Will we still need a doctor? Digital future will radically change medical services.
Dr. Bruno Vogel, CECUA Director Technology

Digital and mobile health will change our life
Digital health with mobile devices will be one of the most innovative issues in our digital future. The present start-up phase will be transferred very soon to rapid development providing incredible innovations with enormous benefits, challenges and dangers. In 2014 EIF (European Internet Forum) presented a useful study on our digital future in 2030. In this study preventive healthcare was mentioned as a mega trend. Since then, this trend has become even more apparent. Already in the near future we will see many new products and services. Technology of sensors, of micro components and of information processing in combination with mass production will achieve incredible progress and deliver revolutionary products. Very soon this will supplement, enhance and change medical services and given structures of healthcare systems.

The changes will come, but nevertheless the related future is very uncertain. Presently, self-driving cars are on the way. Will self-driving medical tools be a natural part of our digital future? What will be offered by global players, by further product suppliers and by our given health systems? Will we welcome products that monitor our physical status and give us helpful or even vital hints? What will be the role of medical staff? There are incredible opportunities for technology and service. What is the vision? How to forecast? We need the crystal ball of a fortune teller. There will be enormous changes and challenges, but we don’t know what the future will be. But it is obvious that it will be very different from now.

What are the driving forces?
A number of driving forces will speed up the process:

- Health care is a huge market all over the world. Therefore, market players and investors want to take their chances. In addition, the threats to existing market shares will enlarge their commitment. Small companies and big players are looking for big business in the framework of mega trends: preventive healthcare, mobile health care, remote solutions, global services. Big players from the digital services are addressing this market already and have huge investment funds.
- The technical opportunities are incredible. Medical technology will offer new dimensions via revolutionary changes and via further development of given solutions. Information and communication technology is here supplemented by sensor technology, robotics and miniaturization, each of them with huge development speed.
- There are additional driving forces from markets close to health care: wellness market, health and wellbeing applications, medical prevention, social media global solutions, smart living environments, ageing well products, assistance for housekeeping and personal care.
- There are weaknesses of existing health systems all over the world. Digital solutions can provide improvements of given services plus new dimensions of services and deliver the increased productivity. Particular pressure results from necessary care of elderly people and from given insufficient health care for groups of population and regions and from the costs of professional solutions. Furthermore, individuals give high priority to personal health.

Some views on present solutions and trends
Presently, the programs of congresses and conferences as well as the announcements of global IT players and providers of health oriented products show huge activities assigned to headlines like e-
Health, m-Health (mobile health), personal health, mobile apps for fitness and wellness. The offered or announced products cover a broad range from tools for improved diagnostics by medical staff, automatic diagnostics without human medical expertise, services and tools integrated in national or regional health care systems, global services with specific diagnostics, independently working solutions for personal use, apps and devices for smart phones, health oriented extensions of fitness apps covering preventive health care functions and others.

The working power and network integration of smart phones combined with technical devices for measurement of personal health data play a central role for presently offered products and for the opening of the market. Technical innovation fields like the so-called wearables are on the way to supplement the necessary technical functionality.

Beyond technical opportunities there is a number of further key questions for the speed and the direction of the forthcoming development, in particular the behavior of users, consumers, big companies, investors, governments and given stakeholders. As for users or consumers, they probably will welcome these new functions and services if there are related benefits. Maybe some key applications will open the market very quickly. These applications may be integrated into health systems or be available as personal use, for instance pre-analysis of uncertain heart attacks or other warnings. Furthermore, financial benefits can speed up the process very much.

**Benefits, challenges and threats**

Obviously, the digital future of health services can provide a lot of benefits: incredible progress of detection of health problems, reliable information about our physical state, personal freedom and direct information, basic information for choice of treatments, many low cost solutions for nearly everybody, relief of medical staff, targeted treatment, health improvement etc.

But on the other hand there are also many challenges and threats: integration into given health service, emergence of global solutions, social balance, quality of service, data protection, market powers, possible dominance of players, dependence to other services, surveillance of individuals (including assurances), permanent physical monitoring by hidden technology, personal rights etc.

**CECUA’s view**

Probably we will see revolutionary changes and unstoppable driving forces as well as smooth progress compatible with given structures and services. Presently, political powers and further stakeholders deal very intensively. But there is only limited public awareness of citizens and media.

The diversity of European health systems, member states, regions and citizens includes special challenges and chances. Therefore more awareness of all stakeholders is necessary. Existing and future pilot projects, careful monitoring of the development and suitable legal and administrative frameworks can provide valuable contributions to an adequate influence on this crucial part of our digital future.

CECUA will continue to monitor these developments.

**Further reference**

The Global Internet Report 2015 of the Internet Society ‘Mobile Evolution and Development of the Internet’ underlines many items mentioned above. The report provides a lot of information on the health issue. It is recommended to have a look on this very good document.