

A doctor in a white lab coat is shown from the chest up, pointing with their right index finger towards a digital interface. The interface is overlaid on a blurred background of a hospital setting. The interface features a central blue circle with a white plus sign, surrounded by various medical icons in white hexagons: a plus sign, an IV drip, a wheelchair, an RX symbol, test tubes, a brain, a ribbon, a microscope, a heart, a pill, a female symbol, and an ECG line. A dashed white line connects the doctor's finger to the central blue circle. The text "Smart Health" is written in a large, white, sans-serif font at the bottom of the image.

# Smart Health

Smart sports, smart foods, smart hospitals ... there is a seemingly unending trend evident today as health and a healthy lifestyle have become paramount to keeping the healthcare system affordable and manageable. 'Smart' has become imperative in dealing with an ever-growing proportion of elderly people, increasing obesity and a doubling in the number of diabetic patients. How can Software Innovation help tackle the issues? Some of the answers lie in our ITEA projects. Global economic growth will see increased spending on health related services; in developed countries chronic diseases continue to increase and in developing countries a larger number of people will gain access to healthcare and more awareness of the healthcare options available to them. An ageing population will increase demand for healthcare as staffing capacity declines and lead to a greater need for software and embedded systems in healthcare support.

# Some facts and figures



- › Across all the countries in our survey, more than 75% of respondents would like to use digital healthcare services, as long as those services meet their needs and provide the level of quality they expect. [14]
- › Older patients (those over 50) want digital healthcare services nearly as much as their younger counterparts. More than 70% of all older patients in the United Kingdom and Germany want to use digital healthcare services; in Singapore, that number is even higher. [14]
- › Poor access to healthcare currently affects one billion people, especially in developing countries where an extensive hospital/doctor network is hardly feasible: Nigeria, for example, would require 12 times as many doctors by 2030 as today's number just to reach OECD standards. Instead, this gap needs to be narrowed with innovative medical technologies allowing for remote medical analysis, diagnosis and, ultimately, treatment advice. [15]
- › 63% of all deaths worldwide are caused by chronic diseases. Innovative companies should align their R&D portfolio accordingly and create innovations such as artificial organs or customised, 3D printed implants for individuals living in countries with a higher-level health system. [15]
- › The number of fatalities caused by preventable medical error in the United States alone is the equivalent of two jumbo jets falling out of the sky every day [16]. This shows a lot can be improved in hospital management.
- › A key topic for elderly people regarding their health is to keep them connected to society; having a social life, volunteering, prevention. Smart community tools can be used to work in this direction. [17]

# Imagine ...

*Imagine a hospital where you do not have to wait during multiple visits. Where your privacy and security are secured when doctors or health insurers share the data generated by wireless sensors to a computer that analyses your state of health, diagnoses problems and suggests a course of action. Where diagnosis by your doctor, specialist, clinic or hospital leads to personalised treatment, reducing your time spent in hospital and accelerating your recovery. Imagine a healthcare system that is more affordable, more customised, more effective, more comfortable, less painful. Where surgeons boldly go where no surgeon has gone before and the hardware tools are given a beating software heart. Where anxiety and risk are minimised and where health is a means to life not a goal in itself.*

*Imagine what is possible when we dare to dream, when we reach for the stars in a galaxy full of opportunities ...*