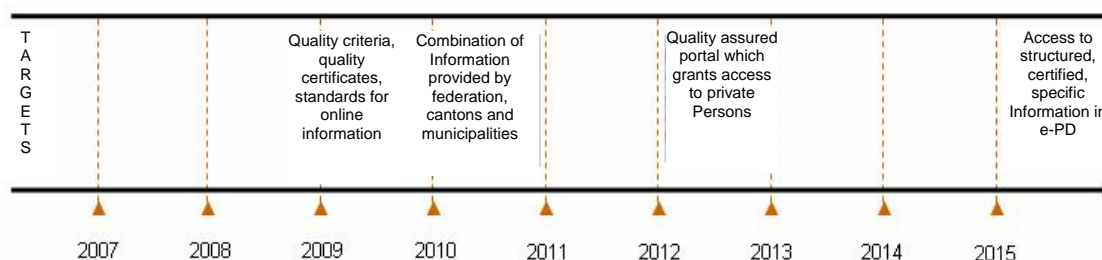


Figure 9: Target of the E-Health Project

- **Target B1:** Till end of 2009 it will be checked out which quality standards in regard of combining health related online information will be implemented in Switzerland

In Switzerland you can find a lot of health related online information partially or entirely operated and financed by authorities. Federation, cantons and municipalities are obliged to make such contents easy and directly to access and to make them of good quality. Therefore combining information and establishing quality assurance makes sense. At the same time it is a priority that the contents' graphics and arrangements have to cover people's requirements.

The following examples for quality certificates (“Trust Marks”) are already implemented in the scope of quality assurance:

- HON Code <<http://www.hon.ch/>>
- SPQA <<http://www.spqa.ch/>>
- MedPICS (formerly MedCERTAIN) <<http://www.medcertain.org/>>
- Communication of the EU Commission (KOM(2002)667) e-Europe 2002: Quality Criteria for Websites Regarding Health Services”
- Work Group c-CH: “Quality of medical and health related information in the Internet”

At the beginning it has to be checked out to what extent these procedures can be used as instruments for evaluating online information provided by authorities. At the same time it can be cleared whether the same procedures should be suggested to private providers, too. Thus the user would be enabled to evaluate the quality of information easier and to determine differences between e.g. editorial contents and hidden commercials. However the government won't have any influence to the quality of information provided over the Internet.

- **Target B 2:** Till end of 2010 health related online information provided by federation, cantons and municipalities as well as international organizations will be accessed over a common health portal

The procedure must own pragmatic qualities. It mustn't aim to provide a major portal. Existing issues of federation, cantons and municipalities as well as international organizations (e.g. WHO, EU, OECD) should be combined and linked together. The Website www.ch.ch and the Federal Bureau of Computer Science and Telecommunication (BIT) as its operator provide a national platform that can be used as a health portal only. At the moment its not yet clear whether this step will just link existing issues or also consider already possible quality standards out of the scope of Target B1.

- **Target B3:** Till end of 2012 the information provided in the health portal will be quality assured. Private providers may join the portal.

In order to realize a broad online content it makes sense to integrate private providers' information into the health portal. This is only possible, when the authorities and private providers follow obligatory quality standards.

- **Target B4:** Till 2015 citizens' safe access to their own electronic patient's file will be provided over the health portal with the possibility to query structured and specific information.

Access to patient's file must be of high quality. This "online entry" shall be equipped with validated information which may be specific accordingly to the diseases' groupings (e.g. chronic diseases, known risk factors). Non-ethic commercial messages aren't allowed at this place. An accessing structure with three levels can be established:

- **Level 1 (public area):** Common health advises and access to health authorities and providers
- **Level 2 (personalized area):** Health advises accordingly to individual profile. That means combination with typological relevant information (e.g. prevention).
- **Level 3 (safe access):** Access to personal data.

10.4 *E-Gesundheit-Portal Standard*

10.4.1 Quality Standard

Standardization of quality should not be let to private actors only. The government has to play an active role and has to control in particular whether its online offers are quality assured. Another issue which must be cleared is the following question: Is the government –as a superior instance- obliged to process accreditation in order to ensure the quality of the quality seals given for offered medical products and services? Nevertheless the government won't effect the organization of medical and health-related information in the Internet. At the most it will post its suggestions.

Until end of 2008 it will be tested whether its necessary to establish a certification system and create specific suggestions for quality criteria, quality seals and standards concerning online offers. At least legal adaptations have to be started in this regard.

Switzerland would be used for quality assurance, the EU, as an example.

10.4.1.1 Transparency of Health Related Content

- Transparency of the health related objectives of the provider of the information, including the purpose and objective of content provision, should be clearly defined and stated.
- Where advice or information on particular conditions, lifestyles or medications is given, funding from producers of products thereby implicitly or explicitly endorsed should be transparent to the site user.

- Existing Community legislation already contains information and transparency requirements. For example Article 5 of Directive 2000/ 31/ EC on electronic commerce concerns the general information to be provided by an Information Society Services provider; Article 6 of Directive 2000/ 31 which concerns additional information to be provided in the case of commercial communications which are part of or constitute an information society service and Article 10 of Directive 95/ 46/ EC on the protection of individuals with regard to the processing of personal data and on the free movement of such data also applies.

10.4.1.2 Authority of Health Related Content Providers

- Where a policy of using only accredited medical professionals to generate content is adopted, this should be clearly stated and adhered to.
- Where a mixed group of content providers is used, (medical professionals, journalists, personal testimony, etc) the category of content provider of each item should be clearly identifiable.
- Where scientific evidence is cited, the sources of such evidence should be easily identifiable to the user.
- Where a medicinal product is recommended, EU legislation on Medicinal Product advertising should be adhered to, and any documents authorised by a regulatory authority should be made available to the site user.
- Where advice is offered, the site provider should always include a reminder that internet based advice, whether personalised or not, cannot replace a face to face consultation with a healthcare practitioner.

10.4.1.3 Privacy and data protection of Health Data

- Where any personal information is collected and further processed by the site user, including data processing invisible to the users, the requirements of Directive 95/ 46/ EC on the protection of individuals with regard to the processing of personal data and on the free movement of such data, in particular article 8 on sensitive and health data, should be carefully assessed and full compliance assured.

10.4.1.4 Updating of Health Related Information

Where specific health related data are provided, the relevance of such content should be regularly verified.

10.4.1.5 Accountability for Health Related Content

Where specific health related user feedback is provided by the site, particularly where personalised medical advice is offered, every effort should be made to ensure that such advice is bona fide and that advisors are suitably qualified to offer advice.

10.4.1.6 Accessibility in Health Related Content

- Where a particular type of audience is targeted (eg children), the presentation and content of information should be appropriate to the chosen target audience.
- The use of a metadata labelling system may be used to make health data more findable. Such a system may also be used in conjunction with quality criteria to give higher ranking by search engines to those sites or pages labelled as complying with defined quality criteria.

- Apply International or European standards, wherever possible, in order to facilitate notably the interoperability between different services and the cross-border provision of web based health services.

11 Analysis of some portals in Switzerland

E-Government Portal www.ch.ch and E-Health Portal www.medizin.ch of Switzerland will be analyzed by presentation.

In this analysis will be showed if the strategy and standart been used in the reality.

12 Conclusion

What we can see today are portals aimed at directing the user's interface with electronic government on a needs-based framework. This architecture intentionally makes the interfaces for the participants of e-government and e-health sites and services unique, and often personalized, based on their distinctly different needs.

e-Health systems and services like portal combined with organizational changes and the development of new skills are key enabling tools, they can deliver significant improvements in access to care, quality of care, and the efficiency and productivity of the health sector, they can also reduce costs and improve productivity e.g. billing and record-keeping, reduction medical error, alleviation of unnecessary care and so on.

At the end of our work we have identified the following six steps for the promotion of e-government and e-Health portals

Communicate to and educate all the stakeholders, regarding the benefits of portals in improving quality of life.

Provide incentives for increased use of quality tools.

Involve all stakeholders to the development of the service to participate in the implementation of each program.

Engage in informal networking and exchange on these choices with other colleagues in other countries.

Reward use of existing tools and programs wherever possible.

Maintain regular dialogue with "all" stakeholders involved on these issues.

Nevertheless we have to consider the current cost of waste, poor quality and inefficiency that are still huge and unsustainable and slow down their development, moreover e-Health e-government have to be delivered everywhere not just in islands and silos limiting the problems caused by the digital divide showed in the past chapters!

We can also say that too many portals have been built till today. Citizens find too many points of contact with the government, which confuses them. It would be much better to integrate and offer a single entry point where possible, to avoid confusion and limit the time spent to search and use the portals.

In conclusion, e-Health and e-Government have to work together ensuring better life conditions for citizens and patients, or more generally for the entire society avoiding.

The most interesting question is the Security of E-Government Portal und E-Health Portal. The number of users of the internet is growing rapidly around the world amidst growing

concerns of security and privacy. With the advent and progress of internet security standards and technologies, the concerns are being handled. It is natural for Governmental agencies to embrace the online infrastructure to deliver content as well as services to their citizens. With the proper choice of secure technologies and adequate training and awareness, it is possible to have secure E-Government portals operating at various levels of the government.

We try find the answer of the question; What's the content of the activity field "Online Services" within the strategy of *eHealth*?

The activity field „Online Services“ covers a section which is still expanding and which is located at the intersection point of medical information, public health and e-government. A very often discussed matter is the issue of quality assurance of online data and services within the scope of health services. The discussions in the EU show us that access to well-balanced, correct and reliable information has essential importance during supporting people during its attempt to gain more competence and self-determination

The othe one is; How is it possible to ensure quality assurance within online information and services in health issues?

Until end of 2008 it will be tested whether its necessary to establish a certification system and create specific suggestions for quality criteria, quality seals and standards concerning online offers. At least legal adaptations have to be started in this regard (*please also see "Online Services"*)

And; What role must play the government regarding quality assurance of online services?

Standardization of quality should not be let to private actors only. The government has to play an active role and has to control in particular whether its online offers are quality assured. Another issue which must be cleared is the following question: Is the government –as a superior instance- obliged to process accreditation in order to ensure the quality of the quality seals given for offered medical products and services? Nevertheless the government won't effect the organization of medical and health-related information in the Internet. At the most it will post its suggestions.

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