

# Transforming NCD Business Models in Switzerland: CSS Insurance Perspective

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**Keywords:** NCD Management, Business Model, Health Insurance, Telemonitoring.


**Abstract:** The worldwide incidence of non-communicable diseases (NCDs) is increasing, prompting exploration into technological advancements that present fresh prospects for treating and managing NCDs. Numerous well-established companies have been working in the field of NCD management, providing digital tools for the efficient management. Although there are many digital health companies nowadays, building them up at scale is difficult due to a heterogeneous, inefficient, and fragmented healthcare system. Therefore, we engaged in a conversation with Christopher Bensch, healthcare expert at CSS – one of Swiss’ largest health insurers – to understand better which business models may improve the management of NCDs. The insights are structured along the business model framework of the “Magic Triangle”. We found that the integration of healthcare providers is crucial when implementing the business model. Furthermore, new business models should be launched lean, pragmatic, and improved along the innovation process within the given regulatory rules rather than waiting for the regulatory environment to change.


## 1 INTRODUCTION


Approximately 2.2 million people in Switzerland suffer from noncommunicable diseases (NCDs) such as heart disease, chronic obstructive pulmonary diseases and diabetes (BAG, 2023). Total direct costs of NCDs in Switzerland are estimated at 52 billion Swiss francs per year, comprising about 80% of the total healthcare costs (BAG, 2021). Hence, NCDs stand as a widespread, detrimental, and expensive condition.

Numerous companies offer their services for managing NCDs (here referred as “NCD companies”) leveraging digital health technologies (DHTs), i.e. “computing platforms, connectivity, software, and sensors [used] for health care and related uses.” (Digital Therapeutics Alliance, 2023). These technologies can improve access to health information for both patients and providers, enable

remote patient monitoring, and deliver timely healthcare recommendations and reminders to patients (Klonoff, 2013). Therefore, DHTs can positively affect patients (Hood et al., 2016; Keller et al., 2022) and care providers (Doyle-Delgado & Chamberlain, 2020). Nevertheless, new DHTs at the nexus of the healthcare and tech industry require a successful business model (Steinberg et al., 2015). But even if digital health business models are successfully built, scaling them up is often challenging due to heterogeneous, inefficient, and fragmented healthcare systems (Garber & Skinner, 2008). This fragmentation can be seen also in Switzerland, where each of the 26 cantons has a distinct health legislation. Still, each canton is vital in delivering healthcare services (Maurer et al., 2022). It is said that one of the biggest barriers to new digital business models in Switzerland is the lack of regulatory transparency and reimbursement

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possibilities (Sojer et al., 2018). Facing many challenges, the question arises of how new Swiss business models for managing NCDs should look to improve the treatment of patients and save costs substantially.

Health insurance companies are interested in finding innovative solutions to keep their plan members healthy, improve the health outcomes for those that need care at reasonable costs and thus improving their competitive position in the market. Therefore, we aimed to understand better how CSS, one of Swiss's largest health insurance companies, thinks about offering services to individuals affected by one or several NCDs. The CSS health insurance is serving more than 1.75 Mio. customers, which make up 20% of the total population (CSS, 2023). To tackle healthcare challenges, CSS has implemented different innovation strategies. First, they set an example by founding the SwissHealth Ventures AG, a fund of 50 million Swiss francs to invest in digital healthcare startups (Enz, 2020). Together with partners, CSS also launched the digital health platform *Well* with the goal of improving integrated care. They also initiated the CSS Health Lab, a research collaboration with ETH Zurich and the University of St. Gallen, with the overall goal of researching digital business models, digital biomarkers, and health interventions (CSS, 2023).

Against this background, we engaged in a conversation with Christopher Bensch, who works in strategy and corporate services as a healthcare expert at CSS, to learn how he thinks about building up a successful, sustainable, and scalable service for individuals affected by NCDs. To this end, we asked the following questions based on Gassmann et al. (2017):

- WHAT should NCD companies offer (the value proposition)?
- WHO should their target customers be (e.g. companies, healthcare professionals, patients)?
- HOW should their services be delivered (the value chain)?
- How should these companies create VALUE (the revenue model)?

In chapter 2, the insights of the interview with Mr. Bensch will be structured along the business model framework "Magic Triangle" as depicted in figure 1 (Gassmann et al., 2017). Furthermore, insights from grey and academic literature will be used to discuss the statements of Mr. Bensch. In chapter 3, we draw a conclusion and show the limitations of this study.

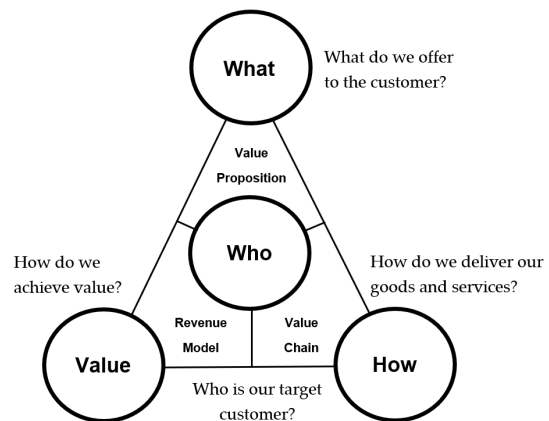


Figure 1: Magic Triangle (Gassmann et al., 2017).

## 2 DISCUSSION

### 2.1 WHAT: Telemonitoring and Integrated Software Solutions

According to Bensch (CB), *telemonitoring solutions* are promising technologies to improve care management for NCDs. Telemonitoring involves the gathering, transmission, assessment, and communication of a patient's personal health information to their healthcare provider or extended care team, all while being conducted beyond the confines of a hospital or clinical setting, typically in the patient's home. This is made possible through the utilization of personal health technologies such as wireless devices, wearable sensors, implanted health monitors, smartphones, tablets, and mobile applications (Gijsbers et al., 2022). There are many conditions, such as diabetes, where regular consultations are important but do not necessarily require on-site and synchronous consultations (CB). In Bensch's opinion, the problem in NCD management is that the time is not spent effectively on those patients that need care most. This is due to lacking means and time to identify the patients that truly need care (CB). Generally, time is spread evenly across all patients, so patients that manage their disease well get more attention than needed, while those that need more support are lacking the right support (CB). Bensch sees here the true benefit of *telemonitoring* (CB).

Telemonitoring has the potential to offer more frequent and continuous patient monitoring. This could enhance the quality of care, reduce the time clinicians invest in patient management, and increase monitoring frequency without overburdening

healthcare resources (Fazal et al., 2020; Ong et al., 2016; Shah et al., 2021). This permits early intervention and, ideally, the prevention of a condition from worsening further which will then lead to better health outcomes and ultimately save costs (Malasinghe et al., 2019).

Furthermore, Bensch mentioned that there are already digitized medical devices for patients (e.g., Continuous Glucose Monitoring) in NCD management (CB). Those tools should be integrated tightly in the health care pathways of providers to enable telemonitoring and to improve the outcomes of the treatment of the patient (CB). A recent study supports these statements of Mr. Bensch, stating that Switzerland could save up to 1.1 billion in costs only by telemonitoring solutions for NCDs (McKinsey, 2021).

Furthermore, according to Bensch *integrating different software solutions* in hospitals and general practices could help improve the efficiency of current care processes (CB). In Switzerland, many healthcare providers are running on different IT systems, even in the same clinic, different systems are not connected leading to substantial process inefficiencies and reduced operational agility (Blijleven et al., 2017).

Bensch names the example of *Diabeter* in the Netherlands that has integrated a full technology stack into their care pathways and into its daily routine of care delivery. *Diabeter*, unlike traditional hospital care, employs a specialized team for diabetes patients. Each patient has a dedicated care manager for continuous support, with regular check-ins and annual assessments. The team provides ongoing care adjustments through email, video calls, and phone consultations. Patients also have access to a 24/7 emergency hotline for immediate specialist assistance. Another example that Bensch mentioned, is the US-based company *Glooko* that offers a tech solution in diabetes management combining telemonitoring and integration of different software (CB). *Glooko* integrates several stakeholders (patients, healthcare providers, medical device companies, etc.) and different types of data (e.g. blood glucose, diet, fitness, biometrics, insulin and medication data) on one platform. It was shown that their telemonitoring solution could significantly improve an important health outcome (A1C, i.e., the average blood sugar levels over the last three months) of patients diagnosed with type 2 diabetes (Ranes, 2020).

## 2.2 WHO: Patients with Complex Disease Management and Healthcare Providers

According to Bensch, telemonitoring is especially useful for patients with complex disease management requirements and where connected medical devices already exist (CB). Therefore, NCD business models should target patients who suffer from severe health conditions like diabetes, cardiovascular diseases, or respiratory diseases (CB). In the case of diabetes, healthcare provider will then be able to monitor, coach, diagnose and treat the patient based on current and historical data (CB). This can lead to more personalized and effective care and better decision-making (Malasinghe et al., 2019; Stone et al., 2010; Zhai et al., 2014).

Regarding software solutions, Bensch assumes that it will be mainly the healthcare providers that will be the paying target group (CB). Studies show, that for them, it will be easier to streamline clinical and administrative processes, collect needed outcome data reducing the need for manual data entry and paperwork, which will lead to reduced errors and improve patient safety (Kaushal, 2002; Ruland, 2002; Ventola, 2014). The lack of open APIs has made it hard so far to seamlessly integrate the different solutions and make those compatible with each other (Faruk et al., 2022).

## 2.3 HOW: Importance of Healthcare Providers

For telemonitoring and integrated software solutions, healthcare providers should be involved early on, as their IT systems need to be connected to other solutions (CB). Studies show that almost half of the Swiss healthcare providers mention that a major barrier to not implementing DTHs is a lack of interoperability with their patient information systems (Sojer et al., 2018). Also, ineffective stakeholder collaboration hinders DHTs to thrive. Many core stakeholders lack incentives to pursue new DHTs together (Landers et al., 2023). Furthermore, according to Bensch, when developing a new business model, businesses should not wait for the regulations to change, as this is estimated to take several years. Although a Swiss regulatory sandbox exists (Experimentierartikel, KVG Art. 59b) where cantons and tariff partners are allowed to implement innovative pilot projects to curb cost growth and promote digitization in healthcare, Bensch's opinion is clear: Even with this new article, the process of building up new DHTs will take longer than five

years, as pilot projects have many requirements to fulfill. Therefore, he recommends starting in a pragmatic way within the given regulatory framework and iterating the business model continuously (CB).

## 2.4 VALUE: Patient Will Only Pay for Integrated Solutions

Generating revenue is one of the most challenging parts of NCD business models as many stakeholders have different incentives (CB). In Bensch's opinion, patients will most likely only pay for DHTs (either out of pocket or through additional insurance) if these solutions are integrated in the care pathway of their care provider (CB).

In other countries, DHTs are sometimes paid (or provided by the state or health insurance. For example, Germany established the *Digitale Versorgung Gesetz* (DVG law) which makes DTX solutions eligible for reimbursement (Mantovani et al., 2023). Switzerland restricts what services a health insurer reimburses, making it difficult for companies to monetize their DHT offerings (CB). In some cases, healthcare providers will pay for the DHT (e.g. Glooko, eedctors). Furthermore, as telemonitoring is closely related to telemedicine, health insurance companies may take over the reimbursement within coverage of additional health insurance products (CB). According to the doctor's tariff "Tarmed", telemedicine can be reimbursed as well as the review of patient records (CB).

## 3 CONCLUSIONS AND LIMITATIONS

Implementing new business models in the NCD management in Switzerland is still challenging. Business models that might work in Switzerland focus on diseases that are complex to manage and that have digitized medical devices for the patients (WHAT). Providing real value for both patients and healthcare providers is crucial. As Switzerland is still highly regulated and change can take several years, it is advised to start lean, build up pragmatic solutions within the current regulative setup, and improve the business model iteratively (HOW). Lastly, monetization still poses a major challenge. Potential paying customers might be healthcare providers, patients or insurances through additional coverage (VALUE & WHO). Specifically, these findings underline the importance of the integration of

healthcare providers when innovating in the field of healthcare (HOW). Key success factors will be the tight integration of technology components in providers' regular care pathways, overcoming the interoperability issues between different IT systems and handling the reluctance of healthcare providers towards innovation, as many do not want to take an active role in innovation (Landers et al., 2023).

### Limitations

Although this work has emphasized the efficiency benefits of telemonitoring, these benefits also need to be harvested effectively. Telemonitoring solutions generate a lot of data. Nevertheless, data without interpretation will not necessarily lead to better efficiency gains and improved outcomes. New companies gathering many different data points across thousands of individuals and making sense of it generate powerful new business opportunities in the future (Steinberg et al., 2015). One example is the partnership between *Glooko* and *Hedia*, where *Hedia's* algorithm is integrated into the telemonitoring solution of *Glooko*, making it easier and faster for healthcare providers to interpret the telemonitoring data of their patients (Glooko, 2023). Therefore, in future work, a detailed analysis of how telemonitoring solutions can provide substantial value for healthcare providers is needed to guarantee their willingness to pay.

Furthermore, this work is limited by its exclusive dependence on a singular perspective of one expert interview. Future research should integrate a more diverse array of data sources, encompassing inputs from various experts, studies, and industry reports. This approach would offer a more thorough analysis, ensuring the resilience and reliability of the findings.

## CONFLICT OF INTEREST

OFG and TK are affiliated with the Centre for Digital Health Interventions, a joint initiative of the Institute for Implementation Science in Health Care, University of Zurich, the Department of Management, Technology, and Economics at ETH Zurich, and the Institute of Technology Management and School of Medicine at the University of St.Gallen. CDHI is funded in part by CSS, a Swiss health insurer and MavieNext, an Austrian healthcare provider, and MTIP, a Swiss investor company. TK is also a co-founder of Pathmate Technologies, a university spin-off company that creates and delivers digital clinical pathways. However, neither Pathmate



Technologies, MTIP nor MavieNext was involved in this research.

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