Business model development for sustainable apparel consumption

The case of Houdini Sportswear

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Abstract

Purpose – The purpose of this paper is to identify key aspects of business model development for sustainable apparel consumption, as actors show an increasing interest in product–service systems. This purpose should be seen from a retailers' perspective so as to develop sustainable solutions for long-term survival in the apparel industry when meeting consumer preferences for fashion as well as an increasing interest in consuming less. Further, this is from a perspective in an economy where sharing and circularity are potential drivers for changing consumer patterns.

Design/methodology/approach – The study is based on the apparel retailer Houdini Sportswear and its business model development from a traditional model of selling sportswear to a more future-oriented model where sustainability is more salient. The data for analysis were collected through interviews with employees within the studied company. The interviews have been guided by overarching themes covering relevant areas of interest for this study.

Findings – Overall, the paper shows how sustainability can be included in strategic development, from product idea, product development, production and sales/rental to repair, reuse and finally recycling. The paper also highlights potential obstacles in a developed business model with increased sustainability, including technological platforms, distribution networks for collecting and returning products and consumer consumption preferences. There are a few intertwined factors to be considered on different societal levels to achieve long-term success.

Originality/value – This study contributes an increased understanding of how more sustainable solutions can be included when developing business models. While the manufacture, distribution and consumption of clothes have an impact on the environment, some retailers and producers want to reduce this environmental impact. One alternative is to change the way clothes are consumed, to include more sharing and circularity.

Keywords Business model, Sustainability, Business model innovation, Sharing economy, Apparel industry, Circular economy

Paper type Case study

1. Introduction

There is a growing interest in the sharing economy, involving a need to understand and develop ways to take advantage of the potential benefits associated with this emerging way of doing business. However, the sharing economy or collaborative consumption (Botsman and Rogers, 2010) is nothing new, for example timesharing for collaboratively owning and utilising real estate (Cohen and Kietzmann, 2014), borrowing books from public libraries (Bardhi and Eckhardt, 2012) and carsharing (Habibi *et al.*, 2017). Thus, the sharing economy appears in various types and forms (Boons and Bocken, 2018) and is attracting increased interest, for reasons including the climate change debate, ever-increasing urbanisation, global economic crises, information and communications technology (ICT) and increased consumer

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understanding of sustainable consumption patterns (Lundblad and Davies, 2016; Kathan *et al.*, 2016). Reasons for an awareness of a need to change consumption patterns include several intertwined factors, such as climate change effects (Rockström *et al.*, 2017) and how we live (Rockström *et al.*, 2009), urbanisation and the concentration of economic activities to mega regions (Florida *et al.*, 2008), an increasing interest in consuming less (McNeill and Moore, 2015) and how a sharing economy as a consequence of urbanisation might solve issues of scarce and costly storage (Kathan *et al.*, 2016; Bardhi and Eckhardt, 2012).

In such changes, both the sharing economy and the closely related concept of a circular economy are of interest. Sharing and circularity are not mutually exclusive, but they are two different concepts that work in parallel. Sharing relates to consumption or the use of specific products, that is access on demand without ownership (Hobson and Lynch, 2016), for example clothing or fashion libraries where members subscribe for various fashion packages (Zamani *et al.*, 2017; Pedersen and Netter, 2015). Circularity, however, relates to a restorative manufacturing system built mainly on use, maintenance, reuse, remanufacturing and recycling, with an environmental impact as low as possible, that is minimised leakage to landfill (EMF, 2013; Geissdoerfer *et al.*, 2017; Lieder and Rashid, 2016). Although sharing does not *per se* mean the same as benefits from a socio-environmental perspective, but it needs to be seen in conjunction with circularity to gain momentum in a concept where a business lowers its environmental impact (Hobson and Lynch, 2016). The driving forces mentioned above may be reasons for companies to rethink their current business models, to better adapt to a changing business landscape and create competitive advantages. Thus, developing a business model for increased long-term sustainability should consider both a sharing economy and a circular economy (Pieroni *et al.*, 2019). Although according to some studies there seems to be no unanimity on how sustainability should be implemented in a company's business (Bocken *et al.*, 2014; Boons and Lüdeke-Freund, 2013), others propose a more strategic approach, for example design (Manzini and Vezzoli, 2003). When rethinking the company's current business model to include more sustainable solutions, the company's ability to generate enough profit for long-term survival and secure enough financial strength must be taken into consideration (Chesbrough, 2007).

The apparel and fashion industry is one industry that is attracting an increased interest in studies relating to sharing and/or circular economies (Pedersen and Netter, 2015; Zamani *et al.*, 2017). It is known that the production of clothes has major negative environmental impact (Niinimäki and Hassi, 2011; Roos *et al.*, 2015). A recent study of fashion customers views on collaborative consumption finds support for more sustainable consumption of fashion, even though the underlying values of customers as a driving force are not clear and consistent (Becker-Leifhold, 2018). The trends of fast fashion mean that clothes are not in use as long as they technically could be used (Zamani *et al.*, 2017), and this is one reason for the major environmental impact of the production of clothes (Niinimäki and Hassi, 2011; Roos *et al.*, 2015; Zamani *et al.*, 2017). Studies of the clothing market have been carried out, focusing on consumer profiles (Cardoso *et al.*, 2010), consumer values and behaviour (Becker-Leifhold, 2018), customer relationships (Reynolds and Beatty, 1999), sustainable stewardship (HaeJung *et al.*, 2015), innovation and sustainability (Weissbrod and Bocken, 2017), opportunities with fashion libraries (Zamani *et al.*, 2017; Pedersen and Netter, 2015), product and maintenance responsibilities (Armstrong and Lang, 2013; Tukker, 2004), design (Kozlowski *et al.*, 2018), and there are also examples highlighting challenges within the fashion industry described by the Ellen Macarthur Foundation in the case of Better World Fashion, a Danish company specialising in leather jackets (EMF, 2018). Further, there are related studies of design strategies for sustainable production and consumption of textiles (Niinimäki and Hassi, 2011), sustainability and luxury fashion (Achabou and Dekhili, 2013), consumer buying patterns in new consumer countries (Koszewska, 2013), slow fashion and sustainability (Jung and Jin, 2014) and meeting consumer needs in a developing smart city (Burnes and Towers, 2016).

Studies within fashion are mostly production oriented (Lundblad and Davies, 2016), and the field would benefit from studies considering a retailer perspective, that is long-term business survival within the apparel and fashion industry, and utilising, adapting and influencing changes in customer perceptions and values. Lundblad and Davies (2016) found support in their study on values and motivations in fashion consumption for consumer interest in sustainability issues and concerns such as buying less frequently. This indicates a necessity for businesses within the fashion industry to consider alternatives to growth through volume and fast fashion such as a more life cycle-oriented approach to their products, from design to recycling. One idea is the potentials of "strategic design for sustainability" (Manzini and Vezzoli, 2003, p. 856) as an expression to develop a product–service system (PSS), consistent both from an economic as well as a sustainable perspective (Manzini and Vezzoli, 2003). Findings by Pedersen and Netters (2015) indicated that fashion libraries business model is vulnerable and dependant on voluntary work from employees and the owners needing to develop alternative sources of revenues. However, "[…] an opportunity to experiment with styles and looks without having to pay full price" is on the positive side (Pedersen and Netter, 2015, p. 270). It means that customers for a relatively small amount of money can discover and test new and different fashion to express themselves. Growing consumer interest in sustainability in the apparel industry (Lundblad and Davies, 2016) is also on the strategic agenda for international organisations like the EU, the OECD, the UN and governments in Germany, the Netherlands, Japan, Finland and Sweden who have taken initiatives and established goals for a circular economy (SOU, 2017), which signals potential changes as well as opportunities for entrepreneurs within the apparel industry.

Niinimäki and Hassi (2011) addressed how new values can be developed "[…] in the product or its use through service thinking" (Niinimäki and Hassi, 2011, p. 1882). Following this reasoning and a "[…] radical new mindset and change needed in textile […] business and consumption" (Niinimäki and Hassi, 2011, p. 1876), together with unanimity on how sustainability should be included in a company's business (Bocken *et al.*, 2014; Boons and Lüdeke-Freund, 2013), this paper aims to:

> Identify key aspects of business model development for sustainable apparel consumption as actors show an increasing interest in product-service systems.

To meet the research aim, the paper begins in the general constituents of a business model. By linking business model with business model innovation and barriers to business model innovation with sustainability, this study seeks to identify key characteristics important in the design of a successful sustainable business model through an integrated PSS. Further, the methodological perspectives and aspects of the study are presented and discussed, followed by the empirical data used for the study. The single-case study shows how clothing companies can develop their current business models into business models where a sharing economy and a circular economy face the challenges for companies' long-term survival. The case is used to provide a more holistic perspective to address business model innovation with a vision to include more sustainable solutions and to discuss key challenges in business model development. The analysis is structured around characteristics of sustainable business model innovation as identified in the literature review. Finally, the paper concludes by presenting identified key challenges in business model development when there is a vision to include more sustainable solution in a company's current business model.

2. Business model innovation, sustainability and product–service system

There is extensive academic literature on business models (Zott *et al.*, 2011; Foss and Saebi, 2017), which increased dramatically in connection with internet-based businesses around 2000 (Magretta, 2002; Foss and Saebi, 2017), explaining how a company's business should be structured, how to make the company profitable and what constitutes customer values

(Osterwalder and Pigneur, 2010; Mason and Spring, 2011). A business model develops in interaction between actors at different levels (Mason and Spring, 2011), similar to the development of business networks (Anderson *et al.*, 1994). Here, the main focus will be on the development of the business model at the company level, that is how a company configures its offerings to specific markets (Chesbrough and Rosenbloom, 2002), using its resources and capabilities to create a competitive advantage for long-term survival (Teece, 2010).

2.1 Constituents of a business model

Several authors discuss the constituents of business models (e.g. Bohnsack *et al.*, 2014; Zott *et al.*, 2011; Mason and Spring, 2011; Osterwalder and Pigneur, 2010; Amit and Zott, 2001; Chesbrough, 2007; Magretta, 2002). According to Chesbrough (2007), a business model builds on six main elements: value proposition, market segment, value chain structure, streams of cost and revenues, value-network position and competitive strategy. Overall, the definition of a business model varies, and it is sometimes left to the reader to find out (Zott *et al.*, 2011). However, using these elements as parts of a generic business model serves as a framework for studies within an industrial context such as the apparel industry.

Chesbrough (2007) stated that the overall value proposition consists of the clothes, their design and their functions for customers. Market segments identify potential customers using the products and integrated service for a destined purpose. The organisation of the value chain structure traces the fulfilment of the company's business, in principle from raw material, through production, to customers for use and reuse until the material is recycled. Revenues and cost matching, together with mechanisms driving both revenue and cost streams, are important for the business model to be profitable and for the long-term survival of the company. In a generic business model, an awareness of the company's position within the value network is also important to understand its current and future business potential. Together with a competitive strategy, a company identifies what it does better than its rivals, what creates its uniqueness and how this is advantageous over time. With the aim of this paper, these building blocks serve as framing the analysis and discussion of the development of a business model with increased levels of sustainability.

2.2 Business model innovation

In a competitive environment, one major challenge is to develop a business so that it creates value beyond what competitors offer, preferably in a more favourable way. Companies selling products, and possibly also producing these goods, have seen service as one potential path for growth (Kindström, 2010; Jacob and Ulaga, 2008). Developing products with the inclusion of services has several dimensions, such as the process of developing services (Kindström and Kowalkowski, 2009), quality and loyalty (Lin *et al.*, 2015) and collaboration within networks together with technological development (Tambo, 2014). The transition towards a business model including more services requires an organisation that can drive change, including a governance structure to combine assets and reconfigure these resources (Teece, 2010). Thus, we can conclude that companies develop their business models as a means to stay competitive. Further, to capture changes in the corporate landscape, a business model needs to adapt to these changes. Casadesus-Masanell and Ricart (2010) identified globalisation, ICT and emerging market strategies as important factors driving change in business model development. Massa and Tucci (2013) added sustainability as a phenomenon to be considered in business model innovation.

Business model innovation involves the company's understanding of its context and its current position within this context. Managing business model development includes an understanding of how the industry develops (Giesen *et al.*, 2007) and the effect of industry structure, that is business model innovation takes place in larger firms to a greater extent (Waldner *et al.*, 2015), but there are contradictory findings on how industry life cycle plays a

role in business model innovation, whether in early industry life cycles (Waldner *et al.*, 2015) or at later stages (Massa and Tucci, 2013). It is also important to consider how this affects and develops current and potential revenue streams, and what is unique about the company's current strengths and assets in terms of the company's development (Giesen *et al.*, 2007; Boons and Lüdeke-Freund, 2013; Teece, 2010). With a dynamic approach, a business model is a vehicle for change as the model develops over time in relation to its competitive environment (Mason and Spring, 2011; Osterwalder and Pigneur, 2010). The extent to which model development can be imitated is important when developing a business model (Chesbrough, 2007), that is a company needs "to think hard about how to sustain and innovate its business model" (Chesbrough, 2007, p. 15). This means that there should be an effort to develop the business model so that competitors and others find it difficult to copy and use the business model for their own purposes.

2.3 Including sustainability in a developing business model

Sustainability can be included in the innovation of a company's current business model in two ways: changes can occur through the company's business practice/production processes or through products developed with new sustainable technology (Massa and Tucci, 2013). As major problems within the apparel industry become more apparent, such as carbon emissions, water usage and potential pollution problems, together with increased customer concern for environmental issues (Niinimäki and Hassi, 2011), actors within the industry have focussed increasingly on sustainability to meet the industry's need to become more sustainable (McNeill and Moore, 2015) and to develop business models that also consider sustainability (Stubbs and Cocklin, 2008). This includes a need to develop the organisation's internal structure as well as collaborating with external stakeholders to achieve sustainability on a system level (Stubbs and Cocklin, 2008; Miles *et al.*, 2005). Business model innovation for sustainability can be defined as follows:

> Innovations that create significant positive and/or significantly reduced negative impacts for the environment and/or society, through changes in the way the organisation and its value-network create, deliver value and capture value (i.e. create economic value) or change their value propositions. (Bocken *et al.*, 2014, p. 44)

This definition proposes change as a key parameter. Changing a business model is at the core of a company's strategies and requires top management involvement (Bucherer *et al.*, 2012). While strategic change is an extensive area to review, we will only partially discuss strategic change here. Change can be described through two major processes: episodic change and continuous change (Weick and Quinn, 1999). Episodic change is seen as a dramatic change driven by external forces, which occurs infrequently, whereas continuous change involves recurrent reactions and contingent adaptation to emergent evolving patterns in a company's business landscape (Weick and Quinn, 1999). Yet, from both internal and external points of view, driving forces for business model innovation can mean capturing opportunities and/or a need to avoid upcoming threats (Bucherer *et al.*, 2012). Thus, business model changes can follow various patterns that must be dealt with through the involvement of top management, which in many cases has ownership of business model development since it has traditionally been seen as a non-recurrent issue.

2.4 Barriers to business model innovation

The barriers to business model innovation should also be considered. These barriers can be divided into three broad categories: regulatory barriers, market and financial barriers and behavioural and social barriers (Laukkanen and Patala, 2014). Regulatory barriers are structural constraints, meaning that there is a lack of regulations or legislation supporting sustainability issues, or a lack of initiatives from societal institutions for more sustainable business development

(Massa and Tucci, 2013; Laukkanen and Patala, 2014). Market and financial barriers are also a constraint through a sense of high risk or low reward for sustainability, or low appreciation and value from market actors, for example customers, of more sustainable products, technology and services (Massa and Tucci, 2013; Laukkanen and Patala, 2014). Increasing customer awareness of the benefits can primarily be seen as a marketing problem, but it should be balanced with financial concerns. Behavioural and social barriers illustrate the attitudes and values of various stakeholders, both internally (such as leaders and managers) and externally (such as customers), which – together with business and societal culture – form the constraints to overcome for more sustainable business model innovation (Laukkanen and Patala, 2014).

Other constraints to business model innovation are competitive pressure within the industry, which makes business model development less innovative (Waldner *et al.*, 2015), the cost structure (Boons and Lüdeke-Freund, 2013) or the technology used, which is more expensive than traditional technologies (Massa and Tucci, 2013). Further, Saebi *et al.* (2017) emphasised that adaptations or changes to a company's business model rather follow from threats than from opportunities. Thus, to overcome barriers to business model innovation, the companies need, as addressed above, to understand and capture changes in the competitive environment (Bucherer *et al.*, 2012).

2.5 Developing a sustainable business model through an integrated product–service system

For companies to continue delivering value to their customers and thereby staying competitive, their models have increasingly been centred around an extension of the product offering that also includes various kinds of services, so-called integrated PSS (Durugbo, 2013; Tukker and Tischner, 2006). PSSs have the potential to both improve a company's competitive position and contribute to increased sustainability, but this requires a business model that is well designed for this purpose (Tukker and Tischner, 2006), that is a focus on customer needs (Niinimäki and Hassi, 2011).

Implementing a PSS involves both constraints and potential benefits. Armstrong *et al.* (2015) identified customer perceptions of PSSs for clothes, with both benefits and barriers. Financial issues were on the positive side, that is a reduction in purchasing clothes and the possibility to change clothes or the potential for lower material use due to longer product life cycles. In terms of barriers, trust in the service provider was identified as an important aspect to address, for example how deliveries would be carried out, product hygiene and how easily the service can be used both technically and practically (Armstrong *et al.*, 2015).

Thus, developing a sustainable business model within the apparel industry has its challenges, not only to integrate PSS within the industry – which requires a changed customer mindset (Armstrong *et al.*, 2015) – but also to understand how the sharing economy as a phenomenon can enhance this process (Tukker, 2015). Boons and Bockens (2018) emphasised on the importance to understand sharing business models for two reasons: in what way and to what extent a sharing business model will have an effect on the economy, and can a sharing business model be implemented without unexpected consequences in the economy. From a perspective of lower consumption, that is in a sharing economy, less can be produced to fulfil the same utilisation of every single product through the implementation of a PSS. Less can be produced, but what is produced needs to be done more effectively. The latter can be achieved by manufacturing companies, for example implementing production equipment which is more efficient than previous equipment and gives a better product in terms of resource utilisation, quality, price, etc.

Meeting future challenges and continuing to develop societies with lower environmental impact (Schaltegger *et al.*, 2016; Tukker, 2004) within the apparel industry involve a need for companies to decrease their use of resources, primarily energy, raw materials, water and chemicals (cf. Armstrong and Lang, 2013; Massa and Tucci, 2013). With lesser use of such resources, the environmental impact will be lower. This has

two major implications: producing less and being more efficient in production. A consequence of less production is that in order to achieve the same or increased use of products, these products can be shared/rented/leased, sold second hand and repaired. More efficient production reduces environmental impact through recycling material and using resources more efficiently (Lieder and Rashid, 2016; Niinimäki and Hassi, 2011). In general, a business model with a sustainable orientation uses the same building blocks as a generic business model. However, our review shows that including sustainability in business model innovation results in the characteristics described in Table I.

Concept	Key characteristic including sustainability in business model innovation	Author(s) – alphabetical order
Continuous development	A business model must develop continuously to create value beyond what competitors offer and must understand how the business itself develops over time, and it must take this into consideration for a contemporary development of the business model	Armstrong *et al.* (2015), Casadesus-Masanell and Ricart (2010), Chesbrough (2007), Manzini and Vezzoli (2003), Mason and Spring (2011), Massa and Tucci (2013), Niinimäki and Hassi (2011), Pedersen and Netter (2015)
Revenue streams and profitability	A need to understand in greater depth how a developed business model changes its current revenue streams to secure and identify future revenue streams to achieve long-term profitability	Bocken *et al.* (2014), Boons and Lüdeke-Freund (2013), Chesbrough (2007), Giesen *et al.* (2007), Mason and Spring (2011), Osterwalder and Pigneur (2010), Teece (2010)
Product–service system development	A transition from mere products to including more services, that is developing a product–service system, benefits a sustainable business model development	Armstrong *et al.* (2015), Durugbo (2013), Jacob and Ulaga (2008), Kindström and Kowalkowski (2009), Kindström (2010), Manzini and Vezzoli (2003), Niinimäki and Hassi (2011), Tukker and Tischner (2006), Tukker (2015)
Collaboration	Developing a business model including sustainability requires collaboration with external actors for an impact on a system level	Miles *et al.* (2005), Niinimäki and Hassi (2011), Stubbs and Cocklin (2008), Tambo (2014)
Resources and capabilities	Developing the company's business, taking into consideration processes, products, technology and future investments with reduced negative environmental impact	Armstrong *et al.* (2015), Casadesus-Masanell and Ricart (2010), Egels-Zandén *et al.* (2015), Kozlowski *et al.* (2018), Mason and Spring (2011), Massa and Tucci (2013), Mol (2015), Tambo (2014), Teece (2010), Zamani *et al.* (2017)
Capturing change	A need for management that can steer the company through both episodic and continuous changes to capture patterns of change in the corporate environment	Bucherer *et al.* (2012), Giesen *et al.* (2007), Teece (2010), Weick and Quinn (1999)
Identifying barriers	Management capacity to identify and address barriers for business model innovation, in terms of handling and adapting to regulatory barriers, market and financial barriers, and behavioural and social barriers	Bucherer *et al.* (2012), Laukkanen and Patala (2014), Massa and Tucci (2013), Waldner *et al.* (2015)
Efficiency	Adding sustainability to business model factors such as producing less and being more effective in production will enhance the business model towards increased sustainability	Armstrong and Lang (2013), Lieder and Rashid (2016), Massa and Tucci (2013), Schaltegger *et al.* (2016), Tukker (2004)
Customer perspective	Customer attitudes, behaviours and preferences must be understood, and the company must have a strategy to work with these to influence customers towards more sustainable consumption patterns	Armstrong *et al.* (2015), Becker-Leifhold (2018), Kathan *et al.* (2016), Laukkanen and Patala (2014), Lin *et al.* (2015), Lundblad and Davies (2016), McNeill and Moore (2015), Niinimäki and Hassi (2011), Pedersen and Netter (2015)

Table I. Characteristics of business model innovation including sustainability

After presenting the research method the following section illustrates how a company within the apparel industry, Houdini Sportswear, with a brief one-line vision "Maximum experience. Zero impact", designs its products with sustainability and functionality at its core to create values beyond the products themselves, and how the development of the company business model can be an important part of this. As shown above, sustainability is increasingly important for a company's long-term competitive development, and potential barriers must be addressed and overcome to be successful. The section after material and methods illustrates how, on a micro level, a company can initiate and work with PSSs to develop a sustainable business model in the apparel industry.

3. Material and methods

The study is based on the apparel retailer Houdini Sportswear and its business model development from a traditional model of selling sportswear to a more future-oriented model where sustainability is more salient.

3.1 Selecting a single case

The reason for studying Houdini Sportswear's business model development towards increased sustainability is that, being a single case, it provides insights (Siggelkow, 2007) into a company that clearly states in its vision that sustainability is important: "We want to help people experience more, perform better and have more fun. Without leaving any impact on the environment. This is our vision" (Houdini, 2017). Single-case studies provides a unique possibility to study phenomenon which may be complex and embedded in a certain context (Eisenhardt and Graebner, 2007; Halinen and Törnroos, 2005). This leads to interesting thoughts about how a company can not only create a vision of sustainability but also ensure long-term performance. Thus, we will use this example to add to existing knowledge of how sustainability can be implemented and further developed in business model development, with relevance not only for scholars but also for management (Gibbert *et al.*, 2008). Choosing the case itself requires some concern when studying a single case (Siggelkow, 2007). The reason for Houdini as a choice is twofold: first, an opportunity to look into a company which clearly states its sustainability and purposefully tries to implement this strategy from product innovation to disposal of products and, second, to take the opportunity to analyse this company and provide, hopefully, an interesting case. This adds to some research streams identified by Pieroni *et al.* (2019) who encouraged research with a holistic view of business model innovation as a continuous process as well as empirical studies to add to a theoretical development of business model innovation.

3.2 The research process

The study was conducted during spring 2017 in Sweden, and the data for analysis were collected in two phases. The first phase primarily focussed on getting to know the company and its potential challenges to include increased sustainability in its business model. The second part focussed mainly on a deeper understanding of the current business model and its potential developments and challenges. To provide a rigorous case study, data were collected mainly through interviews, but other material as company documents were also used to increase the understanding of the company and its context. In the first phase, the interviews were unstructured. The number of respondents in Phase 1 was ten, and they were holding positions like sales managers, marketing manager, head of communication, CFO, accounting manager, head of design, fabric engineer, key account manager and e-business developer. In the second phase, the interviews were semi-structured, guided by an inquiry form in order to direct and ensure that all relevant areas were covered (McCracken, 1988; Yin, 2003). The number of respondents in Phase 2 was six, and they were

holding positions like store managers, sales manager and project manager. In total, 16 interviews were made with Houdini, which in total had 42 employees at the time of the interviews. The questions in the interviews followed an interview guide comprised of the following overarching themes: introduction and general information, customers, market channels, value propositions, processes, time-related issues concerning rental, customer interaction, general service, logistics, co-operations, challenges and future opportunities.

The data during the first phase were collected through research notes, and in the second phase, the interviews were recorded and research notes were taken, in order to facilitate the review of the case material (Gibbert *et al.*, 2008). This sampling of respondents includes individuals whose positions offer the possibility to influence how the company develops and performs, as well as contributing to this development and influencing it through the daily operations (Siggelkow, 2007). Although the number of respondents may seem low, they cover almost 40 per cent of the number of employees, which provides a relatively good overview of the company's business from different perspectives.

3.3 Data analysis

The data were analysed through a continuous "confront[ing] theory with the empirical world" (Dubois and Gadde, 2002, p. 555), that is theories need empirical observations to be understandable and likewise the opposite (Dubois and Gadde, 2002). This means that there is an iterative process in building the study from an initial understanding of the phenomenon and the theories used to be sharpened and developed over time along with the progress of the study. The study can be classified as instrumental, that is the case is used to understand the development of business models on a more common level (Stake, 2003). Thus, the case illustration is used to develop our understanding of how business models can evolve and advance under changing conditions (Eisenhardt and Graebner, 2007; Siggelkow, 2007).

The case has been analysed on the basis of the theoretical framing of business models and on business model innovation related to sustainability including elements of a sharing economy and a circular economy. Thus, the material building up the case has been analysed through identification and coding of the relevant and related activities to the development of a business model with increased focus on sustainability as identified in the literature review. This is an intra-case analysis to gain insights into the studied phenomena (Eisenhardt, 1989), illustrating the development patterns of a sustainable business model. The study may have some limitations, if the company adopts an overly positive attitude towards the potentials of a long-term profitable business model in a sharing economy. Also, the implementation of service in apparel business models is fairly new, which means there is a lack of knowledge about long-term performance to understand if this is a possible development towards sustainable business models within this industry.

4. Sustainable business model development in the apparel industry

Houdini Sportswear (Houdini) is a Swedish privately owned apparel company founded in 1993, with functional clothing for outdoor use as its core business. Houdini is an SME with about 40 employees, and it had a yearly turnover of 166 MSEK for the financial year 2017/2018 and a high 25 per cent yearly growth ambition for existing markets. It achieved 20 per cent growth for the past three years since 2014. The market for outdoor functional clothes faces growing competition with more actors entering the market, and products are showing increasing similarity. For Houdini, the main markets are Sweden and Norway, but the company is also represented in other markets, such as Germany, Austria, Japan, China, the USA and Canada. The market itself is also growing, following trends for active holidays and other leisure activities combined with a trend for functional outdoor clothes in an urban society. These are identifiable trends and new customer segments for Houdini; however, the main customer segment consists of people from an educated background in their 40s with

an active or previously active outdoor lifestyle. Another large customer segment is the outlet segment, with customers who find quality and function important, combined with an interest in sustainable outdoor clothing alternatives. Although the company's distribution channels are retailers, own stores, outlet sales, e-business and sales through partners, most sales are through retailers. Figure 1 illustrates a timeline for introduced strategies described in the case.

4.1 The current business model

With the statement and vision from Houdini, of zero environmental impact, to reduce effects on nature, the company has reviewed its business model to include more sustainability and circularity. The company has, however, expressed challenges to reach this goal, for example to produce on demand to reduce overproduction, to secure the whole clothing use chain, to ensure that the clothes are reused, to recycle products when they are worn out and to let customers rent clothes instead of buying them. Renting instead of buying would secure returned products to be used again or recycled.

The current business model focuses on the sale of different types of clothes for functional use, and sustainability is an integral part of the business model through its so-called re-projects. The re-projects consist of four interlinked service areas: recycle, reuse, repair and rental. The main purpose is to underpin Houdini's value offerings and the ambition for more sustainable fashion consumption. In the recycle project, the company collects worn-out polyester clothes to transform old garments into new garments. The repair project intends to extend the product life cycle by offering a repair service. To increase the possibility to repair clothes, this also has to be a part of the design process, that is designing repairable clothes. The rental project offers a rental service for outdoor clothes, that is instead of buying clothes, they can be rented for a skiing vacation. This service can also be seen as a way into the Houdini brand. Customers can test clothes before considering to buy them, but a rental service supports increased usage of clothes compared with owning specific clothes for seasonal use. The last of the re-projects is reuse, meaning that the company offers second-hand sales of used Houdini products. The company also encourages customers to sell their second-hand clothes themselves on resale websites.

Together, these re-projects aim to reduce garment consumption, but not necessarily the use of products which can achieve higher usage when rented and a longer product life cycle when repaired or reused, and the recycling project aims to reduce wasted materials which can potentially be turned into new garments. From a financial perspective, the goal for the re-projects is to account for 10 per cent of the company's overall turnover by the financial year 2021/2022, which at the intended growth rate would equal 35 MSEK.

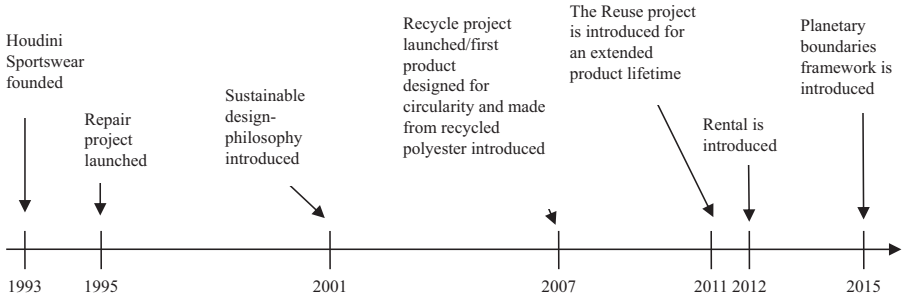

Figure 1.
Timeline of introduced strategies as described in the case

Source: Houdini (2018)

The ambition to change a business model towards more sustainable consumption may at first sight be low, but to gain momentum, some challenges must be met. Actors within the apparel industry affect the environment through production processes, transportation of products and when worn-out products are thrown away. These are challenges Houdini tries to address in various ways.

4.2 Producing and developing fabric and garments to support a sustainable business model

In 2001, the company implemented a new philosophy when designing new products, applying a long-term focus on sustainability when it comes to both the quality of the product and the environment. The implemented product development philosophy revolves around a set of questions for review, mainly in the following areas: potential use of the product for different types of activities, sustainability in terms of the environment, quality and style, timeless quality and design for long-term utilisation of the products, the absence of unnecessary details and a design that enables the product to be repaired if needed.

The production process is monitored through a transparent relationship with garment suppliers. Advantages of transparent relationships with suppliers have been discussed in the literature as well, for example trade-offs between compliance and cooperation (Egels-Zandén *et al.*, 2015), and the logics of value chain transparency (Mol, 2015). For Houdini, the transparent relationship with the garment suppliers provides information on production processes and develops the use of sustainable materials in product design, for example including Lyocell-based materials made from wood pulp in the production of fabrics. Working in transparency with the company's suppliers means that the suppliers of garments and fabrics provide full information about their production processes and the origins and sources of the materials used. Houdini garments are currently produced in seven different countries: Latvia, Estonia, Poland, Lithuania, Portugal, Austria and China. The fabric suppliers come from eight countries: the USA, Japan, Italy, Taiwan, Germany, China, Sweden and Switzerland. All the garment and fabric suppliers are visited several times a year. A transparent supplier relationship is a requirement to be able to control and follow the value chain from raw material to finished products.

Another approach for a more sustainable view of its business impact is openness towards competitors, and it is exemplified by a new material developed as an alternative to less environment-friendly fabric, that is Houdini has no patent pending on their developed fabric. This means that – given the focus on sustainable materials – there is the potential for other actors within the industry to use and develop their products, following Houdini's vision of developing more sustainable clothes or other products made from this type of fabric. The overall ambition of this strategy is that more companies within the industry will follow Houdini's example and use fabrics with more sustainable content.

To better understand its environmental impact, Houdini has introduced a framework to try to identify this impact. This framework is one step in a holistic model to understand the environmental impact in the value chain and to enhance the company's sustainability performance. To assess the environmental impact of the company's business from a more holistic perspective, the planetary boundaries framework was developed by Rockström *et al.* (2009), updated by Steffen *et al.* (2015) and introduced in 2015 to provide a deeper understanding of important issues in product development and production processes (Houdini, 2018).

Houdini also has a strong vision to implement elements of a circular product life cycle into its business model. One step towards this is the development of recyclable garments together with Houdini's suppliers. In 2007, the company introduced its first product made from recycled polyester. Recyclable materials mean that the garments decompose and are recreated as new garments, using what has already been produced instead of producing entirely new materials.

4.3 Developing customer relationships to support a sustainable business model

To strengthen the relationship with its customers and to create a feeling of belonging to a community of people who like to spend time outdoors, Houdini arranges so-called Houdini Hangouts. These events are arranged to inspire people to spend more time in nature, hopefully also with an increased interest in protecting the environment, and to strengthen the customer relationship. Another channel for stronger customer relationships linked to the community idea is Houdini Friends. These influencers, who act as brand ambassadors, are active athletes – skiers, snowboarders and climbers – or other active outdoor professionals – wildlife photographers. Together, Houdini Hangouts and Houdini Friends aim to increase interest in an active outdoor life and in quality products for elite performance. They also have the higher goal of being able to enjoy nature over a long time, generation after generation, with less environmental impact.

How far has Houdini reached in its efforts to create a more sustainable business model? The recycle project collects used Houdini clothes that customers hand in. If the clothes can still be used, they are sold as second hand in the reuse project. Worn-out polyester garments will be recycled into new fabric and eventually new garments. Repairs can be carried out in Houdini stores or by a local tailor who can obtain spare parts from Houdini. The other two projects described above, rental and reuse, will be developed further, since they are the most important bricks for a business model with the potential for a sustainable impact. The rental service will allow customers to rent clothes – not all types of clothes, but a range of garments that are potentially used infrequently, such as shell layers. One benefit for customers is that they do not have to store infrequently used clothes and that the clothes produced can be used more often. In addition, the rental service also serves as an introduction to the concept and the brand. Further, the rental is seen as a trial period to see if the garment meets its purpose and can subsequently be purchased. It is also seen as a way to reduce the number of erroneous purchases, that is customers who purchase clothes that will never be used.

The rental service started quite recently, in 2012, and only accounts for a small proportion of the company's total revenues, but this has increased since its introduction. The small proportion of revenues is understandable, since the company has not put much emphasis on marketing efforts, and the service is mostly spread by word of mouth and by previous customers who already own a shell jacket and need to add a pair of shell layer pants for a vacation. The type of customers identified by Houdini using the rental service can be divided into four categories. First, there are customers who go skiing for maybe one week every year, and who do not want to purchase clothes, just as skiing equipment is rented for the vacation. Second, customers who attend conferences at skiing resorts, that is the same reason as the first category. Third, economical reasons – customers who are not interested or cannot afford to purchase the clothes and choose to rent them instead. Fourth, rental for growing children, that is expensive new shell layers do not need to be purchased every year. This makes customers aware of the brand. The rental service is booked by visiting or calling the relevant store. There have been trials with an online service, but this did not turn out to work optimally, so the web-based solution must be further developed. After each rental period, the clothes are washed either in-store or at local laundries. Most of the shell layers are rented during the winter holidays and skiing season. The clothes remain in the rental programme for one skiing season and are then sold as second-hand shell layers. There have been suggestions about dealing with this differently and paying more attention to wear and tear.

The reuse project started in 2011 with the aim of selling second-hand Houdini garments and repaired products returned via complaints. Customers can return used Houdini garments in acceptable second-hand condition. Houdini washes these garments and prices them with a 50–70 per cent reduction on the original price; half of the actual sale price is

returned to the customer and half is kept by Houdini. At some Houdini stores, an additional voucher is given to customers who hand in used clothes for second-hand sale. This voucher normally entitles customers to a 20 per cent discount on their next purchase. Customers are attracted to the reuse service for various financial reasons. Some know that the products are of a certain quality but cannot afford new ones, some want shell layers for their growing children and some support Houdini's initiative for environmental reasons.

4.4 Towards a developed business model for sustainable fashion consumption

Is this development towards a more sustainable business model successful? As shown above, the re-project is a part of the current business model development, but it is currently at an early stage and is facing some challenges needed to be understood. From the above discussion, the following main areas are identified as being important in Houdini's effort to develop a more robust business model for sustainable fashion consumption:

- The value proposition, that is what is offered in terms of products and services, especially through the development of the re-projects.
- The users, that is the customers using the content of the value proposition, with a relationship between the company and its customers, and how the view of sharing is seen and developed over time.
- The customers have a current consumption pattern with increased fashion buying behaviour, which meets a company vision to develop a model of fashion consumption through sharing. Thus, an increased understanding of customer behaviour needs to be addressed from a company perspective.
- Profitability needs to be addressed, as industry competitiveness with price pressure for fashion products is high. New channels, such as rental and reuse, that compete with traditional sales must, for their long-term survival, bear their own costs and generate profit for the future development of the business model and to be able to fulfil the company's long-term vision of low environmental impact.

The next section will discuss how a business model develops with the implementation of sustainability and the challenges this entails, for example developing a business model to encourage sustainable consumption, competing with the original business model and the potential to be profitable at the same time. The results from the presented case will be discussed in a structure around the concepts and characteristics of the sustainable business model innovation, as summarised in Table I.

5. Results and discussion

Linking the characteristics of the developed business model including sustainability, as discussed above in relation to Houdini, shows that the company's original business model is under development and also what the company identifies as its future challenges.

5.1 Continuous development

For a contemporary development of the business model, the company needs to understand how the business itself develops over time (Chesbrough, 2007; Mason and Spring, 2011). Houdini shows through its vision a high ambition to incorporate more sustainability in garment consumption among customers. Another important aspect in the value proposition is quality, that is a competitive advantage can be the quality of the product (Massa and Tucci, 2013; Casadesus-Masanell and Ricart, 2010). In a business model with rental as one component, as the developed business model of Houdini has, there is a higher utilisation of the products through the rental agreements. This may indicate a need for a higher

product quality. Why? Factors such as increased washing and less careful use of the products, since they do not belong to the users, could increase the wear and tear of the garments. Following this reasoning, the increased wear and tear may indicate a different way of thinking when it comes to product design (Armstrong *et al.*, 2015; Niinimäki and Hassi, 2011). The study of the company reveals that this is a part of Houdini's design process, which involves thinking about repairs when designing garments. Increased washing must be considered when developing new fabrics.

Earlier studies show that the quality of the garment also involves aspects of the product being up to date, that is there is an element of fashion involved when developing sustainable garments (Armstrong *et al.*, 2015; Pedersen and Netter, 2015). For customers renting Houdini's shell layers, style and fashion is identified as an aspect in the design of new garments. This could put higher demands on producers and designers to implement a more timeless fashion, so that fashion streams do not act as a barrier to implement sustainability in a business model or increase disposed products (see e.g. Manzini and Vezzoli, 2003). Thus, a business model needs to be developed continuously to create value for customers and also to stay ahead of competitors (Casadesus-Masanell and Ricart, 2010).

5.2 Revenue streams and profitability

For long-term survival, profitability is important (Chesbrough, 2007; Osterwalder and Pigneur, 2010). Stretching the business model from pure sales to include rental agreements more clearly also changes the model for revenue streams and how costs are accumulated (Chesbrough, 2007; Giesen *et al.*, 2007). From a selling perspective, the business model has a certain cost structure (Teece, 2010), related to Houdini's purchases and production of garment. When a business model changes from a model with selling products in focus to a model with other types of customer approaches, new types of costs may arise while others may disappear (Boons and Lüdeke-Freund, 2013), such as for washing and distribution. For the revenue part of the business model, garments in the rental programme need a level of rental agreements that is high enough to be profitable.

In the original business model, a sale takes place at one point in time and revenue is transferred to the company (see e.g. Chesbrough, 2007). With a developed business model, Houdini revenues have multiple sources (see e.g. Teece, 2010), from sales of new and second-hand clothes as well as rental agreements. This results in a changing stream of revenues depending on the different levels of the various sources of sales, for example the level of rental agreements. In sum, in order to realise the company's vision, the company must rethink how the streams of revenues should be generated in the future to stay competitive and to give enough returns to make a profit (see Chesbrough, 2007; Giesen *et al.*, 2007). By generating a profit, the company has the potential to develop its business further.

5.3 Product–service system development

Companies seek to develop their business through inclusion of more services to their product offering (Kindström, 2010; Jacob and Ulaga, 2008; Kindström and Kowalkowski, 2009). The company's current business model involves renting agreement and second-hand sales, which is a way to develop a sales business model in favour for more sustainable solutions (Durugbo, 2013; Tukker and Tischner, 2006), meaning that Houdini's value proposition includes what Manzini and Vezzoli (2003) express as the: "[…] demand is met by selling satisfaction instead of providing a product" (Manzini and Vezzoli, 2003, p. 851). Further, the development of a competitive PSS requires close collaboration with customers (Armstrong *et al.*, 2015), implying that there is a need for a close relationship between the company and its customers to develop its business model with a focus on customer needs (Niinimäki and Hassi, 2011).

In the described case, Houdini has developed a closer relationship with customers through its initiative with Houdini Friends and activities through Houdini Hangouts. This is one way of maintaining customer relationships (see e.g. Armstrong *et al.*, 2015). However, this could be developed further if customers using the rental services were seen as more strategic and handled with added market-oriented activities (see e.g. Manzini and Vezzoli, 2003), that is a focus on product availability for customers, and through a range of services provided to customers (Tukker, 2015). Thus, Houdini's value proposition could exploit its ways of working and to develop its services, in addition to the current developed business model which involves renting agreement and second-hand sales, a future service could develop various subscription arrangements. However, developing a business model in this direction requires a more developed PSS, such as functioning technical platforms and logistics systems, to handle bookings, agreements and potential changes in the agreements, etc. Developing a business model with various types of rental packages requires a managerial skill in the understanding of customer attitudes, behaviour and preferences to be able to develop the customer relationship (see e.g. Niinimäki and Hassi, 2011; Tukker, 2015; Armstrong *et al.*, 2015).

5.4 Collaboration

Including sustainability in the business model requires collaboration with other actors (Tambo, 2014; Stubbs and Cocklin, 2008; Miles *et al.*, 2005). This is necessary to spread and implement the ideas of changing consumption behaviour among consumers (Becker-Leifhold, 2018). However, on a business-oriented level, for a developed relationship, both customers and suppliers need to be addressed (Stubbs and Cocklin, 2008). Houdini to some extent has achieved this, for example with a transparent system for working with fabric and garment suppliers. A transparent relationship with the suppliers enables Houdini to control and monitor the production process so that it fulfils the desired sustainability level. There may also be other stakeholders to interact with, such as policymakers or similar (Stubbs and Cocklin, 2008). In a business model developed to consider lower environmental impact, the whole value chain must be considered (Niinimäki and Hassi, 2011).

Following Niinimäki and Hassi (2011), the Houdini case shows that one major step towards this is the use of the analytical framework, planetary boundaries, to evaluate different actors' environmental impact on the supply chain (Houdini, 2018). This may have the potential to strengthen further sustainability when developing new products or relationships with new actors (Egels-Zandén *et al.*, 2015; Mol, 2015), for example developing more systematic co-operations and including the products with booking arrangements in the same way as skiing equipment is possible to book together with hotel. Another way to utilise from the company's own developed fabric is to establish relationships with other companies to develop other types of products suitable for the developed fabric.

5.5 Resources and capabilities

To develop a competitive business model with increased sustainability, a company must exploit its ways of working, develop technology and services (e.g. Teece, 2010; Casadesus-Masanell and Ricart, 2010). Exploiting ways of working involves developing a transparent relationship with suppliers, in terms of both an open system for where raw materials come from and how the production process works (Egels-Zandén *et al.*, 2015). Houdini expresses that this is an area in which they are working. This, however, means that managerial capacities must be put into this, both in terms of engagement and in terms of building trust and reputation for the company brand (cf. Mol, 2015).

A key resource to develop the value proposition is the technical platform, that is how can it be made easier for customer to book the products they are interested in online, pay for them and get them delivered in a timely and convenient way (see e.g. Teece, 2010 concerning

technological development). Technology as a source to interact and manage customers, as seen in the case study, is an area for development (Massa and Tucci, 2013; Mason and Spring, 2011). The current web-based rental solution involved many problems and needed to be terminated for further development. Potentially this is a major barrier (Massa and Tucci, 2013) to get this part of the business model to really take off. If users of winter equipment book accommodation and skiing equipment online, having to go through other channels to book clothes via a visit to a store will be a barrier. Thus, acquiring or otherwise getting access to knowledge and expertise in technological development to get a reliable and functioning system would be an advantage to strengthen the business model, that is the implementation of a supportive infrastructure technology (Mason and Spring, 2011).

Further, a service must be developed to become more attractive than competitor alternatives (Casadesus-Masanell and Ricart, 2010). In the described case, steps have been taken to make an attractive service, but improvements can be made, for example developed infrastructure to book and order garments, the type of rental agreement, the type of garments included, rental length and potentially possibilities to change clothes during an ongoing agreement, package prices or single item prices, that is to be engaged in the development of the company's business (Tambo, 2014). Closely linked to the service offering is the logistics, as identified by Zamani *et al.* (2017), that is how do customers order the clothes, where do they pick them up, how are the clothes returned and how are complaints handled? Thus, such resources and capabilities can be developed for a more holistic perspective of the value chain and the company's relationship with its customers.

Yet another capability is mentioned in the section of continuous development. However, it is worth mentioning in connection with this section as well. For increased sustainability and a potential for long-term use of the products, Houdini has incorporated a design philosophy which already in the design phase of product development means designing clothes easy to repair (cf. Armstrong *et al.*, 2015; Kozlowski *et al.*, 2018).

A key resource to manage developments described in this section requires financial resources, which can be obtained through several sources: additional capital from owners or potential owners or the company's own generated resources, that is a capacity to find funding for future investments (cf. Casadesus-Masanell and Ricart, 2010). To be able to change the fundamental structure of a business, perseverance is a challenge which requires patience from the individuals who drive change and development together with sufficient financial resources to survive during the development and implementation phases (see e.g. Massa and Tucci, 2013; Mason and Spring, 2011).

5.6 Capturing change

On a management level, the company needs knowledge and skills to manage change for a continuous improvement of the business model towards a more sustainable one (Weick and Quinn, 1999; Teece, 2010) and to follow and adapt to changes within the industry (Giesen *et al.*, 2007; Bucherer *et al.*, 2012). What we see in the studied case is a company with a high level of ambition to reduce the negative impact of the production of fabric and an ambition that the garments produced reach a high level of utilisation. Thus, as highlighted by Giesen *et al.* (2007), the company has the ambition to take a position within the industry to drive change, through development of more environment-friendly fabric and using a framework to analyse the company and its value chain environmental impact. To be able to drive this change on a larger scale, management may need to expand the current organisation to develop these ideas. But this may require more financial resources as well as long-term perseverance by company management and its owners to implement and develop the business model to include increased levels of sustainability.

Considering customer preferences (see Niinimäki and Hassi, 2011) may require more of "educational contributions" to enlighten customers of the advantages of renting garments or

buying second-hand garments as an alternative to purchasing new ones. Thus, it is the responsibility of the management to follow and understand trends in the market and try to adapt to and capture such changes as described in the introduction, for example increased urbanisation means that people have less space and are, thus, less able to store many things, which could potentially be an advantage for a business model developed for renting, that is clothes like shell layers are hired when needed. Changes in behaviour and attitudes could also be captured in close interaction with customers through current and potential influencers, not only through Houdini Friends and activities with Houdini Hangouts, but also outside these groups to educate and change the mindset of the users of clothes. Changing customer attitudes may require more widespread public acceptance that this is normal or an even better alternative for garment use, but this has to do with beliefs and attitudes among customers (cf. Armstrong *et al.*, 2015; Niinimäki and Hassi, 2011).

5.7 Identifying barriers

There are various types of barriers identified in the literature, from behavioural and social barriers to structural barriers (Laukkanen and Patala, 2014; Massa and Tucci, 2013). In the studied case, Houdini's vision for its future value proposition has the view to transform garment customers into users of garments, that is for technical reasons, many of the products themselves can be shared instead of owned. However, a change from buying to using is primarily about how we as consumers view the product itself, from a hygiene perspective (Armstrong *et al.*, 2015), and changes may meet resistance for various reasons (Bucherer *et al.*, 2012). But using fabrics used by others work in other settings. Hotel visits can be considered. In most cases, guests do not bring their own bedsheets and towels – these are provided and are included in the service guests pay for. Hotels have a structure to replace and clean these items, and this is also possible with garments.

Implementing a new business model may impose conflicts with the existing business model, for example an increased risk to lose existing customers or that there will be internal competition between different parts of a developed business model (Waldner *et al.*, 2015). Thus, customer preferences and behaviour are major barriers to handle when it comes to the use of garments, from a view that garments are something you own and not share with others to the idea that they can be shared for reasons such as a more sustainable consumption pattern. Other barriers could be financial reasons, for example the willingness to pay for a rental agreement must be in a balance between a purchasing price and a rental price. Through a rental system, that is a developed PSS as described earlier, customers can concentrate on the main activities and not think about maintaining and storing garments. Access to a product at a certain time is the more important aspect, which leads to a barrier of more structural nature (Laukkanen and Patala, 2014; Massa and Tucci, 2013), that is, as seen in the case study, the challenges and need to develop the technology to be better able to offer solutions for customers other than merely buying products.

5.8 Efficiency

Producing less and reaching the same results increase the efficiency in the business model (Schaltegger *et al.*, 2016; Tukker, 2004; Lieder and Rashid, 2016; Massa and Tucci, 2013; Armstrong and Lang, 2013). This indicates that a higher utilisation of clothes could result in lower production of clothes in general. If each garment is used more, fewer garments are required, for example a user rents a shell layer only when needed on a skiing vacation, and when the vacation is over, the next user rents the same shell layer. To increase efficiency in the business model to increase sustainability, Houdini has implemented a design strategy to facilitate repair; also, a transparent relationship in the supply chain facilitates processes in production and also the innovative strategy for new more environment-friendly fabric which is open to use for other producers. Thus, increased efficiency in production,

innovation and production processes can enhance the potential to implement a more sustainable business model.

5.9 Customer perspective

Several authors discussed the customer perspective through attitudes and preferences needed to be understood to develop more sustainable business models and more sustainable consumption patterns (Armstrong *et al.*, 2015; Kathan *et al.*, 2016; Laukkanen and Patala, 2014; Lin *et al.*, 2015; Lundblad and Davies, 2016; McNeill and Moore, 2015; Niinimäki and Hassi, 2011). As seen in the studied case, Houdini has initiatives in interaction with customers to increase their understanding of behaviour and trends. To develop the customer relationship, Houdini Hangouts and Houdini Friends is a structure of important building blocks which could be further developed to harness the power of customers' interest in preserving the environment.

In this paper, we have mostly used the term customers to define the actors with whom Houdini interacts downstream the value chain. A better term is, perhaps, users (see e.g. Niinimäki and Hassi, 2011), that is in a shift from a consumption-oriented use of garments to a more sustainable use, customers are considered more to be the users of garments, rather than consuming them. It is, therefore, important to understand who the potential users are and their preferences. To be proactive in the customer relationship, Houdini may have to develop customer relationship through education about the advantages of renting instead of owning garments.

Customer behaviour, buying patterns and what drives these and the preferences for garments also need to be taken into consideration. Ownership is one potential barrier to overcome (Pedersen and Netter, 2015; Becker-Leifhold, 2018), that is there is still a status in owning, and for a business model to flourish, this needs to change with elements of simplicity, saving time and energy, accessibility and contributing to sustainable consumption patterns. This means that the status needs to change from ownership to become a sustainable consumer, that is a user of resources instead of an owner of the resource. Changes take time, which means that managers, owners and financiers of business models must persevere to succeed in an effort to change.

5.10 Key aspects of business model development for increased sustainability

The paper aims to identify key aspects of business model development for sustainable apparel consumption, as actors show an increasing interest in PSSs. The literature review revealed nine areas capturing the key characteristics when including increased sustainability in business model development. These key characteristics were discussed and analysed in relation to the studied case, Houdini, to further understand business model development on a company level. To some extent, these nine areas show, on an overall level, similarity with generic business model development. However, more specifically, these areas point to some key aspects to consider when developing a business model with sustainability at its core, seen from a retailers' perspective.

The findings support previous research, and this paper connects these findings on a corporate level for increased understanding on how to address business model innovation with a vision to include more sustainable solutions and what are the possible key challenges in business model development. The first key aspect is to consider the external environment which plays an important role for sustainable consumption to increase and prosper as an alternative to traditional consumption, considering trends such as increased urbanisation (Florida *et al.*, 2008) and climate change effects (Rockström *et al.*, 2017). On a company level, this aspect supports the company's development of a business model with increased sharing of products through rental agreements, to reduce environmental impact

(e.g. Armstrong *et al.*, 2015), but the challenge is to develop a well-functioning distribution network for exchanging, collecting and returning garments.

The second key aspect to consider is the attitudes and behaviour of customers (e.g. Niinimäki and Hassi, 2011). Consumption is deeply rooted in our customer behaviour (e.g. Becker-Leifhold, 2018), so changes with a large-scale impact must potentially involve more actors than a single company. Thus, customers must be trained to transfer a consuming behaviour to a using behaviour, which can be considered as a challenge and responsibility by more actors than just the individual businesses, on a political level/agenda. However, actions of individual companies may be important, for example product development such as the studied company's environment-friendly fabric with no patent pending. Further, in the understanding of customer preferences, the studied company has initiatives in this direction with the two initiatives of Houdini Friends and Houdini Hangouts to deepen and broaden the understanding customers which will be helpful and necessary to increase the attractiveness towards changing customers into users.

The third key aspect is the perseverance by involved actors, such as the company, its employees, managers, owners and financiers, and potentially also by political and legislative actors to support a market development towards sustainable business models. This argument has its roots in financial aspects, that is a company without long-term profit will not be able to drive change for very long (e.g. Chesbrough, 2007). Monitoring progress of sustainable development is, therefore, important; the studied case shows increased sales within the developed areas such as rental, but to be able to see this as a major activity, it must grow further.

The fourth key aspect deals with the advantages of the value proposition. A value proposition built on the use of garments instead of owning the garment must have more advantages. This is similar with competitive strategy which has advantages over competitors (e.g. Chesbrough, 2007). A transformation from products to services includes a development of what is included in the value proposition (e.g. Kindström, 2010). Thus, to be able to separate the value proposition, from selling a product to renting a product, there must also be something that differentiates the two offerings from each other (e.g. Kindström and Kowalkowski, 2009). Thus, including service and maintenance in the offering, and including a variety of options and access to products and combinations of products could be paths of development. Combining the offer with flexibility in different aspects such as product changes, collecting and returning products may be necessary to make the alternative sustainable, for example renting clothes offers advantages over ownership, which also has the potential to develop the revenue model (e.g. Kindström and Kowalkowski, 2009).

The fifth key aspect, developing technological solution, is a necessity (e.g. Mason and Spring, 2011). To produce a functioning product and service offering, a technological solution may be of importance to succeed. In the studied case, we see that efforts in implementing a web-based solution has failed and been returned to the drawing board to find a better working solution. This is a fundamental issue to be able to gain more customers, and to gain trust, the technological solution must work as a web-based solution functioning on different platforms.

The sixth key aspect is the question of quality, that is attracting customers, which builds on functioning products, reliability and convenience of the service (e.g. Massa and Tucci, 2013). From the retailer's perspective, renting products to customers for shorter or longer periods raises the question of how long the product will sustain wear and tear. The issue of quality then becomes important both from a product perspective and a financial and sustainability perspective. This touches product development and design, as increased wear and tear implies higher quality, meaning fabric that sustains high utilisation and a design process that takes into consideration higher utilisation. What the case gives is a design

process which emphasises repairability. From a financial perspective, there is a balance between developing sustainable fabric from a wear and tear perspective, the longevity of products in use and consideration for environmental impact. Further, from a company's perspective, quality must also be addressed together with fashion, that is products designed for a long life cycle must also be designed in a timeless fashion style. Customers may, however, see collaborative consumption as a way to try the latest fashion styles (e.g. Becker-Leifhold, 2018), which is a balance for the company to manage.

6. Conclusions

The aim of this paper is to contribute increased understanding about how business models can develop to include more sustainable solutions. This has been discussed by highlighting what constitutes a business model with more sustainable content as summarised in Section 2. These elements have further been discussed in relation to our studied company, Houdini Sportswear, to recognise elements of business model development on a company level. This relates to Teece (2007) and the discussion of microfoundations, that is an "[…] ability to recognize, sense, and shape developments" (Teece, 2007, p. 1323), which in this paper means to illustrate and discuss challenges and opportunities for a sustainable business model development from a company level.

The study shows that developing a business model to include more sustainability involves both potentials and challenges. To some extent, this agrees with the research carried out by Niinimäki and Hassi (2011), who found that customers were interested in more sustainability. On the supplier side of the value chain, the company in this case study has monitored suppliers, developed new fabrics and applied a carefully thought-out product development process. On the customer side, much more remains to be done, and the findings of this paper suggest some steps to be taken, but there are further challenges on the market side, as well as opportunities if an increased interest in environmental issues and impact can change consumers' mindsets. The field could benefit from further studies on the demand side of how a subscription-based model built on increased sustainability, related to customer behaviour within the apparel industry, could be developed and implemented. A limitation of this study is that a deeper study also in the second phase of data collection, around the design and design process, could have given more knowledge on product development in connection with fashion trends together with customer preferences. Another limitation is that deeper studies in connection with Houdini Hangouts, Houdini Friends, users of the various services could have provided more insights in customer preferences.

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