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# **Exploring The Sustainable Business Model Of Digital Platforms**

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## Short Abstract

Building on the relevance that sustainable digital platforms and sustainable business models are assuming in both academia and business practice, this paper explores the theme of sustainable business model of digital platforms and, through a literature review, supplies a first classification of digital platforms based on their value proposition.

## Keywords

Digital platforms, sustainability, sustainable business model, systematic literature review

## Introduction

Issues of economic, social, and environmental sustainability are major challenges that both academia and business are addressing (Evans et al., 2017). Businesses especially play an important role in pursuing sustainability goals to materialize a broader and universally known concept of sustainable development. This mission can be achieved by adopting sustainable business models (SBMs) (Evans et al., 2017; Wells, 2013). A SBM is economically, environmentally, and socially sustainable (Dyllick and Hockerts, 2010): it supports firms not only to achieve fundamental reductions in consumption to safeguard the environment, but also to achieve financial and social benefits by designing and delivering necessary products and/or services (Li et al., 2020).

In addition, the advent of digitization, in all sectors of the economy and society, is helping the development of new business models that are increasingly oriented toward sustainability (Li et al., 2020; Parida et al., 2019). Parida et al. (2019) with their studies, suggest that digitization, combined with the development of new business models, can produce important economic, social, and environmental benefits. In this context, digital platforms with sustainability purposes (definable as sustainable digital platforms) can be an example of a SBM (Kovacic et al., 2020; Meath et al., 2022). Traditionally, digital platforms have been defined as an enterprise that operates and uses the Internet to enable interactions between two or more distinct but interdependent user groups, with the purpose of generating value for at least one of the groups (European Commission, 2015). Digital platforms driven by sustainability (Cane & Parra, 2020) and circularity (Henry et al., 2020; Blackburn et al., 2022) refer instead to platforms with the purpose of generating sustainable value for all groups involved in their use. For example, these platforms aim to minimize emissions, reuse, and recycle resources and

materials through intermediation between different actors (Vo-Thanh et al., 2021; Blackburn et al., 2022). As digital platforms present some peculiar characteristics (such as for example the presence of the user-innovator and the extensive utilization of gratis value proposition – see Battistella et al. 2021) deriving in specific business models, we can hypothesize that sustainable digital platforms can present specific SBM archetypes. However, from a side the literature of digital platforms does not study sustainable digital platforms in depth and with the optic of business models and from the other side in the literature on SBMs there seems to be a lack of studies that help identify their peculiarities, classify these platforms, and understand their functioning from a business model (BM) perspective.

The aim of this research is to conduct a systematic literature review to analyze the SBMs of digital platforms. In particular, this paper aims to identify platforms typologies and propose an initial classification of them based on the purpose-oriented pursuit of sustainability and the value proposition offered. The initial results presented here are the basis for further insights into the peculiarities of SBMs of digital platforms. The next steps will focus on a wider analysis of BM components (value creation, value delivery and value capture), how these are declined in terms of sustainability and, based on this, whether digital platforms can be classified into different typologies/archetypes.

## **Research methodology**

In this study, a systematic literature review was used to collect and analyze articles that have studied digital platforms in the context of SBM; the aim was to classify platforms according to their value proposition and purpose, highlighting connections with sustainability elements.

A systematic literature review was deemed an appropriate methodology because few studies yet seem to explore the connections between digital platforms and SBMs. Although digital platforms and SBMs are two ever-expanding topics to which both practice and theory are paying close attention, there is nevertheless a lack of substantial literature that supports and highlights the elements of connection between the two.

Guidelines proposed by other authors in their studies were adopted to conduct the literature review (Tranfield et al, 2003; Denyer and Tranfield, 2009; Gligor et al., 2018; Comin et al., 2020).

In this study, the five steps suggested by Denyer and Tranfield (2009) were followed: formulation of research questions; location of studies; selection and evaluation of studies; analysis; and, finally, communication of results.

### **Step 1: question formulation**

A systematic literature review requires that research questions are clearly formulated to minimize any possibility of ambiguity or misunderstanding (Gligor et al., 2018).

This study wants to identify and classify the digital platforms presented in the SBM literature based on their first component of BM, that is the value proposition and thus presents the following research question:

*RQ1. How can sustainable digital platforms be classified in terms of value proposition?*

## Step 2: locating studies

Scopus database was used for this study. Within it, many authoritative journals in the field of research were identified, and because of its breadth, it was possible to identify many useful and valid articles for the analysis (Comin et al. 2020).

## Step 3: study selection and evaluation

Two separate search strings were used and then the results were combined to arrive at a final group of articles that were in line with the research objectives.

Publications of both searched strings are filtered as follows. In terms of subject area, all areas related to business and management (e.g., Business, Management and Accounting; Economics, Econometrics and Finance) are maintained, to which Computer Science has been added as an additional research area. Document type was set to article and review. Regarding language, only publications in English are considered. No time limits were used.

The first string used, focused on identifying digital platforms with sustainability purposes, was composed as follows: ( ( "web platform\*" OR "web-platform\*" OR "platform\*" OR "web app" OR "web-app" OR "app" ) AND ( "sustainab\*" OR "second-hand" OR "second hand" OR "waste" ) AND "case study\*" ) and this string was searched in the article title, abstract and keywords.

The second string, focused on the research for digital platforms as sustainable or circular business models, was composed as follows: ( ( "web platform\*" OR "web-platform\*" OR "sustainability platform\*" OR "platform\*" OR "web app" OR "web-app" OR "app" ) AND ( "circular economy" OR "sustainability" OR "corporate sustainability" OR "sustainable business model" ) AND ( "case study\*" OR "business model\*" ) ). The search was carried out in the article title, abstract and keywords.

This process produced 301 results in the first string and 251 articles in the second string.

Subsequently, the overall results were grouped and all duplicate articles in both searches were removed. All those in which the digital platform was not central to the study, those in which sustainability was considered only in residual terms or in terms of gaining sustainable competitive advantages and therefore misleading to our research aim, and finally, articles that did not allow for a docking of digital platforms with the SBM and its elements were not considered. Following this further purification, 30 final articles remained valid.

## Analysis discussion and preliminary findings

Preliminary results from this systematic literature review show that platforms in the context of SBM can be classified according to common purposes, and the different value they offer.

The first cluster contains the so-called circularity platforms. These platforms offer, in terms of value proposition, either lower-priced or second-hand products in the fashion industry with the purpose of slowing down the product life cycle (e.g., Hanry et al., 2020; Yrjölä et al., 2021), or food products with the goal of reducing waste (e.g., Moltene & Orsato, 2021; Vo-Thanh et al., 2021).

The second cluster refers to sharing/collaboration platforms. In this case, the value proposition is threefold. First, some of these platforms offer services that promote reuse. The purpose is to bring together different actors (Lin et al., 2020; Reuter, 2022) to facilitate access to underutilized assets by renting them out or lending them to others (Derave et al., 2020) and the sharing of resources (Menzel & Teubner, 2020). Industrial symbiosis platforms (Fraccascia & Yazan, 2018) fall into this classification. The second type of value proposition concerns information sharing. In food distribution for example, these platforms provide traceability of information to ensure a sustainable supply chain (Accorsi et al., 2020), or enable the surpluses identification, locally or along the supply chain (Mattila et al., 2020; Michielini et al., 2020). The third value proposition concerns the dissemination of knowledge to facilitate co-design with the purpose of sustainability product or service (Hur et al., 2013; Lee et al., 2014).

The third cluster concerns platforms that offer sustainable services. The purpose of these platforms is to raise awareness of the principles of sustainability and circularity (Edvardsson & Enquist, 2011) by offering services that last over time and do not end in a single transaction (Thundatil, 2007). As also indicated in the name, the value proposition of these platforms is service.

The fourth cluster focuses on open innovation platforms for sustainability. The purpose of these platforms is to disseminate innovative and sustainable product knowledge and solutions (Meath et al., 2022), involving not only suppliers but also consumers (Evans et al., 2007; Abhari et al., 2020) in their design and dissemination. Therefore, the value proposition here is products and knowledge.

Finally, the fifth cluster is that of sustainability education platforms. Here the aim is to educate consumers toward responsible consumption (Parth et al., 2021) by training them on sustainability issues (Wagner et al., 2021). In this case, education and learning on these issues can be identified as highly relevant human capabilities that in the corporate world will be able to add value to the pursuit of sustainability, in its triple meaning (Inigo et al., 2017; Santa-Maria et al., 2022). The value proposition of these platforms is learning.

This initial clustering provided a homogeneous classification of platforms and highlighted an initial connection to the first component of SBMs represented by the value proposition, which is one of the elements that can be considered when studying a firm's SBM. The next steps involving this research will focus on identifying the

connections between platforms and the other components of a SBM, namely value creation, value delivery and value capture, which could lead to further subdivisions and insights into these issues.

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