

## **ECONOMY AND DIGITAL TRANSFORMATION IMPACTING HEALTHCARE COMPANIES**

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### **Abstract**

*Traditional model of developing drugs was slow and very expensive, relying on the face to face interactions only. In the meantime, increasing numbers of new molecules that are studied in clinical trials to become drugs required more and more investment, which derived to a reduced reimbursement. What if the patients can benefit more on the digital medicine and treating chronic diseases on digital medicine but also some of the acute symptoms? The aim of research, was to evaluate the impact on the companies reimbursement of “GO Digital” alternatives as well as the impact of patient’s life quality*

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### **1. Introduction**

National trends in health expenditures are attributed to a boost in underlying demand for medical services resulting in a growth in real per capita income. Patterns in health care growth, however, vary widely across types of services. It is anticipated that hospital growth will fall well short of the increase in physician and professional services as the trend from inpatient to outpatient care continues. (Pamela Whitten, 2006)

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At the same time, there is a market drive to use technology and internet to bring more pathology testing closer to the patient and this is creating a polarising effect on different service.

There is therefore a major opportunity for companies in providing services to the top end, high quality analysis that are demanded.

As a major trend in this industry we can note here that healthcare has become a big business. People are much more mindful of being healthy. We are in an age of continuous change. The development of the Internet and of the information and communication technologies have led to important shifts in the way companies do business. (Fuciu, 2012)

In regards with the company's intention to integrate professional websites with high quality content as portal tools both for healthcare professionals (digital marketing, referrals, appointments) and patients (online appointment, medical video chat, etc), we can say the companies plans to be active and gain market share on e-Health and Mobile Health market.

The applications and websites have proved to help the online medical practice. They connect patients with healthcare professionals through online infrastructure. In this regards the e-health will prosper in connecting parties, and creating database for future research.

Social messaging apps will also develop into leading marketing platforms. The most commonly researched topics are: specific diseases and conditions, treatments and procedures, doctors and other health professionals. (Michael Del Gigante, 2017)

The Internet has potential range from a promise to revolutionize the fundamental way health care is delivered to a tool for empowering patients through enhanced interaction with providers.

Improving the patient experience will be the remedy for better outcomes. Patients expect healthcare organizations to provide tools and resources to support their journey to a better health.

## **2. The digitalization impact**

Companies are in continuous search for a new generation of health informatics systems that meet the needs of a modern laboratory and of a modern clinical private practice environment. Armed with such systems, doctors, private practices, laboratory professionals and the pathology services they provide will become the key enablers of change in medicine management

towards a holistic e-business approach from how data is managed through to how customers interact.

Path labs are in business of taking samples and producing data. Therefore, it is how this information is used, manipulated and presented to the doctors and patients that is increasingly critical to meet demands for improvement in the quality of life. (Pamela Whitten, 2006)

It is important to analyze the cost of implementing interconnected digital platforms for conducting the clinical research that will be extended on the patient's side too. (Eric Elenko, 2015); It is a must also to compare the costs for commuting, IT devices and platforms and offices costs before and after COVID-19 lockdown for a medical research company. Also, we will highlight how SARS-COV 2 changed the work module and what impact: positive or negative has on the long-term companies' economical value and stock quotes. So far it was noticed that Commuting is time, finance and energy consuming. By flexible time and homework, people were more productive, having also time to take care of their families.

### **3. Main findings and discussions**

A robust cloud-based platform for the secure capture of patient data, combined with the use of cutting-edge technology improves patient treatments outcomes and enables better planning and analytic insights. For going digital we discovered the need for an interface for meeting platforms.

Planning an integrated selling solution phase instead of buying from a catalogue, it is done by use an engine that makes the proposals and chooses the best product for you. Getting there, we need to start the foundations: with data platforms, looking for how we can get together the decentralized platforms. In the mean time there is a need to be open up for feedback that helps us grow and guide ourselves, done by keep re-entering in the feedback asking how this helps us to grow.

It was also analyzed the impact of meetings on the "Digital Manner" and it was noticed, that communication using for example "Teams" program, helps to reduce the number and the duration of meetings held outside the offices. Meetings conducted via online are reliable and of very high audio-video quality, all this, results a in less time spent for set up a call and other dialling in issues. Users get more out of their meetings and require fewer of them overall. The total time savings transformed in money savings for three

years, is estimated at \$6.8 million for a medium size company with around 125,100 employees.

With online meetings like Teams, companies reduce many other communication software and hardware solutions. Companies also reported reduced savings from long-distance mobile phone and on-premises telephony solutions costs by switching to Teams. A statistic for three years, the total savings for the composite are worth \$648,727.

Using online meetings after COVID-19 it was replaced around 5 overnight trips per month per employee. The total savings over three years is should be \$233,080. (Forrester, 2016) Now, in Q2 2020, there are 100 thousands interactions with doctors in hospitals digitally, so digital and science needs to get together more than it was before COVID19.

Another aspect of digitalizing the work environment was the Deployment And Migration Professional Services

Professional services are often used as part of one country or region, after COVID-19, it was noticed that more jobs were performed outside of one single country or region as it was before, since many international units are based at Headquarter, and the head office of the global Innovative Medicines division. The campus (buildings) is one of the most important research sites:

Scientists from all over the world are engaged in research here on innovative medicines and therapies. A new system called Nerve Live that uses predictive analytics was produced to more effectively plan the clinical trials. It includes a control room that receives updates in real time on all ongoing trials and is a big support for all the teams. This is also contributing to less travel and overnight trips costs and a faster decision making, which at the end of the day, also saved the costs.

The sales per medium size country such as: Austria, Switzerland, Croatia are AROUND 0.8 billion of CHF out of 50.7 world wild and the Investment in Property an equipment is 0.2 billions out of 1.7 world wild. (Matthias Leuenberger, 2020);

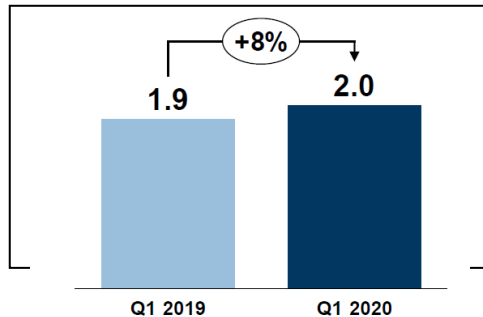
Biopharmaceutical sales (profit) growth, strong underlying performance and COVID-19 related forward purchasing drove Q1 results

In the Q1, the market showed to be impacted by COVID-19, +USD 0.4bn on sales and core operating income, are expected to reverse in the remainder of 2020

Higher operating income is expected to come from the (adjusted for non-cash items):

- Higher working capital
- Accounts receivables, supporting sales growth
- Accounts payables, due to lower spending as many employees are working from home and business travels are very limited

**Figure 1: Free cash flow increased Q1/Q2 2020**



In Q2 2020 Lower divestment proceeds. In Q2 performance shows a solid accelerating the digital transformation and sales grew +8% as growth drivers continued due to new launched molecules. (Matthias Leuenberger, 2020).

In Q2: COVID-19 had negative sales impact as the reimbursement was effected by COVID-19 pandemic usage of medicine in the Hospitals and private practice. On the other hand, shows a positive profit as the company used a lower divestment proceeds and also due to home offices new work module. All this bought the need of accelerating digital transformation. The first steps were also imposed by COVID-19 regulation restrictions and they are:

1. Pivoted to hybrid F2F / virtual promotion and patient support for in-market brands to be proceed online with a physician prescription for chronic diseased online too using telemedicine. The patients can purchase their medication in a more facile manner.
2. Leading virtual scientific and medical engagement at congresses.

Through the use of analytics and advanced technologies we are fundamentally transforming how we deliver innovative science, operational excellence and more personalized customer experiences.

We are also looking for the costs involved in remodelling the new working module on digital so 100m+ were invested in Digital (USD) in order

to adapt work of around 18 thousand people that went on virtual working since COVID-19 pandemic.

Now, there are explored new ways and remodelling the way we do things. All this comes from adaptability and COVID 19 accelerate it.

Some of the beginners in digitalizing the medicine are: Google announced a partnership with Novartis (Basel) aimed to produce a contact lens that is able to monitor the blood sugar levels, which could be applicable for diabetics but also for generally use, for alerting a user of a pre-diabetic state for healthy users and the hyperglycaemia for diabetes users.

Another company is Akili Interactive Labs, which develops video game platform for remote observation and action of cognitive disorders, such as Alzheimer's disease, attention deficit hyperactivity disorder, autism disorders. "The firm's software measures a proxy of executive functions in the brain by quantifying an individual's cognitive interference processing abilities in a consumer grade video game environment." (Elenko, 2015); The product can also be remotely programmed to start a certain game module aimed at improving a user's cognitive function, using game mechanics. In addition this can be a potentially new type of digital medicine that would be great to be used and prescribed in a doctor's office. (Elenko, 2015); Nowadays, this kind of technology shows that there is room and can be done of entirely remote medical intervention where patients could receive treatment without a doctor visit in person, a concept that is currently under tests in the Bridging Research and Innovation for Greater Health in Technology, Emotion and Neuroscience. (Brighten, 2007);

Another aspect of the digitalization benefits is that 72% of take community are joining in town halls and before COVID-19 Pandemic, only 42-54% would join online meetings. So, the engagement is also benefit out of it. Even thou, the Q3 2020 came with cost -5% lower versus Q3 2019 due to digital meetings, so as an overall it does not have a very big impact, over a year, the change looks bigger. (Matej Mikulic, 2020)

Indeed, it is well known that Working Better Together, but working digital together is better and also saves money and time as we could see from the above statistic. By working digital improves our work by working smarter rather than harder.

We are now looking for benefits of a digital word. In this article it was discussed only about going digital on medical field but there are more fields that need our attention such as different sectors of the economy at different

speeds. Approximately 25% of global manufacturers are using digitalization. This is expected that until 2025 it will grow over 80%. (Rt. Hon David Cameron MP, 2020)

With more and more data generated in the labs, data records provide management and medical insights. Every task which is performed through the software leaves a digital record and is tracked. (CareData, 2020) Complete automation means potential rich data and in turn meaningful reports for the different users and stakeholders. We should also not forget about the threats, especially here were data are more sensible and private than any other domain, considering life the most valuable asset.

A lab built around IT provides the reports and restricted access needed for all activities, from strategic decisions to the required user portals.

Due to the market domination of a few major players, there is a real need for a new independent supplier of high-quality laboratory services reporting system, as well as services that can be integrated with the wider business. Offered as a new way of thinking, the goal is long-term survival and functioning of the system. Simultaneously and in parallel private and individual specific financial regulations turns to find a new way of "life" of the financial safer and more benefit entity. (Bratu, 2012) In the same believe, this would provide greater flexibility and choice to facilitate the focus of specialist and generalist expertise on patient care and to boost the businesses in the healthcare systems by their adoption of an e-business model.

Mobile health – “m-Health” market – Major consumer technology companies are developing systems that allow users to download their health records combined with self-diagnostic information. The company understands that the key challenge is to resolve the lack of interoperability between different sources of patient data and to enable consumers and healthcare professionals to access integrated information. Now there are more and more companies that intend to provide improved level of data share at a professional level, which is expected to create in turn an operating platform for the major patient-facing systems, on a commercial basis.

The laboratory marketing arena is no longer simply about collecting samples and producing results. The whole emphasis has now shifted to data management and interface with the customer – how is data presented in context of the patient’s individual circumstances.

As we already mentioned before and also because the Covid-19 circumstances the shift to the digital market become a must and means a lot of

changes most of them drive by new reality and demands. In addition, the combination of academic, research and heritage impositions of the system places conflicting objectives. For example, academic and research objectives are entirely different to operational service objectives. To add more to this, the need of people to get informed on health issues, the continuous grow of online information and of the use of internet, exerts a high pressure on the relevant market and creates the market potential for an integrated platform, where from both medical specialists and patients to get the laboratory test results and to access relevant information on consultants, diagnosis, pathologies, recent developments in medicine and healthcare etc.

#### **4. Conclusion**

Laboratory requirements are rapidly evolving, and the needs of each facility are vastly different. Before the evolution of technology over the past few decades, the management and analysis of lab samples were both time-consuming and prone to transcription errors. Thankfully, the modern world has introduced custom in-house solutions, allowing for better lab efficiency, more accurate information management and, in the case of the healthcare industry, improved patient outcomes.

The features of laboratory software have evolved over the years from simple sample tracking to complex planning tools that manage multiple aspects of laboratory informatics. Here are some of the ways modern software can improve and enhance workflow in the lab.

Overall, there were many efforts in doctors' work for prevention rather than treatment and with the COVID19 acceleration of "Go digital", the aim of digitalizing the health care system in order to change from treatment to prevention usage of telemedicine, came faster than expected.

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