



Digital and the Influence on Health Care

These days, everyone in every industry is talking about digitalization and its disruptive influence on business models, and the pharmaceutical and life cycle industries are no exception. And, like in all other industries, the same or similar questions arise.



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The first question: How do we actually define “digitalization”?

The necessity of clarification and focus

The first question that needs to be clarified is the question of what a company understands by the term digitalization. Key words are seldom clearly defined, yet their importance and, by extension, their areas of application that concern them are very different. So, are we talking about big data and data analytics? This involves research, testing methods, and also treatment supervision. Or is it about artificial intelligence, where it is possible to derive research procedures, treatment, and medication recommendations? And, lastly, there is also the Internet of Things, e.g. with wearable data collectors like fitness bands or even clothes (or even devices placed in the

body) which transmit data and communicate with other devices. These allow forecasts or even recommendations for dosage adaptations for diabetic patients. Also mobile electrocardiograms can be done with devices smaller than cell phones to show early signs of atrial fibrillation and stroke risks. Often enough there are dependencies between these application areas, making it all the more important to be clear about the goals of one’s own company.

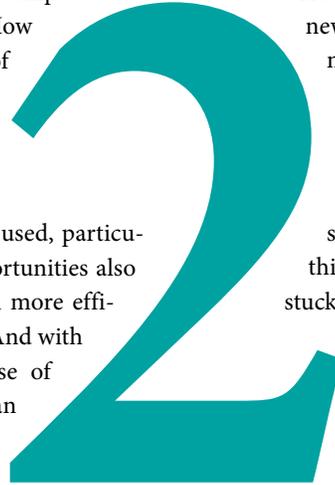
In the discussion about the role of a chief digital officer, which was introduced a few years ago, the range of possible applications has become clear which included connections to IT, marketing, and even to strategy.

The second question: Do we act or react?

The company's own role and the evaluation of the competitive environment

Another important evaluation involves the company's role in the area of digitalization. How does the company want to tackle the field of digitalization? Usually, activities concentrate on the possibilities of one's own actions in the various areas mentioned above without an holistic view.

Digital technologies are already being used, particularly when it comes to research. But opportunities also emerge to perform test procedures much more efficiently and even with larger populations. And with expanded data collection during the use of medications, the observational study can significantly improve not only the dosage but also their further development with respect to side effect management, etc.



However, in addition to this application of new technologies to enhance the business model, the corporate strategy also has to develop strategies either to fend off negative developments or, even better, to further advance one's own business model. Established organizations with successful business models naturally find this harder than companies or industries stuck in the midst of a crisis. And this is not a necessity that has just emerged in the age of digitalization. Even in 1997 Christensen pointed out the "Innovator's Dilemma".

The third question: What should we expect?

Developments that emerge from new technologies

The pharmaceutical industry is a very attractive industrial sector. The demand for pharmaceutical products is growing due to the demographic development and the expansion into developing markets. Compared to other industries, the pharmaceutical one is generating high margins. However, product development goes hand in hand with high risks and long periods of development. Moreover, the industry is heavily regulated. For this reason, a few developments in the pharmaceutical industry have not yet progressed as in other industries.

At the same time, there is a tremendous demand to apply new technologies in order to develop new forms of treatment and to reduce the high costs of health care.

This is where the market entries of new companies can have a considerable impact. Google's Verily develops wearables like contact lenses or fitness bands together with apps, which make it possible to collect and evaluate patient information. IBM Watson analyzes data to improve the diagnosis and derive appropriate treatment recommendations supported by artificial intelligence.



At the same time, health care funds and regulatory authorities are on the lookout for other ways of billing. There is a move away from compensating the amount of prescribed medications in favor of compensating the added value or even avoided costs.

Today, doctors are already working on the Internet and treating patients from a distance. That which is viewed rather skeptically in developed countries where good health care is in place, is deemed to be a great step forward in developing countries with underdeveloped infrastructure. And, finally, it is likely that in future even the patients will demand more of a say in treatment and drug decisions. Access to information makes it easier to assess a doctor's treatment recommendation, and patients networks offer advice. This is another point pharmaceutical companies – which have had little direct contact with patients – will have to consider in future and use as an opportunity to inform. In doing so, the considerable transparency requirements when dealing with doctors and patients have to be considered accordingly.

The fourth question: What does all this mean for us? Conclusions for the pharmaceutical industry

Digitalization presents huge opportunities for the health of people and for the pharmaceutical industry while at the same time harboring disruptive potential. Due to ethical questions which need to be clarified and the corresponding necessity for regulation, development will potentially be slower than in other industries. Given the significance for society there will, however, be considerable demand to take advantage of the opportunity.

Pharmaceutical companies have to prepare for this new environment. The development will promote networks and partnerships.

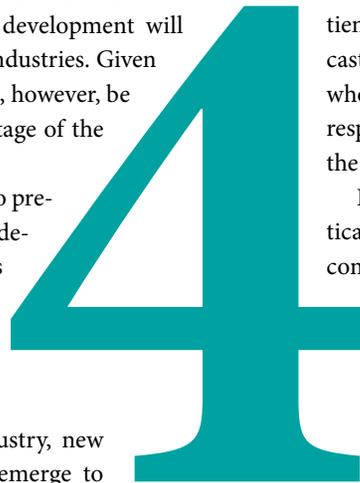
While such partnerships already exist in the areas of research and commercialization between individual companies within the industry, new partnerships with companies will emerge to deal with the management and analysis of big data. At this stage, there is little point in an industry-wide solution because networking with other datastreams can certainly create added value. Today, for instance, there is

an app for migraine sufferers which compiles weather data, patient movement data, and medication intake in order to draw appropriate conclusions.

The “Network London Health” connects patients, doctors, and pharmacists to develop forecasts based on environmental data for people who suffer from asthma and then arranges corresponding treatment times and the logistics for the delivery of medications to pharmacies.

Health care funds together with pharmaceutical companies are more likely to develop and compensate preventative methods and those which avoid medical expenses. And the focus will no longer be on the amount of medications sold, but, rather, on the avoidance of illness or on healing.

Similar to the communication, transportation, and energy sectors, models could emerge which promote a networking and sharing of information thus necessitating new models to safeguard the high costs of research and the risks borne by pharmaceutical companies.



Conclusion

As in many other industries, the pharmaceutical industry is also facing developments brought about by technological possibilities, which could certainly have a disruptive character. These developments require the company to have a clear strategy for its own role in this development in order to determine the focus for important future steps. Doing this requires a culture of agility and innovation as well as the courage to embark on new entrepreneurial paths. But the fact remains that despite all the support technology offers, people who are able to formulate relevant questions, derive ideas, and draw conclusions from data analyses are the major success factor. ▀

