Impact Story

BIOSENSING

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From the standpoint of a Digitization Agency, we have been looking into how digitalisation will affect and influence medicine. We also asked ourselves the question: what will the cornerstone of tomorrow's strong digital health care system look like?

When was the last time you had some flu symptoms and felt the need to go to the doctor? We all know how it works. First thing you do is call the family doctor. The receptionist asks you if you have an appointment with the doctor. Of course you don't. You did not plan on being sick. Without an appointment, the only possibility is go at the clinic and wait. There were some times when I could not even stand and I had to leave my apartment to go to the clinic and sit in a small room full of people coughing and sneezing who also did not plan on being sick. You wait and hope to not get even sicker after spending hours in there. After some time, someone calls your name and it is your time to go to the doctor's office. First, he asks you about the symptoms. Then commonly he measures your blood pressure, body temperature, takes a look at your tonsils and finally hears at your lungs. After this routine you sit together until the doctor finishes typing the data in your medical history. Most of the times he prescripts you some kind of paracetamol or ibuprofen. Was this all necessary?

Nowadays yes, in the future definitely NOT. All your family doctor needed in order to give you a treatment was data. The measurements of your blood pressure and your body temperature, visual access to your tonsils and the soundscape of your breathing. Is it possible to collect all this data from home? Actually yes. A lot of wristbands continuously measure blood pressure, body temperature and much more. The technology makes it possible to connect stethoscopes and endoscopes via WiFi or Bluetooth with your devices. There is so much innovation out there taking medicine by storm. But what is missing? Why medicine is lacking so much digitalization?

Digitalisation doesn't just mean using information technologies to manage data but, importantly, it also offers the opportunity to develop new and disruptive business models. This demand for such models comes largely from digital natives, a generation that has grown up with a strong "always-on" mentality and that is increasingly shaping how our society lives. The close connection that people have with the internet generally means that future business models will have to integrate, promote and distribute more and more data and "things". For medicine, this is likely to mean more effective treatment and care of patients.

To find a pathway between digitization and better treatment of patients, we began looking at a wide range of diseases. From common diseases, to arthritis, through to diseases like multiple sclerosis, we have gained insights into the needs of both patients and doctors. Additionally, Google is enabling us to be our own doctors. We spend lots of time researching, discussing and reading that we often felt ill ourselves during this time. It even becomes an issue in the dialogue with doctors.

To identify the key concerns of both parties, we conducted 32 interviews with opinion leaders in Germany and Switzerland. Our first insight was that patients' most pressing concerns during their illness are a lack of awareness, fear, and the feeling of being alone. They also have a strong desire for their health to get back to normal so that they can regain their quality of life.

When patients talk to their doctors, these very emotional needs come up against the rational and practical interests of the medical profession. Doctors are strongly influenced by medical guidelines, work routines and costs. We believe, we have identified a serious weakness in this lack of common interests. We were also able to recognise that the cornerstone of a strong digital health system is the data and information transferred between doctor and patient.

WHY IS IT THE CORNERSTONE?

More and more digital health data is being collected by biosensors. Biosensors, which are built into wearables, can not only be with us 24/7, but they can also record our state of health at regular intervals and issue alerts if they discover irregularities. These medical technologies may be enhanced by the use of e-health apps, thus enabling holistic coverage of a patient's needs together with tightly integrated medical care. Data from a variety of studies has shown that, because continuous monitoring enables earlier intervention, it demonstrably improves a patient's chances of survival. As a result, people now use portable measuring devices to collect huge amounts of biodata throughout the day and are well aware of their specific health condition. However, doctors cannot evaluate and use this data until it has been assigned a billing code. The German health system is currently not capable of making the urgently needed changes to do this, even though in the long term it would benefit both patients and doctors if they could spend less time on check-ups and more on targeted interventions.

From the doctors' point of view, their essential interests are already covered by a wide variety of medical information systems and practice software such as CGM MEDISTAR or medatixx. But how can we connect these two worlds, or more precisely, how can we transfer patient data collected via wearables and apps to the doctor's invoicing system?

Only when health apps and biosensing technologies can connect to and communicate with practice software, allowing doctors to bill for their digitally-enabled services, we will be able to properly welcome the digitalisation of medicine.

We are missing the decisive player here:

The one...

...connecting innovation to science.

...connecting data with a clinical follow-up process, such as a special treatment.

..., with imagination and prescience, making a meaningful and secure patient-doctor relationship possible.

...combining the best of both worlds.

HELLO DIGITAL HEALTH!