HUNGARIAN INFORMATION SOCIETY STRATEGY

Health and Social Services

Ministry of Health, Social and Family Affairs

Republic of Hungary

Hungarian Information Society Strategy
Health and Social Services

Drafted on the basis of the
'Recommendation of the Ministry of Informatics and Communication
on the development of sectoral component strategies
for an information society'

Information Strategy Task Force of
MoHSFA and MoIC

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Executive summary

The Government of the Republic of Hungary provides for the tasks of the individual sectors in relation to the development of the Hungarian Information Society Strategy (HISS) in Decision 1214/2002 of 28th December 2002.

Of the strategic development fields identified in the HISS, the support and development of health and social care by using Information Technology tools and methods (*e*Health) are of key importance.

Therefore, the Health and Social Information Committee of the Ministry of Health, Social and Family Affairs (MoHSFA) established the sectoral Information Strategy Task Force to develop the **Health Care and Social Sector Information Strategy** in line with the recommendations made by the Ministry of Informatics and Communication.

The strategy identifies directions for leading health care and social care from the present situation to an information society; it presents **the benefits of an information society** for the players in the sector; and it introduces the added value of implementing a knowledge-based health care system. It sets targets and enumerates the key tasks that flow from the restructuring process. In addition to identifying the long-term tasks, the strategy also states specific medium-term tasks for the period of 2004-2006.

The strategic concept is **to improve the availability of information to, and the communication situation of, individuals and the community** and, thereby, to enhance quality of life for the public. At the same time, possessing the information, knowledge and skills related to health, disease and social situation, i.e. the **information assets**, in turn, helps to enhance the operational efficiency of the sector.

The strategic approach is to build upon high health culture and social security, on evidence-based medicine, and funding that supports quality care and helps manage health insurance risks. The strategy promotes the implementation of transparent social and health care services, and customer-friendly administration in health and social care in Hungary.

The medium-term tasks derived from the strategy relate to the implementation of six major development initiatives by 2006:

– Implement a comprehensive health and social monitoring system meeting the information demands.

– Establish of an online health and social information service (health and social care Internet portal).

– Regional integrated pilot information systems for healthcare providers.

– Telephone and Internet based health and social care advice system.

– Modernise of health and social information systems, and national institutes.

– Implement fundations of *e*Commerce for health services.

Another 16 medium-term tasks are aimed at putting in place the prerequisites for implementing the above targets.

The budget planned for implementing the of medium-term tasks during the period of 2004–2006 is *11,708 million HUF*, including:

– EU support under the National Development Plan (NDP):   *4,091 million HUF*

– MoHSFA's own funds under the NDP: *1,157 million HUF**

– Regional local funds under the NDP: *202 million HUF*

– Private capital: *233 million HUF*

– Central funds: *6,215 million HUF†‡*

* 284 million HUF in 2004

† Of which about 1800 million HUF comes from the MoIC Chapter, based on MoHSFA's proposal.

‡ 2747 million HUF in 2004

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Background and context

1.1 Health and social policy context

Summary

The health, social and family affairs administration's restructuring programmes are aimed at enhancing the efficiency and quality of care, and at improving the information position of patients and the healthy public. In this respect the preferred systems and solutions are evidence-based and are to improve access to information, and to improve the information flow at all points of the care provison system. Information Technology tools and the related opportunities must also be exploited as a means of promoting equal opportunities and reducing social differences.

Healthcare

The Government approved the Minister's report on restructuring healthcare and the related implementation schedule. This paper defines the key targets of the Government programme:

− Improve quality of life through health promotion.

− Enhance the equity of the healthcare system by reducing regional inequalities and by increasing accessability of services (i.e. in care, and in financial, social and mental-terms).

− Increase consistency, and enhance accountability of professional care through quality management; disseminate technologies;

− Improve the efficiency of the care provision (by improving allocation efficiency and technical efficiency in parallel) and to that end, design, implement and organise regionalised care based on the principle of progressive care.

− Restructure the care provision system to make it 'patient friendly', i.e. improve the conditions of care, grant patients more choice, and make patients more informed.

The key tools for implementing the above targets include:

1. Implementation of the National Public Health Programme approved by Parliament.

2. The Consolidation and Development Programme linked to the regional restructuring of the healthcare system.

   This programme package implements a development environment in a complex way, by creating regional care planning, policy development, and the related institutional system. This development environment ensures balanced access to healthcare, uniform technical standards, including the replacement of obsolete key equipment (for ambulance and emergency services, diagnostics and oncological therapy) and the installation of such equipment where necessary. The programme integrates various funds, including EU funds, national development funds, ministerial development funds, municipal funds, and private investment for public purposes (Public Private Partnership programmes).

The integration of the health and social care provision systems, and ensuring co-operation between organisations and funding arrangements are key tasks in restructuring the care provision system.

3. The Human Resources programme group includes improved recognition for staff in the sector (thereby reducing the attractiveness of job-shifting), the simplification of professional training, and support for IT-based distance learning in ongoing continued training.

4. The financing reform is aimed at reinforcing the current public funding system and improving its efficiency. In order to enhance the equity of the system, we wish to promote private funding arrangements. The Government expects this initiative to help reduce gratuities and distribute the public burden more equally.

5. Information and Communication Technology (ICT) development: The key golas of ICT development are to propagate the application of knowledge-based solutions in therapy and in strategic planning at the Government and regional levels, to improve the efficiency and quality of healthcare, and to promote uniform healthcare services. Other directions for action include improving the level of information available to patients and the healthy public, and the application of ICT solutions in health improvement and patient information.

Social care

The Government programme focuses on the principle of creating opportunities as the fundamental approach to support the activities of the social sector. By that token, the Government wishes to facilitate closer co-operation between the social sector and the other sectors of governance, to strengthen the social functions in the educational system in order to prevent the development of inequalities or reduce them at an early stage, and to create stronger ties between social services and the sectors supporting social inclusion (such as employment and healthcare).

According to the targets stated in the programme, the Government regards the social care provision system as a support tool to promote citizens' autonomy and enhance human dignity, i.e. a tool that is broadly available and provides services with a human focus to facilitate social inclusion and reintegration. Through the concerted development of various forms of care and services, it seeks to help the citizens to lead a full independent life supported by those services, and to take their destiny in their own hand.

The IT development of the social sector can contribute to the achievement of the Government's strategic targets by improving the conditions of case administration, flow information, and access to information at all points of the care provision system.

It is of key importance for the social sector to contribute through its means to the reduction of social differences that result from the propagation of digital culture and Information Technology, to improve access to the assets of information society, and to help the socially and financially disadvantaged groups.

1.2
Information needs and position of key players

Summary | *The information strategy concerns health and social data aquisition, storage, transfer and access. Moreover, it is about values, creating a new communication environment, thus providing new opportunities for all players in the field. It is crucial to understand the nature of information and communication needs all of the key players and to provide adequate answers for the emerging demands.*

The system of health and social care experienced major changes over the past decade. New values, needs and demands emerged in society. Most of all, the demand for personal autonomy led to new attitudes towards informed decisions relating personal health and / or wellbeing. Another consequence of the general societal changes is the demand for transparency of governmental decisions and services. Citizens are now expecting the authorities to set up and operate consumer-friendly administration. Consumerism as a behavioural pattern brought up several issues in healthcare, i.e.: the concepts of the informed patient, health consciousness, and a quality mindset. The main question: how can these issues be addressed and changes are implemented in such a huge system as the health and social care[1] as far as the information is concerned.

This strategy distinguishes among six key players in health and social care as far as their information needs and interests are concerned: (1) the general public, (2) service providers, (3) decision-makers, (4) educational and research institutions, scientific organisations, (5) vendors and business organisations, (6) mass media and the civil society.

ISSUES IN HEALTH AND SOCIAL CARE

- There is a growing demand for improving the quality of life for people with disabilities.
- Demand for a high quality, fair (i.e. equally accessible to all social groups), cost efficient and accountable care.
- People receiving care want to be involved in care-related decisions as partners.
- Major leaps can be expected in the development of medicine and medical technologies.
- The emergence of home nursing has changed the perception of the role of nursing. The importance of information transfer between nursing and therapy has increased.
- The interventions requiring sophisticated knowledge and know-how, and the propagation of teamwork have put the use of health information and the application of ICT in care in the forefront.
- Organisations outside healthcare also get involved with patient care, and the intersectoral approach becomes general in order to achieve the public health targets.

The general public

Demands for communication grew enormously in the past decade. The availability of new communication tools resulted in a dramatic rise in communication volumes throughout society. The expansion of telephony and lately mobile telephony and the Internet changed the

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[1] Further details on the Hungarian health care system can be found in the study "Health Care Systems in Transition" by the WHO European Observatory on Health Care Systems.

communication habits of the public, including changes in the peoples' relation to the health information available.

It is important to state that in the context of this strategy, improving the communication position of the public does not mean only to improve access to health data stored about a particular patient or promote the development of consumer pages on the Internet. Moreover the implementation of this strategy is concerned with not only creating a new information environment where citizens can make informed decisions about their own health but also where means of electronic transactions are established to ease the everyday interactions with health or social service providers and the authorities (*e*Government).

Health service providers and care delivery organisations

Information systems in healthcare have an extensive history in Hungary. Yet, the only example of a national standardised electronic communication so far is the electronic reporting of reimbursement data to the NHIFA, a system that has been in operation for nearly a decade. This system allowed to define a standard data content for the different forms of patient care (MBDS[2]) and established a national code set of medical interventions. However, due to simplification measures, the current practice does not allow the rich and true-to-life representation of the medical content.

Due to the above reasons, the data structure of many patient administration systems hardly provides any more than what is mandatory by law, and the reimbursement-centred changes in the central code systems have a major impact on the medical content of patient records, occasionally causing major distortions and generally truncating the medical content.

> **A FEW FEATURES OF HEALTHCARE AND ICT IN HUNGARY:**
> - poor process control
> - attempts to implement electronic patient records
> - development driven by reporting requirements set by the authorities
> - low integration levels
> - isolated developments
> - absence of knowledge-based systems
> - absence of care management systems
> - insufficient resources for ongoing development, innovation, regulation and funding

It is also typical of the sector that the documentation of patient care episodes is supported by separate subsystems. Therefore, the application integration is patchy and often even the traditionally stand-alone diagnostic systems are not integrated yet (general chemistry and microbiology laboratories). The specialist functions and data contents that are not covered with the admininstrative (transactional) systems are mostly covered by custom applications.

The same applies to departmental systems, such as the pharmacy and financial management modules. There is no computer support for nursing care activities, either. In most of the cases, the actual costs of care cannot be allocated to the client and the expenditures of the care provider do not combine automatically to make up a patient bill including all cost elements.

The result of the above is that the information generated at various levels cannot encompass the full spectrum of care. For many systems, even the aggregation of available data into management information that goes beyond a case mix analysis and other listing functions represents a problem.

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[2] Minimum Basic Data Set

Development projects typically do not implement the desired platform-independent and vendor-independent solutions. Co-operation with the software vendors is hindered by the absence of mutually accepted standards and the frequent changes in the legal environment. Consequently, product upgrades are not seamless, which may give rise to disputes and impaired trust in business relations.

National projects were launched in the past to remedy the typical situation outlined above, such as the Hospital Management Information Support System (HMISS) funded by the World Bank, which entered the implementation stage in 1998. The projects covered 15% of inpatient care (based on the number of hospital beds) opened the markets to complex IT systems, and contributed to the enhancement of the know-how of IT experts and users. However, the application of results has been limited by the absence of central resources for further development – in terms of the internal integration of the systems implemented, and the connectivity of additional sites.

Electronic communication between healthcare providers remains unresolved, which currently disables the implementation of a uniform ePatientRecord. The importance of regulation is highlighted by the fact that the implementation of the uniform ePatientRecord is hindered by the absence of an approved standard to ensure vendor-independent data communications between the middleware of the local systems.

Local development projects have been implemented over the past few years, achieving significant progress in the interconnection of various levels of care (e.g. hospitals and family practitioners) and in horizontal co-operation (e.g. patient administration within a group of hospitals). However, the systemic application of local development results would require a national approach ensuring coherence and efficiency.

The hardware infrastructure shows a lot of heterogeneity. Nearly two thirds (64%) of the IT assets owned by the healthcare institutions (including hardware and software) are more than three years old. This ratio is 66% for PCs and terminals, 67% for software, and 52% for mainframes, networks and accessories. The launching of a development programme would mean that two thirds of the ICT tools should be replaced, due to obsolescence.[3]

There are some institutions where the penetration of workstations is significant even by international standards. However, replacement due to depreciation is a problem for the majority of even those sites. The LAN is generally limited to just one site, and upgrades represent a problem in this field. Network interconnectivity is generally unavailable (Internet, extranet) even within an institution with multiple sites. The majority of the systems with Internet access use data communications solutions that do not ensure adequate privacy. For the above reasons, the Internet penetration of the health sector is low, so users do not have sufficient access to the information, education, and Information Technology opportunities offered by the new medium.

Operating and maintaining the IT systems in the sector represents an increasing burden for healthcare institutions. Also, sincee depreciation cost is not included in the reimbursement of operating expenses and the IT assets depreciate fast in both financial and moral terms, investing in IT is a lower priority to most healthcare providers. However, integrated IT systems in the institutions improve management and efficiency in a major way, so they are cost efficient to implement.

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[3] Source: 'The IT tools with an investment cost of above 50,000 HUF gross in the possession of the healthcare
    institutions (reporting to the Institute for Medical and Hospital Engineering)', 2001

Considering European practices, it would be acceptable for healthcare providers to spend at least 1-3% of their revenue on operating and maintaining their IT systems (European hospitals spend 1-2% of their revenue– which is about ten times that in Hungary – on IT with a life cycle management approach, while this ratio is up to 3% in university hospitals), and public health networks and health authorities have a ratio of up to 6-8%. Experiences suggest that about 25% of the total cost of ownership over a life cycle of 4-6 years may be spent to implement a system in a green-field project. Given those proportions, Hungarian healthcare institutions should spend at least 9 billion HUF[4] on IT, which would only cover the operation of existing systems for the time being.

Social services

One cannot talk about a uniform IT environment when it comes to social services. There are various IT systems in operation – or they should be in operation – at various levels of social care and in various settings. Consequently, development opportunities and desirable directions present a very varied picture, too.

The resources available for IT development may be described as favourable at the central public administration level, including the hardware environment and the users' training qualifications. However, there are major shortfalls in the information services designed to keep citizens and social work professionals up-to-date. One may refer to the recently completed Glossary of terms in social care – still in need of further maintenance and development – and the Social Care Map, which serves as a rudimentary model of a decision support system for the social sector, as notable exceptions. The opportunities of IT, *e*Government are under utilised– partly due to the absence of electronic signatures – in the administration processes related to social insurance and family benefits.

The propagation of electronic signatures is currently impeded not only by the absence of technical conditions, but also by a deficient the legal background. This is why a legal basis must be established for the use of electronic signatures in the social field.

Local governments are very diverse in terms of their office structures, social tasks, regulatory systems, and problems. Their administrative tasks (and possibilities) are determined by the size of the community. Accordingly, the local governments have extremely diverse IT environments. Some of them have highly advanced offices actually testing eGovernment solutions, while others have offices with the barest IT equipment. The advantage of social services is that it can rely on the presence of the market players driving development on the users' side, and also on the presence of software vendors. The downside, however, is that smaller communities – mostly in difficult social situations – are almost completely left out of the market-driven development process.

The IT equipment of social institutions varies widely. It is generally true that the social sector does not have institutional IT networks. IT support does not have a presence in institutional operations, so it cannot be used as a tool to regulate and standardise processes. The registers are also missing the standardisation benefits of Information Technology solutions.

The information and IT gap must receive special focus when regional development plans are elaborated for the population using social services.

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[4] Estimation is based on NHIFA performance data concerning in-kind benefits in 2001

National institutions

The former Centre for Healthcare Information - Gyógyinfok[5] of MoHSFA - was established in 1974. It served as the methodology and scientific research institute of the Ministry of Health in health information and economics. Its fundamental tasks also included data acquisition and processing of reimbursement data.

The former National Institute and Library for Health Information (Medinfo)[6] evolved out of an institution that had served as a national medical library earlier on. It started to focus on IT when the computer-based literature research systems emerged. Currently, its key task is to provide complex information about the Hungarian healthcare system, including traditional library information services, international health statistics, a knowledge centre function for the sector, the development of a Health Data Warehouse, and the implementation of authentic public electronic registers. Its organisational structure keeps changing as its tasks change. In that context, its IT unit has become stronger.

The National Health Insurance Fund Administration (NHIFA) is a central public administration organisation reporting to the Government. NHIFA is responsible for maximising the health gain of insured people and for managing health hazards by delivering and commissioning services that allow for the maintenance, restoration and improvement of health, for the compensation of wages lost temporarily or permanently, and for promoting return to work. NHIFA – as the managing body of the Health Insurance Fund – operates the health insurance system by fulfilling the fund management tasks, and actively participates in the maintenance of the contribution system, eligibility rules, and the services of the healthcare system.

NHIFA and its administrative organisation, as well as service providers collect and register the following data:

− Certification of the Social Insurance Numbers, issuance of Social Insurance Cards, and the related registration tasks.

− NHIFA signs and registers the funding contracts regarding the healthcare services as specified by law.

− NHIFA adjudicates, books and registers cash benefits.

Healthcare providers, retail pharmacies and medical device distributors maintain the registers prescribed for funding and accounting purposes regarding the patients treated, the services delivered, and medication provided. They report data under their funding contracts to NHIFA regarding the healthcare services that serve as the basis for reimbursement.

So NHIFA processes, adjudicates and analyses growing volumes of data that is also becoming increasingly important. There have been efforts for years to implement electronic data communications between the networks of NHIFA, healthcare provider and pharmacies. The development of communications between the Fund and service providers is a common interest whose realisation requires central co-ordination.

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[5] Meanwhile the Gyógyinfok has been reorganised and is now partly incorporated by NHIFA and HSRI

[6] The Medinfo has been reorganised and is now called Health Strategy Research Institute (HSRI).

Health monitoring

The collection, processing and publication of data regarding the health status of the public or the key health factors – jointly referred to as health monitoring – is an important support tool for health policy making in most developed states.

The collection of health information and operational data regarding the care delivery system in Hungary falls within the resposibility of several organisations. The key organisation in charge is the Central Statistical Office (CSO). Analysis regarding the care delivery system is undertaken by the organisation, supervised by the Ministry of Health, including NPHMOS, Centre for Healthcare Information (former Gyógyinfok) and National Institute and Library for Health Information (former Medinfo). The analysis performed by NHIFA is also becoming more and more important.

The health monitoring and reporting system in Hungary is predominantly about mandatory statistical data collection – prescribed by the Act and Statistics and the National Statistical Data Collection Program – i.e. quantitative information about various forms of care and – with a few exceptions – paper-based publication mostly in statistical tables. The system of social statistics has similar features.

In recent years – to satisfy modern requirements, i.e. a growing demand for prevalence data regarding chronic non-communicable diseases and their key factors – many new initiatives have emerged in the health monitoring field. Examples include the National Population Health Survey (OLEF2000) and the Program of Morbidity Data Collection in Family Practice (PMDCFP). Regular health surveys and data collection based on the ongoing verified reports by certain family practitioners are not part of the domestic health monitoring and reporting system yet.

One of the important developments in recent years in health monitoring has been the development of partnerships between the institutions. The examples include the Forum for Health Statistics – held twice to date – and co-operation of NPHMOS and CSO in order to improve the quality of mortality statistics, and the co-operation between NPHMOS and DE OEC School of Public Health in PMDCFP. By now most players have realised that an efficient health monitoring and reporting system can only be based on institutional co-operation with a division of tasks and collaboration.

In addition to the development of partnerships, the key directions of development include the implementation and ongoing improvement of the domestic health and social indicator system, in line with international requirements; and in that context, a redesign of data collection, with special regard to whether it is necessary and credible; the extension of analysis capacity; publication of data, information and know-how; the development of communication methods, their adaptation to the needs and absorption capacity of the target audience, as well as the development of electronic knowledge bases.

International benchmarking and analysis of the correlations between healthcare and economy are enabled by the National Health Account project, a CSO programme based on a set of indicators used by OECD.

IT in municipal social administration[7]

A survey[8] found that communities with a population of more than 5,000 use nearly full computer-based administration, but even communities with a population of 2,000-5,000 have an 80% computer penetration. In fact, the computer penetration of communities with a population of less than 2,000 shows significant improvement: while our survey conducted in June 1999 found that only 21.7% of the villages with a population of less than 2,000 had IT tools at all, this percentage grew to 59% by spring 2002.

There are custom software applications for the social administration field. However, these are mostly used in larger communities (population of more than 5,000). When considering whether a community needs to use social administration software, the size of the population and the annual administrative turnover must definitely be taken into account. For villages with a small population and low administrative turnover, it may not be necessary to use a custom application. A general office suite is likely to suffice, and the users do not have to pay a license fee in addition to the upfront investment cost. The survey conducted in 2002 found that 11% of the villages with a population of less than 2,000 that use computers actually use the MS Works application.

Scientific organisations of health informatics

One of the scientific organisations in Hungary's health informatics field, the Biomedical Section of the John von Neumann Computer Society, was established in 1968. This was among the first forums of its kind established in Europe. The international professional community recognised the achievements of Hungarian researchers at an early stage, which is one of the reasons why this organisation became a member of the international organisation (International Medical Informatics Association, IMIA) and the European organisation in this field (European Federation for Medical Informatics, EFMI). The other scientific forum in Hungary, the Hungarian Medical Informatics Association, was established in the early 90s, and has assumed a major role in the modernisation of the IT field. The two associations have held their annual conferences in turns since the 1980s, with 100-150 participants. These events have become the scientific forums of the health informatics field in a narrow sense (Neumann Colloquia and HMIA Seminars). In addition to those organisations, training and valuable workshops take place in some universities. The Section of Medical Sciences of the Hungarian Academy of Sciences has established a committee (Committee of Medical Informatics). The Committee evaluates the status and progress of the scientific and educational aspects of the informatics methodologies supporting medical research. There are also some technical and scientific associations dealing with borderline domains (e.g. MATE Medical Engineering Department). Unfortunately, however, the values of scientific and training organisations do not receive recognition, one reason for which is the absence of a policy concept.

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[7] Based on Éva Kőnig – Zsuzsanna Nemes: A helyi szociális igazgatás működési feltételei (Operating Conditions for Local Social Administration). In: Edit Landau – László Ulicska (ed.): Szociális–igazgatás–szerkezet (Social Administration Structure) SZOFA Foundation, Debrecen, 2003.

[8] Based on a survey conducted by the MoHSFA Social Administration Pilot Site project in 2002

Vendors and business organisations

An information society offers new opportunities for the business world. In this context, the information strategy is to address creating the foundations for *e*Commerce in healthcare. This means the establishment of *e*Commerce standards, data communication standards, and legal and technical environments for secure transactions. Another important area is supporting fair competition by providing unambiguous information on bidding. Public Private Partnership (PPP) programmes are encouraged as far as the infrastructural developments are concerned.

The increased use of ICT tools and solutions already has led to new business models suggesting changes in partnerships between the vendor and the customer. In this respect, the implementation of the information strategy will enhance the value-added type services. New market segments will open, such as online content provision or knowledge-based solutions. The use of standards should increase the interoperability of systems and promote vendor independent solutions. The successful implementation of this strategy also means attracting investors to information and knowledge industry in health and social care.

Mass media and civil society

Health and social matters are now valued and addressed in the mass media and on the Internet in Hungary. Approximately one third of all content on the Internet is believed to be health related. Consumer pages promoting health, patients' organisation pages or pages for disadvantaged groups are more and more commonly found on the net. However, the value of Internet based information is low, and opportunities are underutilised due to low Internet penetration levels, computer illiteracy and expensive access. One can state that telephony and the mass media offer more opportunities to the average citizen than the Internet does at present.

It is important to recognise that mass media has the potential to communicate health-related messages to the public. This strategy is about finding new means of increasing the publicity and transparency of information broadcasting so those messages regarding health and social reform will reach the targeted groups undistorted. In addition, this can help to reach consensus when it comes to implementing changes. National initiatives like screening programmes (e.g.: breast cancer screening) or health promotion programmes and campaigns (e.g.: smoking cessation) can all profit from building partnerships with the mass media.

Democratisation of the country also led to the establishment of different non-governmental organisations (NGOs): associations, societies, foundations etc., commonly referred as civil society. The rapid growth of NGOs indicates the increased interest assertion of the communities. Many of the civil organisations have direct political interests. Values representing NGOs like enthusiasm, the ability to network, goal orientation can not be underestimated in an information society. Unfortunately, not all of these organisations are have the appropriate information resources in Hungary to fully accomplish their operational goals. For instance, patient organisations often lack access to statistical, and epidemiological (morbidity) data supporting planning and monitoring.

The reasons for the scarcity of information are those that are commonly referred to as the information trap: Expensive Internet rates limit access to valuable information contents. The subscription to content provision is usually expensive. Language barriers also contribute to isolation. Interpretation of available information often requires professional skills. This information strategy aims to contribute to an improved information position of the NGOs, thus supporting the successful participation of the NGOs in the information society. Means of

support include improved representation of the patient organisations and disadvantaged people on the Internet, providing access to important knowledge sources (health data warehouse). The beneficiaries of these arrangements should receive appropriate training and or guidance to be able to use the information. It is important to elaborate a communication strategy that would cover the above mentioned issues. The communication strategy would provide a framework to ensure equal opportunities in communication for all the key players.

1.3
SWOT analysis

Summary *This chapter describes the strengths, weaknesses, opportunities and threats regarding the implementation of the information strategy. This comprehensive list identifes the key points, long-term goals, and immediate tasks in the strategy.*

STRENGTHS

- The Government is committed to the implementation of the *e*Government and *e*Health initiatives.

- There are examples of successfully implemented nationwide IT projects (HMISS, Phare) R&D projects (IKTA), EU IT/R&D projects (FP4 and 5) and one may build on those experiences.

- There are dedicated experts and research facilities committed to IT development in the sector.

- National databases and registries have been developed.

- The harmonisation of activities of top data acquisition and distribution organisations has started, along with the modernisation of statistical data collection of health related data.

- Electronic data reporting systems (for statistics and service data) have been established in healthcare.

WEAKNESSES

- Funding shortages limit the evolution of *e*Government and *e*Health.

- Lack of properly qualified experts to implement and operate the information society infrastructure may hamper continuity of further developments.

- R&D is weakened by the shortage of funding. The sustainability of R&D projects is unresolved, and the implementation of technologies so developed is not managed.

- Information Technology has low prestige among care providers. Technology transfer and take-up is not supported.

- Systems are typically isolated and outdated, lacking management support facilities.

- Standards for data communications – especially middleware related– have only been naturalised in part.

- There are major backlogs in the implementation of knowledge representation tools and ontologies (glossaries), i.e. the building blocks of knowledge-based solutions.

- The data security and data management of existing information systems is unsatisfactory.

- Hungary has not developed a comprehensive health monitoring and reporting system/programme.

- Hungarian on-line publishing has a weak basis, and access to foreign subscription-based content provision is limited.

- Means of health related online information services for the general public are not established.

- Information and Communication Technology opportunities are under-utilised in education. Disadvantaged people fall behind already in primary school.

- The availability of ICT tools to the social sector is low, as is the preparedness of human resources.

- The social administration is struggling with severe IT funding shortages.

- Electronic access to social services has not been implemented.

OPPORTUNITIES

- Accession to the European Union will drive change. Our membership may help enhance the funding available for developing the information infrastructure and expanding access. Accession may also help adopt and utilise technology in the sector.

- The Government intends to support the development of information infrastructure and make it more broadly accessible.

- We may exploit the opportunities for late-comers in eEconomy, standardisation and the development of a regulatory environment.

- There are good international examples of adopting and exploiting *e*Government.

- Internationally approved data communications standards can be implemented.

- Health information may be placed in the context of information and knowledge management, as opposed to a computing approach.

- Equal opportunities may be enabled.

- The general development of ICT:

  - It helps achieve the critical volume of public and institutional needs and demand to emerge as solvent demand vis-à-vis the service providers;

  - It helps increase the application requirements and the acceptance of IT tools on the service provider side;

  - It will result in affordable prices and price/throughput ratios in communications, which will clear the obstacles to the proliferation of network solutions.

- The PHARE-surveillance system to be implemented in 2003 may be linked to its EU counterpart (system of communicable diseases).

- The market for municipal administration systems is a well-functioning IT market.

- Greater emphasis on combating social exclusion.

THREATS

- The crisis and shortage of capital in the sector impede the expansion of access to information channels.

- The underdeveloped nature of information infrastructures will lead to further gaps in the other segments of an information society.

- Competition and related rivalry with other – also underfunded – fields (such as pharmaceutical procurement) for funding.

- The sector is not prepared for accession (in terms of the institutions, know-how, human resources, and regulation) so the EU funds available may not be utilised.

- The absence of proper funding may jeopardise efforts to keep the research network in the lead at a European level. Hungary's R&D activity may suffer a setback due to the shortage of funding.

- The poor and excluded groups do not have access to IT, so the digital divide will continue to grow.

- The implementation of systems to ensure efficient data management may fail.

- Attempts to make the players in the health/social care provision system active participants in innovation may fail.

- Too little care (and money) is used to train experts: insufficient training perpetuates the bottleneck of experts and hampers applications.

- Development is over-centralised (e.g. not regionally implemented).

- Results may fail to capture attention unless they are designed to cover the users' actual requirements.

- Efforts to convince the business community about the benefits of interconnecting systems based on standard applications fail.

- Due to the absence of a modern attitude or because of focus on IT, we implement development that is not utilised or little used (e.g. because there is a shortage of experts).

- Absence of co-ordination, and co-operation; conflicts of interest between the key players in the multi-player sector.

- Changing the systems that take care of funding and medical tasks with increasing complexity will be ever more difficult, and amending the legislation will require an ever-greater effort.

1.4
Legal environment

Summary   *There is a complex legal environment regulating health data management, an environment in which direct and indirect legislation may apply at various levels in combination. It holds generally true for legislation concerning the data management in the social sector that it does not take into account the possibility that data may be stored electronically.*

Health sector

There is a complex legal environment regulating the handling of health data, an environment in which direct and indirect legislation may apply at various levels in combination.

The following is a description of the key elements in this environment, followed by a list of highlighted areas where progress seems important.

Acts:

− Act LXIII of 1992 on the protection of personal data and the publicity of data of public interest, and

− Act XLVII of 1997 on the handling and protection of health data and related personal data.

Mandatory data reporting − indirectly involving the data management and the applicable provisions − is regulated by:

− NSDCP,

− the Health Act,

− the Statistics Act,

− the applicable funding regulations,

− the annual NHIFA budget,

− the acts and regulations prescribing data collection and storage regarding the operation and tasks of NPHMOS,

− other regulations (such as Ministry of Health Decree 24 of 1999 (VII. 6.) on the reporting procedures for certain tumorous diseases).

Act XXXV of 2001 on electronic signatures must also be mentioned as an indirect piece of legislation whose implications for this field are not quite clear today.

It is generally true for the legislative situation that this issue is regulated − very appropriately − independently from the technology that is used to manage the data. In other words, the provisions do not vary depending on whether paper or an electronic data carrier is used. However, the legislation does not adequately reflect the attitude change necessitated by the propagation of electronic data management. This mainly manifests itself in focusing data protection on the physical storage of data, though the 'location of data' or 'making copies' are neither decisive concepts in digital data management, nor can they be well interpreted (e.g.

simply displaying the data on a screen requires the making of a copy). The physical location of data must be replaced by access authorisation. This would also resolve a current issue, i.e. physicians currently violate the law by taking home patient data stored in their own brains from the hospital.

It is not a technological but another attitude-related issue that the current legislation does little to define the mandatory minimum content of basic documentation – it just prescribes the data items to report. Due to the lack of clarity regarding basic documentation, some reporting requirements may occasionally contradict each-other. The imprecise regulation of basic documentation makes it to hard to improve the quality of data any further.

It is important to clarify the notion of purpose-driven use, because the current definitions cannot be interpreted strictly for IT systems. For instance, it is impossible to decide what data is necessary and what is not in case of the specialist consultation.

The use of Social Insurance Numbers is regulated by specific rules under taxative legislation with reference to purpose, and the rules need to be amended all the time. Currently, it is a difficult issue to link updated demographic databases with the Social Insurance Numbers for applications like the TB screening system. The recording of deaths in the National Cancer Register is another unresolved issue. By virtue of Ministry of Health Decree 24 of 1999, the CSO should report deaths, but the CSO does not have the Social Insurance Numbers and cannot release any information about private persons.

A more reasonable specification should be provided regarding the mandatory data preservation period. The current provision does not specify the minimum retention period, but it prescribes that patient charts and discharge summaries must be stored for exactly 30 and 50 years, respectively, which is practically unfeasible.

The data collection practices of certain professions and national institutions must be mapped and harmonised with the regulations. Much as those practices are useful from a professional point of view, they are legally unresolved.

For reasons that have to do with history, the data content (lists, codes, code systems, classifications, nomenclatures, etc.) of the annexes to the acts, regulations, and rules is inconsistent, and does not allow for the development of a uniform data model to support the regulations electronically, i.e. the *e*Government initiative.

Social care

The acts determining the operation of the social sector are as follows:

− Act III of 1993 on social administration and social provisions,

− Act XXXI of 1997 on child protection and guardian service administration,

− Act LXXXIV of 1998 on family support,

− Act XXVI of 1998 on the rights of disabled persons and their equal opportunities.

The data generated in the social sector is defined by three regulations:

− Government Decree 235 of 1997 (XII. 17.) on the personal data handled by the guardian offices, regional specialised child protection services, child welfare services, organisations

and persons providing personal care, by virtue of which the registration system 'Protecting Our Children' must be maintained.

– Government Decree 188 of 1999 (XII. 16.) on the operating authorisation of social institutions providing personal care, the village warden service, and the authorisation of social enterprises.

– Government Decree 259 of 2002 (XII. 18.) on the operating authorisation of child welfare, child protection services, and the authorisation of child welfare and child protection entrepreneurs.

Government Decree 235 of 1997 is of special importance from our point of view, as it provides uniform specifications for the official forms to be used in child protection – a unique achievement in the social sector – and thus lays the foundations for a uniform registration system. However, even this regulation fails to mention the IT implications regarding the registration and processing of data generated during the administrative procedures. (It is not by accident that such comprehensive regulations were issued for the child protection field, of all areas. This is the sector where the issues related to the handling of personal data are the most acute, and this is also where most of the sensitive data is processed, due to the significant number of administrative functions.)

It holds generally true for legislation concerning the handling of data in the social sector that it does not take into account the possibility that data may be stored electronically.

1.5
EU initiatives

Summary *The European Union is in the process of implementing four major healthcare and social programmes: the eEurope initiative approved in 2000, the 'Community action in the field of public health (2003 to 2008)', the Programme to combat poverty and social exclusion, and the Adequate and sustainable pension system initiative. The European Union offers a chance to the newly acceding countries to implement their own programmes and the programmes linked to various Community initiatives, an intention confirmed also by the Ministers' Declaration adopted during the eHealth Conference in Brussels (2003).*

1. The *e*Europe initiative

In March 2000, the European Council approved the *e*Europe initiative submitted by the Commission, which is aimed at establishing 'Europe on-line'[9]. The implementation of *e*Health and *e*Government are among the key tasks.

Using the *e*Europe initiative as a model, the accession countries adopted the *e*Europe Plus plan with similar targets in October 2000.

After reviewing the achievements of the *e*Europe 2002 action plan, the Council called on the Commission to develop the *e*Europe 2005 action plan with a focus on *e*Government, *e*Learning, *e*Health, and *e*Commerce.

"*e*Europe 2005 An Information Society for All"[10] proposes three actions in *e*Health, which are as follows:

− development projects in relation to Electronic Health Cards,

− the implementation of health information networks for public health data and responding to health hazards,

− the development of on-line healthcare services.

In early 2003, the European Commission developed a time schedule for the implementation of a European Health Card, which envisages a three-stage implementation process, including the replacement of E 111 forms granting access to the necessary care with cards at the first stage starting 1st June 2004. The Technical Sub-Committee drafted the resolutions regarding the implementation of the card and the related annexes with the technical information in its meeting on 3rd -4th June 2003. Although Hungary has asked for derogation on grounds of difficulties, the issuance of cards must start on 1st January 2006 at the latest.

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[9] eEurope An Information Society For All Communication on a Commission Initiative for the Special European Council of Lisbon, 23 and 24 March 2000

[10] Communication from the Commission to the Council, the European Parliament, the Economic and Social Committee and the Committee of the Regions: *e*Europe 2005: An information society for all, An Action Plan to be presented in view of the Sevilla European Council, 21/22 June 2002
Brussels, 28 May 2002 COM(2002) 263 final

It is important to note that the Commission issued a document regarding the quality criteria for health-related websites in 2001,[11] and it will issue a communication on the legal aspects of *e*Health in 2003.

The EU Framework Programmes are directly connected to the *e*Europe initiative; thus Framework Program 6 also provides funds indirectly for the implementation of the *e*Europe programme objectives. The *e*Europe programme focuses strongly on identifying and propagating best practices, and on utilising the achievements of R&D projects.

The advancement of digital technology offers an excellent opportunity to promote ease of access for people with disabilities (in society, economy, and in geographic and cultural terms, etc.). Technologies are available to meet their special needs, and they can help create equal opportunities in the labour market and in social involvement.

2. The EU public health programme

In September 2002, the European Parliament and the Council adopted a decision to establish the Community action in the field of public health (2003 to 2008) programme.[12] One of its key targets is to 'develop information and knowledge in order to improve the public health situation'. The priorities of the work plan for 2003 include the following:

− develop and co-ordinate the health information system,

− operate the health monitoring and reporting system,

− improve the production of public health reports and analysis papers,

− improve access to data and data sharing at the EU level, implement an EU public health portal,

− implement the *e*Health[13] programme.

*e*Health 2003 Conference

During a conference in May 2003, the relevant Ministers of EU Member States, Associated States and EFTA States expressed their commitment to making the *e*Health programmes to be implemented at the national and regional levels an integral part of the *e*Europe 2005[14] action plan. The Ministers' Declaration adopted during the conference identifies three fields:

− Improving the quality of healthcare and enhancing its efficiency through IT applications. Specifically, the Ministers highlighted the need for fast, precise, and as comprehensive as possible data interchange, and the use of secure, distributed *e*Health applications as specified in *e*Europe 2005. They also pointed out the need for IT systems capable of establishing an early diagnosis and monitoring health hazards, the need for improving communications between members of the care delivery system (to avoid the duplication and redundancy of certain tests and interventions, and to promote access to evidence-based

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[11] eEurope 2002: Quality Criteria for Health related Websites

[12] Decision No 1786/2002/Ec Of The European Parliament And Of The Council

[13] Community action in the field of public health (2003 to 2008) work plan 2003 (2003/C 62/06)

[14] COM (2002) 263

health knowledge warehouses) and actions to develop the electronic European Health Insurance Card.[15]

– Enhancing the citizens' involvement through access to high quality information. In this context, the Ministers identified the need for the health information services to focus on the citizen as an important factor, and welcomed the European Commission's Communication on the quality criteria for health-related websites[16], and also pointed out that community access points would have to be built for and made accessible to the groups hitherto excluded from Internet access.

– The development and dissemination of best practices in *e*Health. Forums must be established to share the experiences regarding the use, efficiency and effectiveness of *e*Health applications. The standards to ensure the interoperability of heterogeneous systems and services must especially be developed, preferably using open source code applications; and the indicators required for the evaluation of ICT applications must be improved.

Social care

The European Union is trying to promote the management of the most urgent social problems through political programmes targeted on certain social problem areas. Such directions for comprehensive (social) policy efforts have been identified by the Union's programmes announced in recent years, including the programme to Combat Poverty and Social Exclusion, and the Adequate and Sustainable Pension System initiative. In relation to these programmes, our country must make its achievements in the social policy areas visible and fit for evaluation from time to time, by compiling appropriate statistical indicators. The reason why one may assign special importance to this, from the point of view of developing information systems, is that these indicators may be regarded as the codified, internationally approved and standardised indicators concerning the performance of the social sector.

In order to ensure the transparency of social developments, the projects must be publicised to highlight the fact that they were funded by the EU or at the national level. Where projects supported by the Structural Funds are concerned, there are separate regulations to specify how support must be publicised.

IT development projects are required in order to ensure the planning, monitoring, follow-up, and publicity of the programmes designed to use funding under the Structural Funds. Best practices must be made available electronically, in order to propagate successful projects.

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[15] COM (2003) 73 final

[16] COM (2002) 667 final, European Parliament Decision 1786/2002 (EC), dated 23rd August 2002.).

2.
Vision

Summary   *The strategy takes into account the vision of an information society, and identifies the directions to take healthcare and social benefits from the current situation to an information society. The Government is committed to implementing clien-focused programmes reflecting the fundamental values outlined in the vision. The changes entailed by the development of an information society must be seen as new opportunities for reducing social differences and creating opportunities.*

Healthcare and social services in an information society

VISION

INDUSTRIAL SOCIETY		INFORMATION SOCIETY
concentrated	service structure	distributed
local	information space	global
disease-centred	care	patient-centred
data and information management		managing data, information and knowledge
administrative information systems	IT tasks	knowledge-based intelligent partnership systems
network	infrastructure	broadband network + GRID technology

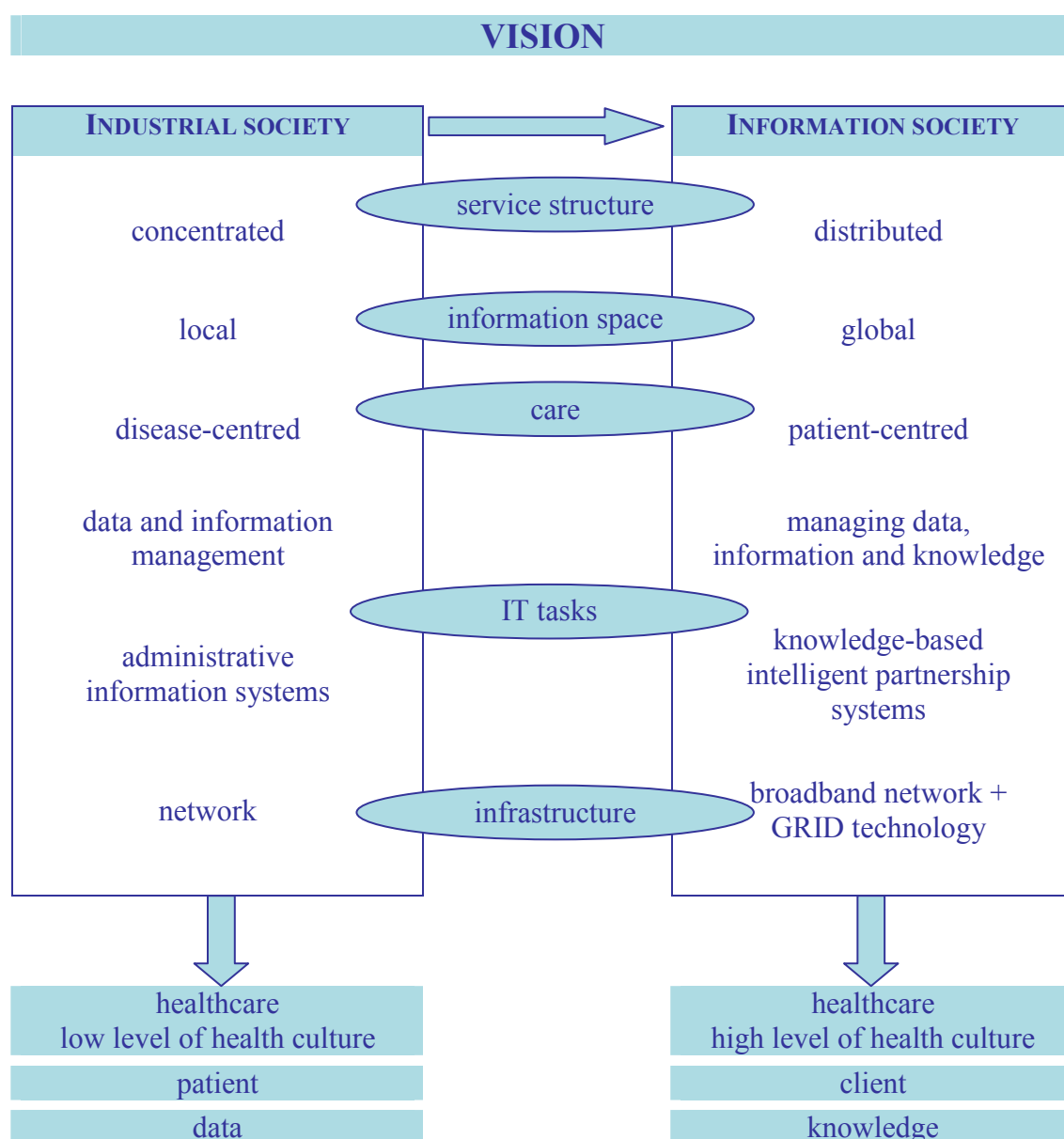| healthcare low level of health culture	healthcare high level of health culture
patient	client
data	knowledge

Figure 3.1

Our society entered a new stage of development as a result of the information revolution. This means that industrial society is being replaced by an information society. The changes have taken place less than in a decade. The application of technologies is changing communication culture, human networks, and often the prevailing values. Figure 3.1 indicates the key directions of change.

The key elements of the vision include laying the foundations for high level health culture and evidence-based medicine. One may say of the latter that the expansion of technological opportunities in combination with the explosive growth in healthcare costs at the same time widened the gap further between what is technologically feasible and what is financially affordable. The advancement of technology and genetics is causing increasing tensions in healthcare around another issue: in terms of what is technologically feasible and what is ethically acceptable.

It should also be noted that the role of specialisation has increased further in healthcare, as the biomedical knowledge doubles every 3 to 6 years, yet the ways in which knowledge is acquired have hardly changed over the past hundred years. This is what makes the support of information and knowledge management using intelligent IT tools and methods especially important.

What are the benefits of implementing the information strategy?

The information strategy focuses fundamentally on individuals and communities, and on improving their position regarding information and communication. The benefits to the players in the health and social care are presented below, with one specific example to support each case.

The public

The access to modern ICT capacity and related services, as well as digital content will help

1. Improve the information position of the public, certain social advocacy organisations and social groups through development projects implemented in patient information services and health promotion;

> **Care-free holidays even when you are pregnant**
>
> Rita is a woman of 27 in her 6th month of pregnancy, and on vacation with her husband. After a swim she suddenly feels feeble and is seized by strong spasms. She is concerned about her baby, about having to discontinue their vacation, about possibly having to go to hospital. She calls her gynaecologist and tells him about her complaints: she seems to get regular pains but no blood is showing. The physician asks her to place the CTG sensors she has brought along on her abdomen as she learned in antenatal care, then to switch on the unit and put it in remote mode. Based on her account and after evaluating the latest CTG scan, the physician reassures her that everything is all right with the baby; they can safely continue the vacation. She should only be careful not to overstrain herself, and to have some food after exercise to prevent her blood sugar level from dropping.

2. Improve the communication position of the public, certain social advocacy organisations and social groups due to the enhanced opportunities to exchange information between each-other and with the authorities;

3. Speed up administrative processes for the public and improve efficiency by enabling electronic applications for certain health and social services.

4. Improve the public's perception of safety and quality of life as a result of IT solutions that enhance the safety, quality and efficiency of medical and preventive services.

All these benefits may contribute significantly to the consolidation of equal opportunities, digital literacy, informed consumer behaviour, health-conscious public attitudes, and civil society.

Concerted emergency care

Mr. Tóth (58) is pursuing his hobby after a week of hard work. One day, while fishing, one day he feels great pain in his stomach and chest. He switches on his mobile emergency unit equipped with a Global Positioning System and sends an alarm message to the nearest ambulance unit, which presently arrives. The system simultaneously pages Mr. Tóth's cardiologist, who works in a cardiology centre. The emergency crew have access to the emergency data if necessary. Mr. Tóth is transferred to the nearest ER. Meanwhile doctor Molnár, the specialist on call at the ER, has already downloaded Mr. Tóth's medical history. After a thorough check-up, various tests, and a consult with the cardiologist over the Internet, doctor Molnár concludes that it's not a major emergency; the patient has gastroenteritis. He advises Mr. Tóth to drink a lot of liquid and have no qualms about continuing fishing. Meanwhile, Mr. Tóth's virtual patient record has been updated by the ER system and may be used to update the register at the cardiology centre, too.

Avoiding the side effects of medication

Mr. Kovács is worried about his chronic cough and decides to see his family practitioner, Dr. Szabó, about it. At the end of the visit, Dr. Szabó agrees with Mr. Kovács that he should receive new medication. The physician uses the electronic patient record system of the office to transfer the prescription to the pharmacy. However, the integrated medication alert module of the system warns her that occasional itching and spasms have been observed in patients with a similar health status as a side effect. So Dr. Szabó chooses another similarly effective drug, which Mr. Kovács can take without any risk. Meanwhile, the office administration system also displays a warning received from the manufacturer of the first drug saying that certain medical conditions represent counterindications. The system automatically scans all patient records, but it finds that none of the enrolled patients are using the drug at present. Finally, the system updates the pharmaceutical database of the integrated medication alert module.

Health and social service providers

1. The information position of public health and social institutions will improve through access to the health data warehouse, knowledge data warehouses, and digital content.

2. The communication position of public health and social institutions will improve due to the enhanced opportunities to exchange information between each-other and with the authorities.

3. The safety, quality and efficiency of medical/preventive and social services will improve due to the roll-out of authentic public electronic registers and various integrated IT solutions.

4. The ICT solutions will facilitate the implementation of actions under the Public Health Programme, and the evaluation and dissemination of the results.

5. The Hungarian service system can connect to the European electronic 'circulation'.

6. The IT qualifications and applied know-how skills of health and social experts will improve.

7. The availability and efficiency of existing specialised training systems will improve through the emergence of up-to-date forms of training.

All these benefits may significantly contribute to the foundation work for cost-efficient, evidence-based medicine, and quality-oriented patient care and social services.

Decision-makers

1. The information position of local, national, and sectoral public administration institutions will improve through

   − access to the different data and knowledge repositories and digital content

   − the availability of authentic information regarding the health and social status of the public, as well as health and social services.

2. The communication position of local, national and sectoral public administration institutions will improve through development projects that support dialogue and the exchange of information with the public and service providers.

3. Evidence-based capacity planning and need-based resource allocation will be enabled.

4. The efficiency and credibility of data reported to international organisations will improve.

5. The IT qualifications and applied know-how skills of public administration experts will improve.

All these benefits may significantly contribute to the implementation of fact-based health and social policies, eGovernment, public administration as an efficient service provider, and a transparent public sector.

> **Enhancing the NPHMOS' responsiveness**
>
> The air monitoring system of a major city measures air pollution and pollen parameters on an ongoing basis. It automatically issues an alert using a predefined protocol if the health limits or recommendations are exceeded. Based on this information, the local government and the public health authorities may decide to reinforce certain elements in the service system – e.g. by extending the opening hours of the relevant specialist services – and may use preventive measures to contain the situation, e.g. by limiting city traffic.
>
> The individual's vaccination data in the electronic patient record can also be used in many different ways. When a child is injured, the date of the latest tetanus vaccination can be downloaded remotely. Parents and family paediatricians may be reminded automatically when the next shot is due. The relevant authorities may check whether children received their required vaccines at school. The system can aggregate local vaccination data by physician, age, area, etc. to allow public health staff to monitor the proportion of people who stay away from mandatory vaccination, the number of people who get recommended vaccinations, and they can perform a comparative analysis regarding other epidemiological data.

Educational and research institutions

1. The information position of research and educational institutions will improve through access to various databases, knowledge and digital content.

2. The competitiveness of research and educational institutions will improve, along with their opportunities to participate in competitive research and development bids.

3. The number of training programmes that may be launched jointly with the institutions of European Member States will grow.

4. In addition to conventional forms of training, distance learning programmes (virtual universities) may also be launched.

All these benefits may significantly contribute to the enhancement of digital content, the development of new technologies and applications, as well as the implementation, adoption and integration of ICT systems to boost the culture of innovation and research and development in the sectors concerned.

Industrial partners

Building and improving relations between the industry and the ICT players in healthcare are of extremely important. Close co-operation may shorten the time required for ICT development and make sure that the technologies applied and project results are right on the cutting edge. The industry may play a defining role in standardisation, environmental regulations, production management, and quality management, i.e. the factors that enable higher system integration. Communication between the systems, safety, and the implementation of regional systems are equally important issues.

At the same time, co-operation allows the players in the industry to harmonise their development capacity in agreement with the ICT stakeholders in healthcare. The development projects and their results will help open a new market segment, and they will be able to shape it actively.

Other participants

As a result of ICT development and the institutions of an information society, new entrants may be expected to join the communication processes, and the existing network of contacts is likely to see radical changes. The following players merit attention in terms of how networks and contacts are likely to change in the future:

The figures in public life, media representatives, and members of civil society can be classified under the same heading from the point of view of their information requirements – they play a decisive role in the evolution of the sector. Information society can enhance the information available to the community and enable the analysis and planning components of the decision support process by delivering credible and balanced information.

3.
Goals

Summary *The information policy targets were identified in accordance with EU recommendations, the values stated in HISS, and the aims of the health and social government. The target areas can also be associated with the HISS tools and their respective purposes. It has to be stated that the ICT development is not a goal itself but rather is a means for implementing the Government's targets.*

In line with the 'tools and purposes' stated in the Hungarian Information Society Strategy (HISS) and the societal tasks regarding the implementation of *e*Health (HISS 5.2.3), the following targets have been set for the sector:

1. **To produce health and social information and knowledge**

   - Equal opportunities in access to information, i.e. ensure balanced access to information and knowledge.

   - Produce professional information and knowledge of public interest regarding health, healthcare and social services.

   - Develop electronic content services and make them available to the professional target audience.

   - Deliver information services to the public over the Internet and through call centres.

   - Develop the information content of the virtual health marketplace.

> **GOALS:**
>
> 1. To produce health and social information and knowledge
>
> 2. To provide the resources
>   - To implement an ICT environment
>   - To provide the legal, regulatory, human resources, training and cultural background
>
> 3. To do the groundwork for knowledge management in the sectors

2. **To provide the resources**

2.1 Information and Communication Technology environment

   - **Laying the foun dations for eHealth by providing the infrastructure, standards and tools:**

   - Build the infrastructure that serves as the foundation of *e*Government.

   - Expand the scope of basic registers and authentic records – and electronize those registers.

   - Develop the glossary of terms and term management technology, as well as standards for the sector.

   - Develop and naturalise standards for eApplication.

   - Improve the information management of healthcare providers; implement integrated IT systems/solutions to improve the safety, quality and efficiency of medical and preventive care.

- Lay the foundations for using the Public Key Infrastructure (PKI) in healthcare and the social sector.

- Develop the capacities required for integrating telemedicinal applications (telediagnostics and telemedicine) in solutions.

- Provide incentives for the implementation of community access solutions (such as Telehouses).

- Support the use of electronic document management systems in the sector.

2.2 Social environment

- Draft **laws and regulations** regarding various electronic services, with special regard to the regulation of data protection and access authorisation.

- Support the **development and management of human resources** in the sector.

- Expand IT **training** in healthcare and the social sector, integrate courses in the specialised training system.

- Modernise **specialised training for the sector** by implementing distance learning systems.

- Lay the foundations for **information culture**.

- Improve the funding conditions for IT development in the sector, create a funding environment that meets the European Union's standards.

3. Knowledge management

- Develop health and social status monitoring systems, harmonise them with the ongoing public health programme and international reporting obligations.

- Develop systems to monitor the quality, effectiveness and efficiency of health and social services, and harmonise them with European recommendations.

- Implement decision support systems to facilitate evidence-based professional planning for the sector.

- Promote research and development efforts, and the culture of innovation in the sector through the pilot projects implemented in the field of *e*Health.

Targets in social care

I. ICT development of the social administration system and the institutional system	
Objectives:	– explore opportunities and develop methods for *e*Government – develop administration/registration systems – operate information networks
Activities:	– develop electronic services – build infrastructure and networks
Target group:	– the professionals working in social services – the professionals working in social administration
II. Social information services	
Objectives:	– electronic customer care – produce and deliver professional information and knowledge (develop databases and knowledge bases for the social sector)
Activities:	– develop content – build infrastructure and networks
Target group:	– the public – social service staff and customers – research institutions, methodology centres
III. Expand human resources for ICT applications	
Objectives:	– enhance the IT skills and know-how of the staff working in social services – improve the IT situation of disadvantage groups
Activities:	– develop (train) human resources – implement IT access points – develop applications
Target group:	– the professionals working in social services – the professionals working in social administration – disadvantaged groups – the population of smaller, disadvantaged villages

In order to attain the targets, the stakeholders of the system must ensure the social, cultural and legal environment that guarantees the freedom and security of communication, the ICT channels and tools that enable the exchange of information with each-other, the sources of information, and also opportunities to acquire the skills and knowledge required to implement communication.

4.
Expected impact of achieving the targets

Target	Expected impact	Problems to solve

Healthcare

Target	Expected impact	Problems to solve
1. Produce and deliver information and knowledge	Develop the information framework for the modernization of healthcare. In this context, every stakeholder in healthcare will acquire new resources. The stakeholders' equal opportunities in terms of access to information will improve: – information assets of public interest will evolve in the health and social sectors; – the knowledge bases required for informed decision-making will evolve and will be maintained on an ongoing basis; – information services will evolve for the public and professionals; – the information base will evolve for the *e*Health Marketplace.	– Reduce the information deficit and ensure balanced access to the information. – Assess the existing information requirements among the public and professionals. – Collect, naturalise and disseminate quality information. – Make the stakeholders in healthcare and ICT interested in implementing the virtual marketplace.
2. Provide the resources		
2.1 Create the environment for *e*Health: provide the infrastructure, standards and tools	– The network infrastructure will evolve for the sector as part of the 'Public-Net' programme. – The appropriate communication channels and access opportunities will become available. – The professional background will evolve for the electronic personal health archive. – The background standards will evolve for electronic and virtual patient records, and other *e*Health applications. – The basic registers and authentic records will evolve and expand; and they will be digitalised.	– Create the ICT background required for using the services. – Create the standards, code systems and object models required for the interoperability of the systems and for data interchange across applications. – Implement secure communication solutions to ensure the privacy of data. – Increasing the Internet penetration.

	Target	*Expected impact*	*Problems to solve*
2.2	Social environment: legal, human resource, organisational and cultural conditions	– Uniform legal and regulatory terms and conditions will evolve for the management and storage of data, information and knowledge. – A group of trained users will evolve. – The users and commissioners of ICT solutions will be more informed. – The human and institutional conditions will evolve for the development and implementation of *e*Health applications. – The culture of bidding and innovation will evolve and ensure development. – The 'Communication Strategy' to support the information strategy will be implemented. – The implementation of the strategy will be facilitated through the involvement of private capital. – The incentive system to support the information strategy will evolve, along with motivated stakeholders. – The IT specialists will develop for the sector.	– Enhance the expert base for training and research. – Enhance the number of trainees and their qualifications. – Improve the management of information and R&D. – Strengthen information consciousness. – Enhance the understanding of the key buyers. – Create equal opportunities for disadvantaged groups.
3.	Utilise knowledge in the sector	Information and knowledge become accessible to and applicable by the stakeholders in healthcare, the information base will evolve for public administration as a service providers, since: – the healthcare and social monitoring system will operate; – the quality monitoring system will operate; – the applications to analyse and present the information, and to support decision-making are available; – the *e*Health applications reflecting the best practices will be implemented.	– Exploit the information assets developed for the sector. – Develop and propagate 'best practices' for IT in the profession. – Modernise the national health monitoring and reporting system.

Target	*Expected impact*	*Problems to solve*

Social care

	Target	Expected impact	Problems to solve
4.	**Provide the resources**		
4.1	IT development of the social administration system and the institutional system	The resources will evolve for digitalising administration and for delivering the related information services. New registration systems will develop.	– Improve opportunities and develop methods for *e*Government: modernise administration procedures. – Develop central and distributed registration systems.
4.2	Social information services, support for administration	Decision support and administration systems will operate in the public administration area of the social sector and, as a result, more substantiated decisions will be made in more transparent processes. Social implications of those decisions can be monitored. Reliable and up-to-date information systems will be available to the public and professionals. This will improve the flow of information between the staff working in social administration and vis-à-vis the public.	– Support decision-making and administrative processes in public administration. – Promote access to the information for the public.
4.3	Expand human resources for ICT applications	The stakeholders will acquire the appropriate knowledge and skills for the application of ICT, since: – special support will be available for disadvantaged groups to access and use ICT; – the training forms that are appropriate for the stakeholders will spread; – appropriate legal protection will develop for the stakeholders; – a funding system that promotes ICT penetration will evolve.	– Enhance the expert base for training and research. – Enhance the IT skills and know-how of the staff working in social services. – Provide ease of access using IT tools to allow people with disabilities to exploit IT opportunities and enhance their skills. – Support the catching up of disadvantaged groups in terms of IT.

5.
Actions

This chapter summarises the tasks and sub-tasks that flow from the strategic targets in a structure that is in line with the National Development Plan.

Summary

Programme:	*1. Produce health and social information and knowledge*
Description:	This group of tasks is aimed at preparing and implementing data/information collection, storage, processing, and access; and partly covers the development of information services and digital content.
National HISS targets and social tasks:	Equal opportunities for access to information
	Facilitate access to information and knowledge, ensure access to information of public interest
	HISS 5.2.3 Implement *e*Health
Long-term tasks:	Information services for the public
	Develop data, information and knowledge bases for service providers, and make them available
	Develop a knowledge centre for decision-makers, and make it available
	Develop the virtual health marketplace
Qualification:	National programme

Programme:	**2. Provide ICT and social resources**	
Description:	This set of tasks is partly aimed at laying the foundations/reinforcement of the ICT environment and the social environment for ICT development, as well as the human environment for training and research.	
National HISS targets and social tasks:	– Equal opportunities for access to information – Strengthen social and economic security (reinforce the service system) – Efficient public administration to deliver services – HISS 5.2.3 Implement eHealth	
	2.1 Information and Communication Technology environment	2.2 Social environment
	2.1.1 Develop the glossary of terms and a hierarchic terminology management standard	2.2.1 Regulate data protection and access authorisation
	2.1.2 Develop and naturalise uniform standards for eApplication (ePatient Records, ePrescription, etc.)	2.2.2 Regulate the data format for basic and operational documentation
		2.2.3 Regulate the data content of mandatory reports
	2.1.3 Develop a personal health archive	2.2.4 Regulate the data content of service financing
	2.1.4 Ensure Trusted Third Party (TTP) services for the players in the sector, use digital signatures in the health and social sectors	2.2.5 Support training to help the public utilise health and social information
		2.2.6 Support training to help the experts utilise health and social information
	2.1.5 Implement Internet access with appropriate bandwidth at service providers and community access points	2.2.7 Support user groups
Long-term tasks:	2.1.6 Implement the environment for socially and economically disadvantaged groups to access ICT tools	2.2.8 Create the legal and institutional environment for nationwide programme co-ordination
	2.1.7 Ensure access and develop services for people with disabilities	2.2.9 Build capacity for governance, bidding, and project management
	2.1.8 Promote the penetration of Internet-based technologies	2.2.10 Identify funding and support successful bidding
	2.1.9 Develop and upgrade institutional information systems	2.2.11 Involve the commissioners of service in development projects and the implementation of the incentive system
		2.2.12 Improve the information available to, and qualifications of, bidders and buyers in the public sector and the non-profit making sector
Qualification:	National programme	

Programme:	3. Knowledge management	
Description:	This set of tasks is aimed at laying the foundations for information management in the sector, and propagating integrated solutions in medical and preventive care in the framework of nationwide and pilot projects.	
National HISS targets and social tasks:	– Equal opportunities for access to information – Facilitate access to information and knowledge, ensure access to information of public interest – Strengthen social and economic security (reinforce the service system) – Efficient public administration to deliver services – HISS 5.2.3 Implement eHealth	
Long-term tasks:	3.1 Support evidence-based health and social policy-making	3.2 eHealth pilot projects
	3.1.1 Modernise the health monitoring and reporting system 3.1.2 Develop and institutionalise decision support and analysis capacity	Implement regional pilot projects that serve as models for the propagation of best practices
Qualification:	National programme	Pilot projects

Annex 1
Directory of laws and regulation

Acts	
Short reference	*Full title*
Act XI of 1991	Act XI of 1991 on the National Public Health and Medical Officer's Service
Act LXIII of 1992	Act LXIII of 1992 on the protection of personal data and the publicity of data of public interest
Act III of 1993	Act III of 1993 on social administration and social benefits
Act XLVI of 1993	Act XLVI of 1993 on statistics
Act XXXI of 1997	Act XXXI of 1997 on child protection and guardian service administration
Act XLVII of 1997	Act XLVII of 1997 on the management and protection of health data and related personal data
Act XXVI of 1998	Act XXVI of 1998 on the rights of disabled persons and their equal opportunities
Act LXXXIV of 1998	Act LXXXIV of 1998 on family support
Act XCVI of 1999	Act XCVI of 1999 on the amendment of Act XI of 1991 on the National Public Health and Medical Officer's Service
Act II of 2000	Act II of 2000 on independent medical practitioners' activities
Act XXXV of 2001	Act XXXV of 2001 on electronic signature
Act IX of 2002	Act IX of 2002 on the amendment of Act XXXI of 1997 on child protection and guardian service administration

Regulations	
Short reference	*Full title*
MoH-MoF Decree 8/1983	Joint MoH-MoF Decree 8/1983 (VI. 29.) on the employment of and social benefits for employees with disabilities
MoW Decree 6/1992	MoW Decree 6/1992 (III. 31) on the family practitioners' service and family paediatricians' service
Govt. Decree 235/1997	Government Decree 235 of 1997 (XII. 17.) on the personal data handled by the guardian offices, regional specialised child protection services, child welfare services, organisations and persons providing personal care
MoH Decree 24/1999	MoH Decree 24 of 1999 (VII. 6.) on the reporting to the cancer registry
Govt. Decree 188/1999	Government Decree 188 of 1999 (XII. 16.) on the operating authorisation of social institutions providing personal care, the village warden service, and the authorisation of social enterprises
Govt. Decree 259/2002	Government Decree 259 of 2002 (XII. 18.) on the operating authorisation of child welfare, child protection services, and the authorisation of child welfare and child protection entrepreneurs

Annex 2
MoHSFA and MoIC Information Strategy Task Force

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Dr. György Surján PhD

László Ulicska PhD

József Vitrai PhD

Dr. Zoltán Vokó PhD

Annex 3
Members of the Health and Social Information Committee

Chair: Dr. Zoltán Vokó PhD
Head
Department of Health Information Policy
Ministry of Health, Social and Family Affairs

In addition to MoHSFA, the organisations delegating to the Committee include: National Health Insurance Fund Administration, National Pension Payment Directorate, Office of the Chief Medical Officer, National Epidemiological Centre, National Public Health Centre, National Ambulance and Emergency Service, National Blood Supply Service, Central Statistical Office, National Institute and Library for Health Information (MEDINFO), Centre for Healthcare Information (GYÓGYINFOK), Hungarian Reitox Focal Point, National Institute for Family and Social Policy, Ministry of Informatics and Communication, Ministry of Education, Prime Minister's Office, Government Office for Informatics and Public Relations, Medical Research Council, Program Office of 'Johan Béla' National Program of the Decade of Health, College of Health Informatics, College of Preventive Medicine and Public Health, Hungarian Academy of Sciences (HAS) Informatics in Medicine Working Committee, HAS Epidemiology Working Committee, Hungarian Medical Association, Hungarian Pharmacist Chamber, Hungarian Hospital Association, National Institute of Primary Health Care, Hungarian Medical Informatics Association, Hungarian Health Telematics Association, Alliance of Social Professionals, Association for Social Administration.