Evaluating Digitization Projects in Retail: Presentation of the CIES Model and Call for Research

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Abstract – Stationary retail is increasingly under pressure. Digitization continues to advance rapidly and allows retailers numerous opportunities for innovation. Accordingly, the evaluation and prioritization of digitization projects is a challenge. This paper presents the CIES Model (German original: "KIEN" Model), which was created by Deckert and Wohllebe (2021) for the description of digitization projects. The acronym CIES stands for Customer Benefit, Implementation, Efficiency and Sustainability. According to the inventors of the model, a consideration of these four aspects allows a comprehensive evaluation of digitization projects. The individual aspects are broken down into sub-aspects. Possibilities for practical application are outlined. In addition, there is a call to apply the model in practice-oriented research and to report on the results in research papers.

Keywords – Digitization, CIES, Retail, Project Management, Model, Method

1   Introduction

For many years now, brick-and-mortar retail has been under pressure in many parts of the world. A key driver here is changing consumer behavior. More and more sales are flowing into the online channel; e-commerce is growing. In Germany, for example, e-commerce now accounts for around 12 percent of total retail sales (Statistisches Bundesamt, 2020a). Marketplaces such as Amazon account for a significant share of e-commerce sales (Amazon, 2020). Overall, e-commerce is probably the main growth driver of the market as a whole.

Stationary retail, on the other hand, faces a variety of challenges: For decades, retail space in Germany has risen steadily. Since 2010, however, the figures have stagnated at around 120 million square meters (HDE, 2019). In parallel, productivity per unit area declined for decades. Since 2010, productivity on land has been increasing again (HDE et al., 2019). The background to this is massive market consolidation. Within the last 15 years, the number of retailers has declined by 15 percent (Statistisches Bundesamt, 2020b, p. 21).

For individual retailers, this means a literal battle for existence. In particular, many companies in the retail sector want to - and must - use

digitization to secure their existing business model for the future. Mobile devices play a special role in this (BITKOM, 2011, 2019), in both online and on-site shopping (Wohllebe, Dirrler, et al., 2020). In many cases, retailers already publish their own mobile apps. In particular, loyal customers of a retailer can be tied to the company even better in this way (Wohllebe, Ross, et al., 2020).

In addition, there are many other opportunities along the entire retail value chain to leverage digitization; from physical distribution to product range design, marketing and the payment process to the design of after-sales services (Albers & Peters, 1997).

Digitization also means many new challenges for retailers. Many companies are faced with increasing complexity. Product life cycles seem to be getting shorter (Bayus, 1994; Goldman, 1982), working methods are changing (Wohllebe, 2021) and corporate culture is more and more influenced by digitization (Arimie & Oronsaye, 2020; Diez, 2020). In addition to the competitive pressure that already exists, the importance of sustainability, for example in the ecological or social sense, is also increasing (Deckert, 2020; Morelli, 2013). However, it also becomes apparent that not every digital innovation is automatically also sustainable, especially considering the Rebound Effect (Biewendt et al., 2020; Dorner, 2019; Wohllebe, 2019).

In this complex environment, companies must weigh and prioritize among numerous options for digitization. Which digitization projects are important and urgent, which are rather less important?

A framework for evaluating digitization projects is provided by the CIES model. Deckert & Wohllebe (2021) propose to use this model to consider and evaluate digitization projects under the aspects of customer benefit, implementation, efficiency and sustainability.

This paper presents the CIES model, originally abbreviated "KIEN" in German, for the first time in English. The individual aspects of the CIES model are described and broken down into individual facets. The aim of the paper is to present the CIES model to potentially interested readers from science and practice. In addition, there is a call to conduct application-oriented research using the CIES model and to report on the results in corresponding scientific publications.

2   Presentation of the CIES Model

The CIES model according to Deckert & Wohllebe (2021) is providing a framework for describing and evaluating digitization projects. Originally developed in German as the "KIEN" model, the model is part of a book dealing with the digitalization of retail. CIES is an acronym for "Customer Benefit", "Implementation", "Efficiency" and "Sustainability" (cf. Figure 1).

The authors use the CIES model to describe various technologies and tactics in the context of digitization in retail based on these four aspects. the model is used as a framework to narratively describe various digitization projects in the context of retail. The narrative application of the model allows for relatively free and individualized attention to each CIES aspect. It allows

a simple and at the same time comprehensive consideration of the most important topics to evaluate digitization projects.
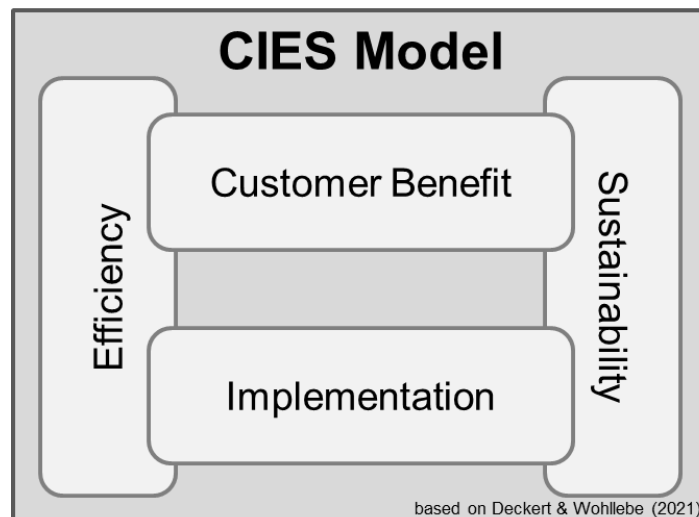

Figure 1: CIES Model, modified taken from Deckert & Wohllebe (2021)

In the following it is described which aspects are mentioned regarding the four elements of the CIES model.

Looking at the customer benefit it is to be investigated how customers can benefit from a certain digitization project. This includes the relevance of the customer problem (Is the problem to be solved really existing and how many customers are facing this problem?), the quality of the solution (To what extend does the digitization project solve the problem?) and the confidence (How surely will the problem be solved?).

Regarding the implementation the aspects regarding the initial setup of a digitization project are covered. This means if the company knows the steps to be taken for the implementation, if there are any experiences from similar previous projects and how much effort the implementation will cause.

When it comes to efficiency CIES model asks for two aspects: One way towards efficiency gains can consist of reducing the input ("less costs" while having a constant output), while the other one can be about increasing the output ("more revenue" while having a constant input).

When it comes to sustainability, the triple bottom line model can be employed (Elkington, 2018). When proposing the CIES model, sustainability is referred to ecological, social and economic aspects. This can include things like saving CO2 emissions, ensuring better working conditions or securing a company's continued existence. The integration of sustainability into the model is not only in keeping with the spirit of the times. Especially against the background of considerations on the introduction of CO2 taxes and similar regulatory instruments, sustainability must be more strongly integrated into business calculations.

Table 1: CIES model aspects and sub-aspects

Aspect	Sub-Aspects
Customer Benefit	Actual existence of the customer problem
	Size of the group affected by the problem
	Suitability of the respective method for solving the problem
	Certainty about the correct functionality of the method
Implementation	Completely known implementation path
	Existence of experience from similar projects
	Estimated scope of the implementation
Efficiency	Decrease of the required input
	Increase of the achieved output
Sustainability	Positive impact on environmental sustainability
	Positive impact on social sustainability
	Positive impact on economic sustainability

Table 1 summarizes which sub-aspects per CIES aspect can be extracted from the discussion of the individual digitization technologies and methods in the original publication.

3 Call for Research Related to the CIES Model

The CIES model provides a comprehensive way to describe digitization projects. In the original publication, this is done primarily in a narrative manner: The CIES model is used to successively characterize different methods and technologies of digitization.

This paper calls for the CIES model to be actively used in business research and for the results to be published.

Two ways of application are particularly interesting. On the one hand, within a company as a tool to support business decisions: Here, the CIES model could be used to characterize and prioritize several alternative actions (different digitization projects) against each other. On the other hand, across several companies to make statements about how specific digitization projects are perceived: For example, the CIES model could conceivably be used in the context of the market launch of new technologies.

In both cases, an empirically driven application of the model would be possible. Accordingly, this paper calls in particular for empirical research based on the CIES model to be conducted and published.

In particular, an approach based on expert assessments would be conceivable. Such approaches can already be found today, for example, in studies conducted according to the Delphi method (Dalkey & Helmer, 1963; Linstone & Turoff, 1975). In order to do justice to the various aspects of the CIES, experts from different categories would probably have to be consulted. Cross-functional teams of this kind have also proven their worth in other areas, especially in IT, when dealing with complex issues (Moses, 2015; Roock & Wolf, 2016, p. 95; Wohllebe, 2021).

4   Summary and Conclusion

This paper aimed to present the CIES model for the first time in an international context. Furthermore, the paper serves as a call for applied research based on the CIES model.

First, the introduction shows in which context and against the background of which dynamics the model was developed. Then the model is presented with its four individual aspects. The foundation for this presentation is the discussion of the various digitization technologies and methods that form the focus of the original publication.

Originally developed in German as the "KIEN" model, the CIES model is part of a book dealing with the digitalization of retail. With its four aspects, the CIES model represents a catchy approach to evaluate digitization projects. It allows a simple and at the same time comprehensive consideration of the most important aspects. The natural integration of sustainability into the model demonstrates the authors' position of sustainability as a full-value criterion in business decisions.

Finally, there is a call to the scientific community in the field of management, digitization and digital transformation: Scientific results from practice-oriented research applying the CIES model, e.g., in the context of digitization projects in business, are requested.

5   Authors

Atilla Wohllebe from Germany researches on consumer-related issues. His research interests include digitization, retail, and specifically the use of mobile technologies in these contexts. He has worked as an employee and freelancer on numerous digitization projects. He contributes to the WR Institute of Applied Sciences and is co-founder of Wohllebe & Ross Publishing.

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