SWOT Analysis on the theme
ICT for Health

(preliminary version)

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This SWOT analysis on ICT for Health, or short: e-Health, attempts to identify the main internal and external driving forces, opportunities, and obstacles that are likely determine the position the SEE region in the future RTDI scene of "e-Health".

Discussions on the limits and scope of the e-Health are still going on in many European countries, including the SEE region. Some interpretations call e-Health all types activities devoted to ICT application in the health sector including all data processing activities in hospitals and other organisations of the health sector. Others include only ICT activities related to medical interventions, health processing and interactions between patients and the medical personnel. We follow the second approach.

Although all SEE European countries face rapidly increasing health care costs, and even in those cases where the majority of health care funding comes from the government, citizens are still in short of proper healthcare (in short, "underserved" population) in several cases because of unavailability of skilled healthcare personnel or suitable facilities. The e-health paradigm shift has been supported by core value propositions that can help alleviate problems (a) by reducing costs and increasing efficiency of processes (b) by improving access to care remotely, and (c) by supporting knowledge dissemination, better health decision-making, and improved personal and community well-being.

European Union policies in the e-Health domain are largely structured at intergovernmental level. E-Health development can greatly benefit from its inclusion in the Digital Agenda for Europe, the flagship initiative under the Europe 2020 strategy for growth, including Action 76: Propose a recommendation to define a minimum common set of patient data, Action 77: Foster EU-wide standards, interoperability testing and certification of e-Health, and Action 78: Reinforce the Ambient Assisted Living (AAL) Joint Programme. E-Health is one of the central issues in programmes and analytical work of the World Health Organisation.

The ageing population is a major challenge that is magnified in some parts of the SEE region by the outward migration of younger population leaving elderly behind. Some SEE countries have developed specific e-Health strategies like Bulgaria ("Concept on E-health", 2011) and Slovakia (detailed strategy and implementation plan based on a comprehensive needs analysis for e-Health implementation). The remaining SEE countries have published more generic e-Government or Information Society policy documents that refer to an ICT strategy in the healthcare sector as one of several priorities. Almost in all SEE countries Ministries of Health are the main governmental agencies responsible for e-Health developments.

National SEE e-Health systems were developed on one side under different interpretations of EU and WHO directives and on the other side representing divergent local interests: partial ambitions of research groups, ministerial expert structures. Lobby capacities and available sources of e-Health units were/are also embedded into their national research and application environments in different forms. Therefore, according to WHO statistics, the difference between national e-Health systems in the region is dramatic, larger than in other ICT applications.

Following the EU Digital Agenda implementation for SEE member states and the "SEE Agenda+ for the development of Information Society in SEE 2007-2012" for non-member SEE countries, the region has made progress to put in place proper policies for the development of an inclusive Information Society and for strengthening innovation and investment in ICT R&D. Often neglected in policy documents is the continuous development of user skills for healthcare professionals and citizens as patients and informal carers. More importantly, specific e-Health related legal and regulatory frameworks are not fully adopted in the SEE region and challenges still remain significant, including privacy, confidentiality, liability and data protection. E-Health is currently regulated only by the general legal framework, in particular by laws on patient rights, data protection, and regulations on professional conduct. Additionally, cross-border care and patient mobility (accreditation of health professionals in provision of telemedicine or for cross-border care reimbursement) are not yet regulated at the EU level. Legal uncertainty in the e-Health domain prohibits interoperable e-Health services to be fully operational, and hence discourages investment by businesses and limits innovation adoption by users.

The SEE counties' response to the economic crisis varies, but in general the trends are austerity policies, and thus fiscal difficulties, including liquidity problems, limited access to funding, falling innovation expenditures, and decreasing employment rates are common in areas of public expenditures. In a few countries the authorities understand that with the help of e-Health systems significant improvements in cost efficiencies of the health sector can be achieved.

Recurring public budgets dedicated specifically to e-Health exist exceptionally only in Austria among the countries considered by the FORSEE project.

In terms of market size, the EU e-Health industry has leading positions in emerging fields such as personalised health systems, medical equipment, and in several sectors of integrated e-Health solutions. Diffusion of those results to the SEE e-Health sectors is unequal. Domestic leading edge e-Health R&D activities of the region are concentrated in few areas of investigations and in a few national research systems. In other areas and countries domestic efforts are concentrated on adoption of imported solutions/ applications.

E-Health offers access to better information, which can lead citizens to healthier lifestyle for the prevention of chronic diseases. The focus is on two main areas, telemedicine/ homecare and clinical information systems in the primary healthcare sector.

Companies with success potential are large companies of specialised e-Health solutions or SMEs. The presence of EU industry is relatively weak in more traditional fields related, for example, to administrative and management systems or basic computing infrastructures, and its growth potential is diverse. Major hurdles for the further development of the e-Health sector in Europe include market fragmentation (lack of economies of scale), access to funding for e-Health in an environment where health delivery is often funded through public bodies, fragmentation of public demand, which, in turn, leads to a lack of interchangeable products and services. The situation is aggravated because there is not one owner of the various health systems (organisational fragmentation) and that challenges the ability of the investors to reap the financial benefits. Expected benefits of EHR and e-prescription require strong leadership and commitment.

Historically, in rich counties, technological innovation has tended to drive healthcare costs upwards, as new, expensive products are diffused to increasingly broader segments of the patient population. E-Health might give rise an opposite trend, i.e., reducing at least some elements of healthcare costs.

The European e-Health market was estimated at EUR14.269 billion in 2008 and was projected to reach EUR15.619 million by 2012, with a compounded annual growth rate of 2.9% (Cap Gemini Consulting). The analysis confirms that over the next three years all national e-Health markets will experience some form of growth. A growing demand was identified for integrated healthcare clinical information systems in light of an increasing need for data sharing among healthcare delivery organisations. The market for telemedicine systems and applications will continue to be small but growing; suggesting that true adoption will take considerable time. Social willingness to accept e-Health is at a lower level in SEE compared to the more advanced EU countries. Even the acceptance by healthcare professionals is still weak. The "Financing e-Health" study highlighted different adoption issues affecting the socio-economic impact of e-Health services.

1 SWOT table

Strengths	Weaknesses
Very high mobile penetration	Low business R&D expenditures
SEE achieved broadband coverage for all Digital Agenda target	Low mobile broadband penetration
Relatively high availability of broadband connectivity	Little evidence and analyses to help countries decide if e-Health technologies can provide substantial savings to healthcare systems
Average SEE internet use around EU27 average	Lack of investments' impact assessments
Policies/strategies in place for support of e-Health services in SEE	Low level of e-Health applications development in SEE
Capacity of innovation in e-Health to produce significant cost savings and operational benefits to the traditional healthcare system	SEE countries are mostly innovation followers
Good potential for scientific cooperation/ co-publications, which enables knowledge transfer and sharing also at transnational level in SEE	Lack of e-Health system interoperability
Inherent relationship between cost and mass production costs shared with non-health services	Major issues under debate on privacy and security
Is some subsectors sizeable market to be targeted within the region	Lack or low adoption of common legal/regulatory standards relevant for e-Health
Possibility to produce application/ product innovation even for small companies without large investments for development	Low level of early adoption capacity
	Insufficient senior leadership to support the introduction of e-Health systems

Opportunities	Threats
General reforms to the NHS taking place (austerity measures, restructuring, etc.) that might create demand for e-Health solutions Ageing population: a market opportunity for several e-Health solutions "Underserved" populations among the poor or at remote locations can be seen as major markets 'Health, demographic change and wellbeing' is identified as a societal challenge, for which funding will be provided under Horizon 2020 Digital Agenda (Europe 2020) targets support ageing citizens' lives and revolutionising health services Increased need for data sharing among delivery organisations and healthcare professionals – because of citizens' mobility Exploitation of new markets: development of concerted e-Health services in border regions for EU and candidate communes next to the service centres Moderately increased computer literacy and ICT skills among SEE citizens Proven RTDI potential from results of FP7 ICT Programme: Challenge 5 – ICT for Health, Ageing Well, Inclusion and Governance	Low social willingness to accept e-Health innovations Reforms of NHS stopped (or reduced only to cut downs) when significant investments are needed because of economic crisis Austerity prevents increasing or even imposes a decrease in RTDI financing Adoption of e-Health systems often requires cooperation among Ministries and government bodies – that might not be in place Accreditation problems for Health professionals, especially in transnational cooperation Fragmentation of public demand