

# Design of Sustainable Business Models Using the Example of the Medical Supply Store

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## Abstract

**Research background and context:** Megatrends, new technologies, increasing customer demands and current challenges in the VUCA world are changing established business models in the German healthcare sector. The global Corona pandemic, which broke out at the beginning of 2020, is seen as a catalyst for the digital transformation of organisations to ensure innovation and competitiveness.

**Purpose/objectives:** This research contribution is intended to show organisations how the digital transformation can be shaped. A sustainable further development of the business model is the key to success. Through the intelligent selection of business model characteristics, added value should be generated for the (stationary) medical supply store.

**Design/research methodology:** In his research project, the author combined secondary data on business models and expert interviews to develop a process model.

**Findings, originality/value and possible practical implications:** In times of disruptive change, serious impacts on established business models will become increasingly common and strategically challenging for companies. Organisations need to understand the most important value drivers for their business, as they have a significant impact on the success of the business model. A digital accompaniment of the customer in the use of the medical product or service is indispensable today. At the same time, the holistic understanding of the customer influences the profiling of the company.

## Keywords

Digitalisation; Transformation; Business Model; Innovation; Medical Supply Store; Healthcare

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## Introduction

The world and the health system are changing. New developments, technologies and markets, increasing customer demands and changing framework conditions are shaping new business models. SARS-CoV2 virus amplified the acceleration of digital transformation (Edvardsson & Tronvoll, 2022; Gaiardelli & Songini, 2021; Jin, et al., 2022). This article examines the design of innovative business models in the context of new forms of (sustainable) market as well as customer interaction using the example of the (stationary) medical supply trade. The "digitalisation" megatrend is influencing all business models, sectors, companies and players worldwide (Brunetti, et al., 2020; Ferlito & Faraci, 2022; Thömmes, 2022). The German healthcare system is also affected by this. Digitalisation holds strategic potential and opportunities if these are used by the organisation and implemented in everyday operations (Brunetti, et al., 2020; Müller, 2019). If digitalisation is not implemented, the company may quickly find itself at a competitive disadvantage. Based on this circumstance, the following question arises: Which business model characteristics can interact to sustainably promote the transformation of the (stationary) medical supply trade? Despite the many approaches to the design of business models, the (sustainable) realisation of value of business models in the context of healthcare as well as their practical implementation is not yet comprehensively understood. There is a lack of methodical approaches to process models that focus on the generation of added value for the (stationary) medical supply store.

The aim of this article is to provide a well-founded list of business model characteristics that can sustainably promote and advance the digital transformation of the (stationary) medical supply store. The workshop-based process model developed is intended to provide practical added value for the company in the operationalisation of business model characteristics. Furthermore, the article is intended to form the basis for related research activities (Burcharth, et al., 2017) in the context of the medical technology sector.

In addition to the introduction, the article is divided into five further sections. First comes the literature review. This is followed by an explanation of the research context and the research methodology used. The penultimate section of the article presents the results, which are subjected to a critical discussion. The article concludes with theoretical and practical implications and points to future research activities.

## Literature review

Digitalisation also affects the traditionally shaped medical supply store, which leads to extensive changes in service policy. These changes relate to an enormous innovation dynamic on the one hand and a considerable customer focus on the other. Both of the latter circumstances lead to the need to illuminate the realignment of the product and service portfolio at a strategic level (Ferlito & Faraci, 2022; Jin, et al., 2022; Kesting & Scherenberg, 2022; Thiebes & Plankert, 2014).

The implementation of digitalisation creates considerable potential from a strategic, operational and financial perspective (Aloini, et al., 2022; Brunetti, et al., 2020; Müller, 2019). Fragmented implementation concepts in the (stationary) medical supply store lead to key competitive disadvantages compared to those players who operationalise digitalisation holistically. These advantages primarily relate to competitiveness and (organisational) profitability (Gaiardelli & Songini, 2021; Jin, et al., 2022; Kreutzer, 2022; Kurek, et al., 2023; Rintamäki & Saarijärvi, 2021).

In addition to digitalisation, the medical supply store is affected by a shortage of skilled workers, persistent supply bottlenecks and high energy costs. The focus of this paper is on digital transformation, but it should be emphasised that the medical supply store is simultaneously affected by other constraints or cross-industry trends. The named circumstances can only be remedied in a fragmented way by strategy concepts (Aloini, et al., 2022; Deckert & Wohllebe, 2021).

Customer centricity is mentioned as a central business model characteristics that should sustainably promote the digital transformation of the (stationary) medical supply store. Absolute customer centricity refers to communication (Alamäki & Korpela, 2021; Balmer, 2017; Ghezzi, et al., 2022), to operational processes and activities, as well as to the organisation's entire range of products and services. The more targeted the aspects mentioned are to the customer segments, the higher the customer benefit turns out to be. With regard to the medical supply store, personalisation and modularisation of the products and services offered is considered a complementary approach to specifically meet the individual needs of the respective stakeholders (Deckert & Wohllebe, 2021; van Boerdonk, et al., 2021). Classic sector and supply boundaries are thus being challenged. Several studies (Balmer, 2017; Dickinson-Delaporte, et al., 2010; Ghezzi, et al., 2022; Jaakkola & Terho, 2021; Rintamäki & Saarijärvi, 2021) have pointed out the importance of absolute customer centricity within the business model. According to this, in the context of the digital transformation, a company changes from being a provider of individual products to a solution provider, which in addition to products also includes personalised services (Deckert & Wohllebe, 2021; Jin, et al., 2022).

In addition to personalised products that require explanation, intelligent products, systems and services are named as a key driver for competitiveness and sustainability. At the same time, stationary trade must also be understood as a digital POS (point of sale). Due to the variety of products and services that require explanation, the medical supply store is predestined to take up innovative and technological opportunities; the keyword here is the customer journey (Hetzze, et al., 2019; Jaakkola & Terho, 2021; Tiffert, 2019). A customer journey - the customer's journey in a networked world - encompasses all of a consumer's touchpoints - from the creation of need to customer loyalty (Deckert & Wohllebe, 2021).

The solution provider is reflected in the approach of the value-based healthcare concept. It consistently combines its own offer with the customer's perspective and benefit. Thus, pure product- or price-oriented parameters are not decisive for the purchase. This new, innovative concept combines the business model characteristics that sustainably promote the (stationary) medical supply store in the context of the digital transformation. In addition to the customer segments, these include above all the value and benefit proposition (Alamäki & Korpela, 2021; Amelung, 2022; Ernst & Steinbeck, 2022; Gaiardelli & Songini, 2021).

This building block of the business model emphasises the creative importance of providing a certain benefit and also communicating this to the individual customer segments. Based on the value and benefit proposition, the importance of another business model characteristics for the implementation of the value proposition is shown. This is the customer relationship between the (stationary) medical supply store and the customer (Alamäki & Korpela, 2021; Amelung, 2022; Osterwalder & Pigneur, 2011).

On the one hand, the customer relationship within the framework of the value-based healthcare concept provides for direct and digital contact points between the actors. On the other hand, the relationship should be characterised by extensive communication (Hetze, et al., 2019), which conveys to the customer that the (individual) demands and needs are taken up as well as implemented by the product and service portfolio (Alamäki & Korpela, 2021; Amelung, 2022; Jäger & Endres, 2022).

For the (sustainable) further development of business models, new methods for generating added value for the (stationary) medical supply store are needed in addition to the PDCA instrument. For this purpose, the business model characteristics must be selected that are most likely to generate added value for the company. In this context, the current state of research shows a gap in terms of content and at the same time also the need for a process model.

### **Research methodology**

The author combined literature-based secondary data on business models with expert interviews as part of a business development project for the (stationary) medical supply store initiated by the Technical Academy Esslingen (TAE). In the first step, generic business models were analysed in the literature in order to gain ideas for the selection of business model characteristics that are conducive to the (stationary) medical supply store. The comparison of the selected studies/authors and the business model characteristics is colour-coded in the form of a matrix. The sum represents the frequency with which the business model characteristic is mentioned. The higher the frequency, the more relevant this characteristic is for the sustainable transformation of the (stationary) medical supply store. Furthermore, existing experience reports from the sector were evaluated using the A3 system according to Toyota. As a selection criterion, it was determined that the business model characteristics are relevant for customers or for the customer's purchase decision. Furthermore, the business model characteristics must be independent of each other. In the second step, the expert interviews were conducted using structural guidelines in the defined period from 10/2022 to 11/2022. The selected elements for the business model adaptation in the (stationary) medical supply store served as a grid for the structure of the interview guide. Each business model feature (revenues/earnings, (communication) channels, customer, CRM, customer value, monitoring/PMS, product/service, technology/innovation and value creation) could be quantitatively assessed using Likert scaling in seven gradations from not at all true (= 1) to fully true (= 7). A total of  $n = 7$  organisations could be recruited. The arithmetic mean (MW), which is part of the descriptive statistics method bundle, was used to interpret and visualise the results. The processed data were analysed using MS Excel. After six months, the expert interviews will be continued and geographically expanded in order to generate representative data. In addition, moderated workshops accompany the business development process of the companies.

The research context is divided into two central components. On the one hand, the business model characteristics exist as a theoretical component. On the other hand, the practical component refers specifically to the (stationary) medical supply store in Germany. The central question of which business model characteristics (according to Nagl & Bozem, 2018) can sustainably promote the transformation of the (stationary) medical supply store in interaction connects the two detected components and the megatrend of digital transformation (Brunetti, et al., 2020). Furthermore, the volatile market is driven by a high innovation dynamic and requires a rethink in management. Stakeholders are increasingly becoming the focus of innovative co-creation of service portfolios (Balmer, 2017; Dickonson-Delaporte, et al., 2010; Edvardsson & Tronvoll, 2022; Ghezzi, et al., 2022; Müller, 2019; Rintamäki & Saarijärvi, 2021). Innovation is considered an industry-independent driver (Ferlito & Faraci, 2022; Flamini, et al., 2022; Jin, et al., 2022; Kesting & Schwerenberg, 2022) of qualitative growth for companies.

A business model can be visualised, independently of the practical and industry example of the (stationary) medical supply store, by the Business Model Canvas (BMC) (Gaiardelli & Songini, 2021; Jin, et al., 2022; Kurek, et al., 2023; Osterwalder & Pigneur, 2011). Furthermore, in addition to the actual analysis of the business model, the BMC model also serves to optimise an existing business model or operational service portfolio of a company. According to the BMC, the business model is divided into a total of nine components (customer segments, customer relationship, channels/experience points, value/value proposition, benefits/revenues, expenses/costs, resources, activities and partners). The business model feature of customer segments shows the customers with the greatest importance and the greatest (strategic

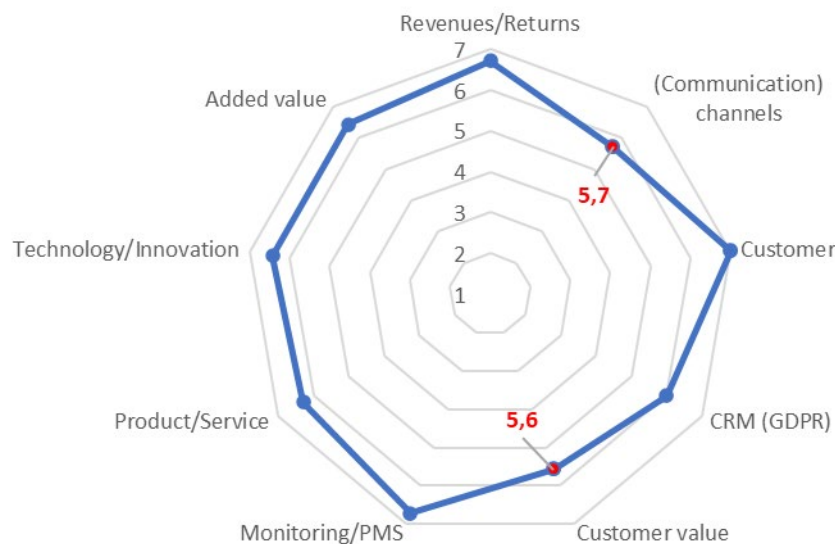
or monetary) benefit for the company. The customer relationship shows the interaction between the company's stakeholders. Via the business model component of channels and experience points, the operational implementation of the interaction between the individual customer segments and the provider of a product or service takes place (Brunetti, et al., 2020; Osterwalder & Pigneur, 2011; Kaschny, et al., 2015).

The central building block of this overview is the value proposition. This is the *raison d'être* of the company or service portfolio. The central question in the value proposition asks which customer needs are fulfilled or which problems are solved on the part of the customer. This results in another business model feature in the form of benefits and revenues. It is an exchange of services between the customer, who provides financial resources, and the company, which fulfils a sustainable value proposition through products or services. The revenues are offset by an internal cost structure and an expenditure of resources. The cost drivers can be assigned to organisational activities (Deckert & Wohllebe, 2021; Kurek, et al., 2023; Osterwalder & Pigneur, 2011).

Activities are required to deliver the value proposition (Rintamäki & Saarijärvi, 2021). The key actions of the company to fulfil the core competencies are found in the business model characteristic of key activities. The implementation of these key activities ensures the value proposition, revenue streams and customer relationships. The key partners represent those stakeholders who implement the USP activities together with the company. In doing so, the key resources support the company's value proposition, monetary revenue streams and customer relationships (Osterwalder & Pigneur, 2011; Rintamäki & Saarijärvi, 2021; Thiebes & Plankert, 2014).

## Results and discussion

The question as to which business model characteristics in combination can sustainably promote the digital transformation of the (stationary) medical supply store is very clearly shown by the evaluated business model characteristics in Figure no. 1 below.



**Figure no. 1. Evaluation results of the business model characteristics**

*Source: Own illustration*

Furthermore, the results underline that a strategic expansion of the two business model characteristics "(communication) channels" (MW = 5.7) and "customer value" (MW = 5.6) is indispensable. This approach follows numerous studies (Alamäki & Korpela, 2021; Brunetti, et al., 2020; Rintamäki & Saarijärvi, 2021; van Boerdonk, et al., 2021) and takes into account the business model feature "Monitoring/PMS", which is of central importance for the practical implementation of the European Medical Device Regulation. The essential business model characteristics primarily include a holistic customer orientation. This orientation

refers to all internal processes and activities as well as to the organisational product and service portfolio (Thiebes & Plankert, 2014) of the company. Accordingly, a further business model feature in the form of a (sustainable) value and benefit proposition goes hand in hand with meeting the individual needs and concerns of customers (van Boerdonk, et al., 2021). This should be complemented by a long-term customer relationship through direct and open communication. It is undisputed that the business model characteristic "(communication) channel" ( $MW = 5.7$ ) is in need of correction.

The business model characteristics mentioned above form the concept of the value-based healthcare approach and enable the (stationary) medical supply store to act as a holistic solution provider instead of a provider of individual products (Alamäki & Korpela, 2021; Amelung, 2022; Jäger & Endres, 2022). The customer expects more than just a product. He expects an individual solution tailored to him. The support of the customer does not end with the purchase of the product, but focuses more and more on the individual use of the medical product.

This article is intended to outline a process model for practitioners in the health care sector that focuses on the further development of traditionally shaped business models. The condensed information can be used to derive initial recommendations for action for the medical supply store.

## Conclusions

The article primarily adds value for practitioners and at the same time contributes to closing the research gap. A workshop-based, systematic procedure model was developed for the intelligent selection of business model characteristics. Furthermore, the economic success of the company is only realised through the innovative, content-related design and linking of the business model characteristics.

The medical supply store must rethink its current strategy and business model and, as a solution provider, (learn to) better understand the problems and challenges of the customer. The focus is on the individual customer and his needs. Since the Corona pandemic, cross-channel customer interaction has moved even more into the organisational foreground. In addition, the customer takes on the role of content supplier, for example in the area of social media. At the same time, a professional approach to the stakeholders and tech players of the FAANG era opens up new possibilities for organisational profiling. This increases customer loyalty, the customer's potential is better exploited and, ideally, profitable growth is generated through co-creation.

The workshop-based process model developed is intended to provide strategic added value in the practical implementation of further business model development - especially for the (stationary) medical supply store. The simple model makes it possible to transfer it to other areas of the company.

In addition to the theoretical and practical implications, the process model outlined also has some limitations. Business models in the health sector are primarily shaped by the legal framework conditions of the respective countries. Consequently, other business model characteristics are more in focus. As a result, the generalisability of the model is partly (geographically) limited. With the application of conjoint analysis, the individual business model characteristics can be linked to a quantitative utility value for the customer. Finally, the author proposes to prepare the results of the workshop in the form of a checklist that can serve as an aid for management.

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