Aspects to consider when introducing IoMT-solutions into the healthcare system in Sweden

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An aging population is putting strain on the Swedish healthcare system. Simultaneously, technological advancement such as Industry 4.0 is moving fast. If healthcare can be leveraged from IoMT-solutions, great potential exists. This master thesis studies aspects to consider when introducing such solutions.

An aging population, rising healthcare costs, and an increase in cases of chronic diseases, are three major challenges that Sweden is currently facing. (Socialstyrelsen 2018) To stand a chance against the negative consequences of these, the healthcare system requires innovative solutions that can provide cost-effective care while maintaining quality standards. Solutions characterized as the Internet of Medical Things (IoMT), might have just the right potential as they utilize emerging technologies and data-driven approaches to healthcare. (Cardona, M et. al 2021)

Purpose

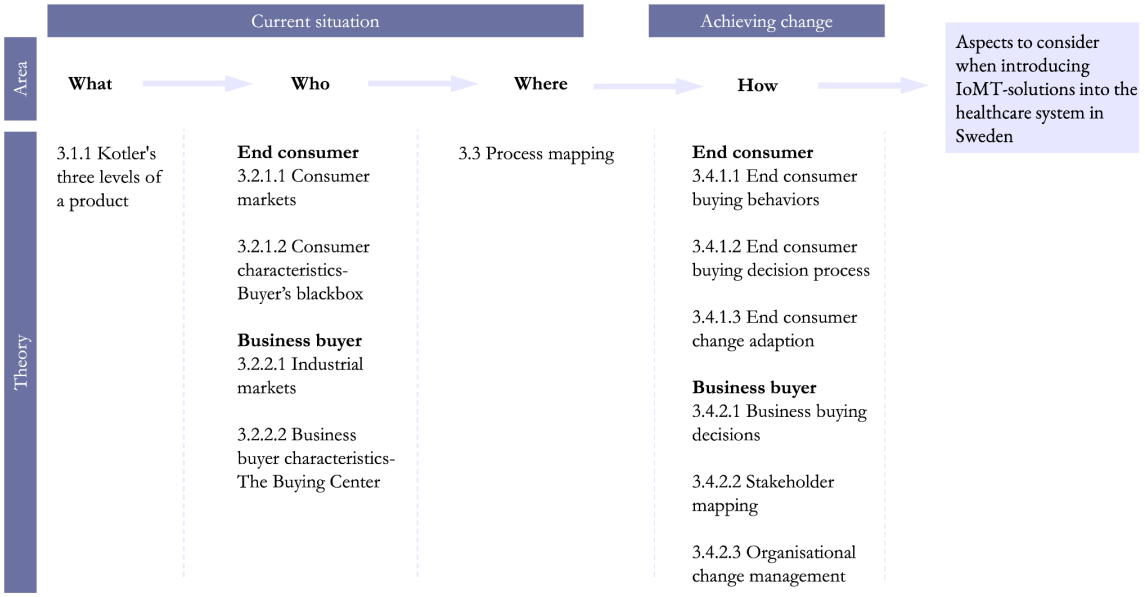
This master thesis has the aim of determining and analyzing aspects to consider when introducing IoMT-solutions into the healthcare system in Sweden.

Method & Theory

The research method used has roots in a interpretivistic and pragmatic philosophy and an abductive approach by a cross-sectional case study. This gave the authors the possibility to construct a literature review that catered to the purpose of apprehending a relevant theoretical framework, and to then collect data by interviews with representatives of identified stakeholders, archival research and relevant documents. The data is then further analyzed by analytical reasoning, comparison and categorization based on the theoretical framework

To structure the study a theoretical framework is constructed as can be seen below in figure 1. This theoretical framework is adapted to holistically fulfill the purpose by a case study of an IoMT-product in a healthcare domain classified as an endemic disease. Which in this case is a bladder sensor applicable for urinary incontinence care. To grasp all aspects surrounding the introduction of the product the structure contains focus areas on the product, the end consumer of the case product, the usage areas and all surrounding stakeholders.

Figure 1 - Theoretical framework



The theory chosen for studying the product itself is Kotler's three levels of a product as it generates a thorough understanding of the different levels of the product. (Kotler et al 2004)

For determining the "Who" different approaches to the End consumer and the Business buyer are relevant. The End consumer involves theories on Consumer markets segmentation and of the Consumers characteristics from the Buyer's blackbox model. (Kotler et al 2004) Regarding the Business buyer that market is demarcated by theory on Industrial markets (Kotler, 2012) and the Business buyer's characteristics are found in The Buying Center in the model of the business buyer's behavior (Kotler et al 2004).

When mapping out the whereabouts of the product and patients in their different journeys process mapping is utilized for visibility. (Jun et. al 2004)

Finally, to arrive at the answer of the purpose theory on "How" the End consumer and Business buyer behave, make decisions and respond to change, is used.

For the End consumer their different behaviors and buying decision processes emulate the theory from Kotler (Kotler et al 2004). To study their response to change both Technology adoption life cycle (Sridharan. M 2017) and Capturing value from innovations (Adapted from Gourville, J 2006) are put to use.

In the case of the Business buyer their buying decisions are studied by the theory of the Three main types of buying situations, Who participates in the buying decisions, The main influences on buyers, and the Eight stages of the buying process (Kotler et al 2004). Further on theory on Stakeholder mapping in the form of The power/interest matrix is used (Johnson 2015). Finally Change management is summarized in

critical success factors for change management (Näslund & Norrman 2022).

The conclusions made about the product and the end users are utilized in analyzing how the buying process of Product X would be formed.

From this, some aspects are solely applicable to the case product, while others can be applied on generic IoMT-solutions. The thesis thereby determines aspects to consider on an operative and strategic level.

Results

The following results are from the master thesis' analysis that is based on data collected in chapter 4 and theory presented in chapter 3, references found in full in the thesis.

Today's UI care is described by relevant stakeholders as a healthcare domain that experiences low priority and treatment in this domain is colored by the quality of life compared to domains where the patients are in more critical conditions. Patients are therefore more involved in what type of solution they want to use in the treatment of their UI. For suppliers aiming to sell to this domain it is therefore important to also target the patient. If patients start requesting the product, medical professionals will become aware of it and they can in a later stage request to purchase the product.

A main aspect to consider when introducing IoMT-solutions to the healthcare system in Sweden on an operative level is the emphasis on stakeholder engagement being critical for the success of the product. With a large and increasing amount of medtech products being developed and launched, it is important to ensure that the different stakeholders comprehend the value of the specific product. As there is no specific, single instance in Sweden dedicated to evaluating medtech products, it is instead many different stakeholders that must be influenced. It is important to keep in mind the needs and interests of different stakeholders, such as patients, medical professionals, and regions. It is also important to keep track of the different stakeholders and tailor the promotion strategy accordingly.

On a more strategic level there are three main aspects to consider:

1 A barrier for the emergence of IoMT-solutions and distance care is the current compensation model for Swedish healthcare. To avoid clinics not wanting to change to procedures where the patient visits the clinic less often, companies wanting to sell these types of solutions need to be active in the debate and lobby for a more appropriate compensation model.

2 The fact that there is currently no clear pathway for how to get a medtech product subsidized is also an aspect that is important to consider.

3 New medtech products arrive to the market frequently. The regions often take the

advice of the MTP and TLV but the two instances only have time to evaluate a certain amount of products per year. Lobbying to make it easier for medtech products to reach the market is therefore needed.

Summary

Overall, the findings offer valuable insights for introducing IoMT-solutions in other healthcare domains in Sweden. The thesis identifies challenges such as a complex procurement process, healthcare's current compensation model and a lack of clear pathways for product subsidies. Also, the thesis emphasizes the need for active engagement with stakeholders and a sense of urgency to drive change. To facilitate the introduction, the thesis recommends sellers to address stakeholder needs, provide evidence of benefits, actively engage in the market, and to tailor the approach to different stakeholders. Developing appropriate clinic routines for the product and leveraging regional initiatives promoting innovation in healthcare is also of importance.

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