

**eHealth applications in Bulgaria:
towards societal benefits**

In the frame of the SocKETs project six case studies were carried out to exploit the potential of co-creation in enhancing the innovation process and aligning innovation to societal needs, with a specific focus on Key Enabling Technologies (KETs). One of the case studies is focused on KETs-based innovation for eHealth application toward societal benefits in Bulgaria.

The study was performed by Centre for Research and Analysis – Bulgarian NGO addressing sensitive social issues by engaging different actors and applying innovative methods in participatory events.

The report with a mapping of the innovation eco-system is available here.

The study is based on desk research and expert interviews. It provides an analysis of the innovation eco-system of this sector in Bulgaria, including considerations on the innovation context, the barriers and opportunities for the introduction of new technologies, the key actors, relations and networks involved, and the relevant actions and interactions taking place. It aims to inform the design of a participatory process in which relevant technologies that could support eHealth applications will be discussed and developed.

**The KETs engagement and co-creation process will help to:**

- Set a frame, develop a common strategy, delineate a general direction to follow, so as the generated energy be steered in a more purposeful direction;

- Investigate the needs of the participating target groups;

- Select the topic based on their priorities, expectations and concerns, on their interest and capacity for participation;

- Consider the interactions with society, the impacts, the benefits and risks;

- Identify and discuss the barriers and opportunities to introduce KETs based innovation in the country;

- Engage the various actors in the eco-system, incl. people at different levels, in order to discuss the good practices, to raise awareness on important eHealth issues;

- Involve journalists who need to have adequate information to transfer to audiences.

The report also identified the **main barriers and challenges** to the introduction of technological innovation in eHealth:

* Lack of regulations for ethical issues and personal data collection and protection;
* Limited innovation culture and computer literacy of citizen and professionals;
* Fragmentation in the eHealth system, lack of nomenclatures and standards;
* Lack of sustainability of innovative initiatives
* Lack of reliable data sources; voicing of controversial information; distrust in the health system and medics;
* Scepticism with respect to innovation from all stakeholders.

A **number of KETs** have been outlined in eHealth applications:

* ICT including Telemedicine, Health Portals, Virtual reality;
* IoT (Internet of Things) which helps collect and store data from different types of sensors and is applied in distance monitoring devices;
* Advanced analytics and algorithms (e.g. AI, machine learning, deep learning). Analytics are the new trend in digital health, able to transform data into knowledge, insights, evidence of value and impact that informs new models of care within a digitally-enabled environment. Electronic Health Records (EHRs), Personal Health Records (PHRs) can be filed here.

The **innovation eco-system stakeholders** that will be interested in the co-creation process include:

* Research institutions – the Bulgarian Academy of Sciences and its ICT institutes, the Medical Universities,
* Public bodies – the Ministry of Healthcare, hospitals, clinics
* Business - start-ups, ICT – IoT - AI companies producing/launching software, platforms; manufacturers - producers of medical devices, wearable devices, clothes;
* Industry and sectoral associations, tech parks, clusters;
* Other - Non-governmental organizations - doctors’ and medical personnel associations, patient organizations for protection of patients and customers, specialized NGOs for personalized medicine; for eHealth; for medical education etc.; Trade unions; Media; The Public, etc.

**The most relevant outcomes** of the co-creation process that we expect are to build knowledge on the importance of KETs and their role in eHealth development and implementation; To experiment on several forms and ways of interaction between stakeholders and citizens to explore priorities, expectations, and concerns on research and innovation in the fields of e-Health; To involve industries and citizens, patients, users and professionals to develop and co-create product, design suggestions and shape social-innovation strategies, responsive to societal needs and challenges;

To obtain a meaningful result from the discussions on the development process, that will be of use to the participating actors and the public.

From the point of view of the interviewees, the opportunities of new technologies in the eHealth systems are outstanding. The use of KETs applications and devices throughout the chain of medical products and services will introduce efficiency, time-saving, accessibility, equality, affordability and better quality of life.