

INNOVATION SUPPORTED SUSTAINABILITY BY GENERATION OF A NEW BUSINESS MODEL

Author: Iarina Bistriceanu
University of Twente
P.O. Box 217, 7500AE Enschede
The Netherlands

ABSTRACT,

This research explores the design of an innovative business model, a trailer rental service, associated with a trailer manufacturer, aiming to achieve the Triple Bottom Line of social, environmental, and economic sustainability. The operation takes place in the context of an online platform, with similar characteristics to those of a shared platform and a collaborative consumption model, and uses Lean Canvas as a framework for identifying critical components such as customer segments and revenue stream.

The analysis applies the Context-Intervention-Mechanism-Outcome (CIMO) logic to develop actionable strategies that ultimately contribute to the understanding of how a sharing model can offer a proposal for balancing profit with social and environmental responsibility in industries where sustainability is hard to implement and monitor.

Graduation Committee members:

Rainer Harms

Maximilian Goethner

Keywords

Trailer rental model, sustainable business model, triple bottom line

1. CONTEXT

The context of the research is a trailer manufacturer established in Romania. The company is determined to balance the three components of the Triple Bottom Line defined by John Elkington- People, Planet, and Profit.

Considering that the company has already achieved some level of profitability and has put the basis for a community program, the main emphasis is on introducing environmental sustainability in relation to the other components. Therefore, the aim is to achieve satisfaction of all three factors with an innovation-focused sustainability model.

Based on the company's experience, traditional general customer behaviour is now transitioning to optimised consuming systems, such as the preference to rent rather than own for limited usage cases. Therefore, a rental business model could attract potential customers, create brand awareness, and allow for a better allocation of resources that will lead to less scrap materials and waste produced by the consumer.

2. METHODOLOGY

This thesis is based on the Keskin & Rome design theory (Keskin & Rome, 2020), which focuses on four main design cycles: exploration, synthesis, creation, and evaluation. This iterative process starts from a review of existing literature and on the best practices in a similar context for the exploration phase, followed by actionable insights structured with the aid of the CIMO logic in the synthesize phase. Using the data gathered in these early steps, a model is designed in the creation step, and its evaluation is determined to assess its alignment with the research goal.

3. EXPLORATION

3.1 Goal

The design question is "How can a sustainable business model of a trailer company with the characteristics of a sharing platform be designed by using the Lean Canvas to contribute to the achievement of the Triple Bottom Line?". The exploration of frameworks that could describe the company's approach to the new business model, namely the sharing platform designed for trailers that the company manufactures, determines how the model can be adapted to the company's status. A vital component is investigating how sustainability is integrated into the different components of the canvas in order to drive the desired outcomes such as competitive advantage and creating a shift in customer behaviour by introducing the sharing economy model. This paper will constitute an investigation of both the company's best practices and the consumer's perceptions and behaviours toward a successful introduction of sustainability in the trailer industry.

3.2 Literature

3.2.1 Method

In order to assess the most appropriate model for the given venture, it is crucial to conduct a literature review and map the alternative results. Intending to gain the best insights on approaches for a new business model, it is imperative to use academic tools for research such as databases of scientific papers and materials provided by the university. In this case, the analysis starts as a thorough dive into the Google Scholar and Scopus available materials by using keywords such as "business model innovation", "business model canvas", "strategic innovation", "platform business models", or "business model design". Once the most prevalent models have been identified, the next step involves a selection of the most fitting approaches for the given specifications of the scenario using personal experience in the

company and academic experience in determining the application of theory.

The process of selecting the business model innovation approaches required compiling a list of the most prevalent options and selecting the three most fitting ones for the research context.

The evaluation of approaches has its basis in the context since this research is highly dependent on it, with its specifics consolidating the uniqueness of the innovation. Therefore, the results show the three main approaches to business models that could aid in the research's aim as a tool needed to develop the business model.

3.2.2 Results

During the initial steps of the research, the main models identified that could provide a partially accurate mapping of the sustainable model are the collaborative consumption model, the value proposition design, and the Lean Canvas.

Collaborative consumption could be used in describing the business model that the company is looking to develop (Perren & Grauerholz, 2015), a sharing service where trailers would be spread around strategic areas in order to have easy access for the customer, and therefore create a sharing economy model which would overlap with the key characteristics of this concept (Puschmann & Alt, 2016). The idea of this principle is based on the use of digital platforms to facilitate access and drift the occasional consumer away from ownership and the waste produced by owning items that are infrequently needed. Ideally, this concept accurately explains the novel revenue strategy. However, at the core, the collaborative consumption relies on peer-to-peer transactions, which in this scenario are not feasible since the safety of a personal trailer shared on the platform could only sometimes be guaranteed. The servicing would be complicated to manage (manufacturers use different components such as brake cables, lamps, or suspensions). Another important aspect is the safety locks needed to secure the trailer, which can be unlocked only using the app credentials and, therefore, is a costly investment for an owner looking to rent their vehicle. In the given situation, the collaborative consumption model would not represent the most fitting framework for describing the strategy, but it can be a valuable tool in the design process.

The value proposition design is an instrument used in business administration to develop value propositions that are appealing to the target market and successfully meet their demands (Osterwalder et al., 2015). The approach places a great emphasis on the needs and demands of the customer, by creating target groups based on common characteristics (behaviour, needs, demographics) and continuously improving and interacting with the user to get insights and feedback. This represents an interesting approach to developing the business model. It is highly customer-centred, which could create a competitive advantage. However, it needs to consider the already established company, which is beneficial for later stages in which understanding and addressing consumer preferences is vital.

None of the approaches mentioned above presents a high interest in the company's economic development and is designed to be more valuable for start-ups. Still, the Lean Canvas offers a more holistic approach and a validation of the business model (Link, 2016). Its ability to map actionable insights and prioritise key elements in a structured manner provides the ideal basis for informed decisions that are vital in designing a new business model. Moreover, the lean canvas is seen as an iterative process that encourages an agile approach, which is highly beneficial for an unknown market that the company wants to penetrate and could provide the validation needed in such environments.

Therefore, even as designed as a framework for start-ups, this canvas can be adapted to account for a preexistent company looking to develop their business forward, in an effort to create a more socially and environmentally friendly mentality to transactions.

3.3 Practice

3.3.1 Method

In order to assess the feasibility and the key elements in the design process, it is vital to perform a review of similar practices, be it in the same industry or ones with comparable actors and attributes. This step involves the use of business journals regarding innovation as well as dives into Google Scholar using keywords such as “sharing economy businesses”, “collaborative consumption model”, “self-service rental platform”, or “internet-based lending platform”. With the aim of finding the closest related platforms that perform a similar activity, informal techniques provided confirmation of the companies found and extended the research to new ones: informal inquiry and crowdsourcing. The first technique involved seeking information through personal interactions, especially with acquaintances who are familiar with rental models, whilst the second involved posing a question on the company’s social media where followers could answer with the names of the requested “platforms where you can rent items from hubs around the city?”.

3.3.2 Results

Determining the most conclusive results is based on the similarity of the functioning principle with the desired core activity that the company plans on implementing. It is essential to mention that all of the companies compared in this study have an almost identical business model where the differences are addressed as criteria for determining the most suitable for this research. Therefore, one significant actor is the Rotterdam-based car-sharing company Greenwheels, which provides an equivalent service in the automotive industry, with cars placed in hubs around the city, with prices based on hours and kilometres. This concept can also be seen present around the US, with Zipcar being the market leader, but the choice of setting Greenwheels as the benchmark is related to the country in which it operates. Since both the Netherlands and Romania are functioning under specific EU guidelines and regulations, it makes for an obvious choice as compared to the US system. Comparable to Greenwheels is the Go Sharing app, also present in the Netherlands, that is focused on the rental of electric bikes and scooters as opposites to more oversized vehicles, under almost the same core process. In this case, Greenwheels is also more appropriate for the company's plan since the maintenance and security systems are of much more remarkable similarity as compared to scooters.

As stated above, this industry's benchmark would be the Dutch company Greenwheels, a business model relevant to developing characteristics and prototyping the product. This model could set a minimum performance standard and aid in the next steps.

Greenwheels's business model will provide a guide on how the system works regarding bookings and pricing models and highlight the potential functionality of a similar model for different products.

Therefore, the following steps will include identifying the critical elements of a successful sustainable business model and creating actionable insights in developing the Lean Canvas to map out its vital features.

3.4 Combined findings

By analysing the theoretical part, it was found that an adapted version of the Lean Canvas could be used to explain and map a

successful sustainable strategy. The product's essential characteristics could be identified by overlapping the practical findings with the prioritised steps in the Lean Canvas mapping.

In conclusion, sharpening these tools will be the key to successfully mapping and developing the company's sustainable business model.

4. SYNTHESIZE

The synthesize step is a crucial sequence of the research, as it generates a deeper understanding of the design's aims and allows for a clear definition of the business model to be consolidated based on emerging patterns and the refinement of strategic insights.

The step is aimed at generating a “mental model” (Keskin & Romme, 2020) by reducing information to actionable insights and paving a clear path to business model development.

With the environmental component of the Triple Bottom Line as the main motivator for the company to engage in this project, it ought to achieve a better management of resources and provide a more sustainable way of consuming goods, without however disregarding the other two components, both People and Profit, as the relationship between the parts is interdependent (Venkatraman & Nayak, 2015).

4.1 Methodology

This step encapsulates the knowledge gained during the explore phase of the research in order to generate actionable insights that are valuable for the artefacts that will conclude the paper.

Integrating the CIMO logic in this step (Denyer et al., 2008), which stands for Context, Intervention, Mechanism, and Outcome, provides a structured approach for understanding and analyzing each contributing actor of the Lean Canvas.

To emphasise the importance of each Intervention and Mechanism, each design proposition is supported by scholars, in the form of research papers, as well as a practical part that highlights the practices of similar companies for a demonstration of functionality in the real business world.

Gathering scientific papers is a process performed using search engines such as Google Scholar, Scopus, and Emerald Insight since they return the most comprehensive results to specific keywords for each factor.

This step combines literature with real-life cases, ensuring a sturdy foundation for the artefact's design based on the hypotheses developed during this part of the research.

4.2 Results

In order to develop the business model, design propositions are elaborated on for each relevant aspect.

The first important concepts, the problem and solution, are defined in this context as the lack of sustainable options for a trailer manufacturer (C). This can be overcome by creating an alternative to owning (I), by introducing a new business model (M) with the scope of developing more sustainable consumption patterns and decreasing the use of resources (O). Several researchers agree that, in the context of less used goods, collaborative platforms reduce resource consumption (Harmaala, 2015) by providing an environment for sharing the same product repeatedly, instead of each user acquiring one, therefore creating less need to produce an item for singular use, as well as drive the behaviour of customers towards a more rewarding consumption, with increased facility and sustainability (Schreiner, 2020). A few companies have already started to perform in this field, such as the multinational retail group Auchan, which introduced a new

activity to their portfolio intending to decrease ownership of specific items such as vacuum cleaners, drilling machines, grinders, lawnmowers, and many others, by allowing 24-hour rentals based on their store club card.

Regarding customer segments, in the context of a trailer manufacturer looking to implement a sustainable business model, different groups of people require several types of trailers for various purposes (C). This is why it is vital to identify and categorise the customer segments to adapt the service to their needs (I), which can be done by conducting market research to understand the specific requirements (M) to maximise customer satisfaction and retain frequent users (O). In literature, the importance of customer segmentation in the overall strategy of a company is recognised widely, completed by new approaches such as computerised customer segmentation (Thalkar, 2021). One critical manner in which market research can be conducted has particular regard to the adaption of the canvas to an already established company with its clientele by surveying and analysing patterns. In this way, the company can already assess the main customer groups since they might be identified as buyers for certain needs, as well as second-hand trailer customers. Multiple companies that have launched an additional business model to their core activity have used the knowledge from their clientele, such as Nike launching the Nike Training Club app. This digital fitness platform used profiles of the Nike apparel and sneakers users to tailor the experience.

In the context of a trailer manufacturer aiming to introduce a sustainable business model (C), a unique value proposition that emphasises the environmentally friendly component and the facilitation of access to trailers (I) is needed, which can be achieved by developing critical features of the model to differentiate from the competitors and highlight the environmental benefit of use (M), in order to address the needs of the customers to a greater extent than existing alternatives. According to the literature, a unique value proposition relies on four core elements, namely: segmentation, targeting, differentiation, and positioning (Mone & McKinley, 1993), making uniqueness not only desired, but also highly needed (Florek-Paszowska et al., 2021). Therefore, towards the success of the model, the value proposition has to be innovative and adapted to the requirements of the market, which is achieved by developing unique features. These features are crucial for success; in the same manner, Tesla introduced fully electrical autonomous vehicles and derived accomplishments from commercialising a unique product.

In the context of launching a new business model, an unfair advantage towards competitors is needed (C). The company needs to identify and create a distinction that the rival companies cannot easily duplicate (I), by making use of exclusive partnerships (M), to sustain competitive advantage and maintain a good position in the market (O). In a comprehensive literature review (Hamidzadeh & Taheri, 2017), it has been highlighted that, based on Porter's generic strategies, the differentiation strategy has received the greatest amount of attention, which correlates to a greater chance of success in the market when combined with an additional strategy. The differentiation should be achieved not only by the degree of innovation it brings to the market but also be aimed at creating exclusive partnerships to secure a sturdy position on the market, creating a hard-to-entry barrier. A powerful example of this is the way certain beauty products manufacturers (e.g. Fenty Beauty, Bite, etc.) sell their products exclusively through Sephora, the worldwide retailer of

cosmetics, which provides an unfair advantage to Sephora, which is increasing popularity due to its exclusive collaborations.

In the setting of a new business model directly linked to a trailer manufacturer, the new business has to generate revenue to function (C), by identifying different revenue streams (I), that feature options such as pay-per-use, subscription plans, and additional service fees (M), to support the expenses and growth of the company (O). The monetisation mechanisms have to be established in order to fit the platform-based model, as well as accommodate the idea that the new business model is directly linked to the company, pointing to a demand-side monetisation (Bartels & Gordijn, 2022).

Similarly, companies like the car-sharing service Greenwheels provide a pay-per-use system that aligns with sustainable practices for encouraging limited consumption, as well as monthly subscription plans for frequent users that enable discounts on trips.

Every business model comes with a cost structure, in this case, the innovative adjacent model to a trailer manufacturer, and there is a need to understand and manage the costs involved (C). Identifying the main expenses of the company (I) and creating strategies to manage them with an emphasis on efficient resource allocation and budget planning (M) will manifest in maintaining profitability and financial sustainability (O). For a successful management of cost, for the longest time, literature suggests that analysing the value chain allows for the identification of areas where costs can be optimised, without compromising the value (Anderson, 2005). It is crucial first to describe the initial costs of the venture and the maintenance for the first period of functioning to ensure sustainable budgeting.

In the context of a new business model adjacent to a trailer manufacturer's core activity, measuring performance is vital for evaluating success and gathering insights for improvements (C). The identification of key performance indicators (KPIs) (I) provides a basis for the measuring tools, along with systems that track metrics (M) in order to gain data-driven insights for decision-making within the company (O). Scholars have emphasised the importance of KPIs in detecting potential risks and evaluating business performance (Andonov-Acev et al., 2008) (Sekáč, 2023). Most of the successful companies worldwide, follow relevant metrics for their business. For example, companies like Netflix and Spotify track customer retention rates through KPIs like monthly active users or engagement rates, whilst companies like Tesla and Toyota monitor defect rates and production cycle times which focuses on production efficiency and quality control. In order to successfully manage the business, a few software facilitate the monitoring of KPIs and provide a structured manner to observe trends and potential threats. A widely used system is Geckboard, which allows a real-time synchronisation of data with other company accounts, such as Google Analytics, Shopify, etc., to centralise the information and compile an overview for management.

Lastly, a new business model has to reach customers through appropriate channels (C), which can be done by trying multiple channels (I) and finding systems to market and deliver the service (M), in order to be visible and attract customers (O). With the aim of reaching a greater audience, a company should create a multichannel environment, that uses a carefully crafted mix of

various channels (Sharma & Mehrotra, 2007). This model is highlighted by Apple's approach, where the electronics manufacturer connects with the customers through both an online and a physical store, authorised resellers, mobile apps, and customer support services via call or chat. The channels must cater to a large part of the potential consumers in terms of accessibility and should also facilitate the selling of the product or service.

5. CREATE

This step's objective is to integrate the previously gathered knowledge into the creation of an artefact that will contribute to the satisfaction of the Triple Bottom Line. By engaging all the components of this research, the result is generated in the form of a Lean Canvas accompanied by explanations of the designed business model.

5.1 Combined findings

5.1.1 Problem

Starting from the root of this research, the problem relates to sustainability. As the company is exploring the options for an effective achievement of the Triple Bottom Line (TBL), without deviating much from the core activity, a few other situations arise, which can be combined in the designing of a product that meets the customer needs.

The company only manufactures and sells trailers without a rental option directly linked to the company. However, according to the data collected by the sales manager, there are requests for renting on average twice a week. Even though the trailers produced are sometimes acquired by rental firms, the lack of flexibility they offer regarding a pre-determined schedule and a billing system per day shifts customers towards finding more accessible alternatives for occasional use.

Therefore, the main problems identified are a lack of flexible rental options, inconvenience of rental processes since the traditional rental model involves a centralised hub, with manual processing and paperwork, and limited availability of options.

5.1.2 Customer segments

In order to establish the customer segments, profiling the customers of the company is relevant. Therefore, it provides a basis for potential users. For example, the three main categories of customers are represented by customers that occasionally need a trailer for personal use, small businesses that might find renting more affordable than owning a trailer, and some even organisers that need a transporting solution for their equipment from time to time.

There is also potential for seasonal demand, for groups such as farmers and beekeepers that operate mostly in particular seasons, especially the warmer ones.

In regards to behavioural segmentation, there are a few notable factors that could dictate different approaches for various users. Based on usage rates, some frequent users rent regularly, such as small businesses and event organizers, as well as occasional users who need a trailer for moving larger personal items, renovations, and generally shopping from a crafting store.

The age of the renter is a relevant aspect to consider mainly in terms of marketing the product. Since all users must be over 18 and have a valid driver's license, the product is aimed at drivers from different categories: young drivers (under the age of 30), adult drivers (30-50 years old), and senior drivers (>50 years old).

5.1.3 Unique Value Proposition

The unique value proposition is focused on how the solution aims to solve the problem uniquely. Therefore, the value proposition regards the provision of a convenient and flexible rental with pay-per-use (hourly wages) through a mobile app to facilitate the procurement of the trailer without the need for extensive paperwork at every rental.

Accessibility is the second most important aspect, without disregarding the security and reliability of the business model.

The value proposition supports the achievement of the Triple Bottom Line by encouraging a more sustainable consumption model based on the way fares are collected. It also facilitates access for people within the community to shared goods, fostering the community feeling while being profitable.

5.1.4 Solution

The solution represents the product itself, a mobile app that allows browsing, renting, paying, and unlocking the trailers scattered around the city. The trailers are manufactured to ensure the quality and safety of the product, as well as the regular maintenance provided by the company with the help of the apprentices.

As the trailers are distributed in multiple strategic hubs around the city, especially in areas such as craft shop parking lots, supermarkets, or close to the city exits for villages nearby in the metropolitan area, the wide network created is also highlighted by the diversity of trailers for each type of usage, with different dimensions and prices that match the characteristics.

The trailers are equipped with safety systems that unlock from the app and GPS tracking devices to ensure that the transport is made in the safest conditions, with insurance coverage guaranteed.

By creating an account, the customer has instant access to booking times for any trailers in his area. In-app suggestions regarding the model and the pick-up location are based on a few questions and the trailers' current locations.

The solution encourages customers to develop sustainable consumption models by only paying and implicitly using the trailer for the time needed. It also saves resources by not acquiring a trailer for a few use times that will eventually go to waste and even save fuel. Fostering safety on the streets by having a regularly checked trailer, made as durable as possible, which can be shared by a large number of people is another important outcome of this solution.

5.1.5 Channels

The mix of channels should cover a large part of the customer segments' preferences, as it needs to reach many people to ensure wide usage of the platform for maximum benefits.

Therefore, the main channel is represented by the mobile app, developed to interact with customers and provide access to trailers by allowing them to book, pay, unlock, and lock the trailer. In order to provide faster access to information about the business model, a website is designed to contribute to customer engagement.

For advertising, the company's sales team will verbally inform their clients, hand out flyers about the launching of a new business model in the country, as well as use internet-based options such as social media with a secondary account to the preexistent pages on Facebook, Instagram, and TikTok. These channels will generate awareness and curiosity of the viewers, and will likely be based on the brand image since the company is known as a reputable manufacturer.

An additional channel is represented by the local partnerships, which increase visibility and promotion. Collaborations with the Romanian home improvement store, Dedeman, could significantly impact the visibility of the model, since they are the largest retailer of home improvement goods in Romania, with over 60 stores in almost 50 cities, where specific slots of their parking lots will be allocated to the trailers up for rental with instructions of the app. Another significant partner is the municipality, which can allocate parking space from the city strategically to boost accessibility and exposure.

5.1.6 Revenue streams

In order for the model to be feasible, it has to combine a few revenue streams to be sustainable in the long term and cover the initial expenses. Therefore, the model encourages limited use by introducing a fee per hour of rental, which can be paid directly via the app, and a subscription model that offers benefits to frequent users such as lower fares at every use, which sums up as more advantageous for the consumer.

These fares will cover the maintenance of the trailers, the app, and potential paid parking spaces, amortising the initial investment in the app and the production of the trailers and locks. Additional income is represented by the presence of ads on the app and website, which will be supported by related businesses. Partnerships can also generate revenue by promoting the partner or similar companies.

5.1.7 Cost structure

This part covers the investment in the model and the initial costs of launching the business model. These cover the app's development, estimated at around 15.000 euros, and the production of the first trailers set to join the fleet, estimated at around 10.000 euros for 5 trailers, including the locks. Other expenses are related to advertisement, promotions, and partnerships as well as insurances for trailers and compliance with regulations (fees from the Chamber of Commerce for adding the activity to the portfolio or the City Hall for the parking spaces).

5.1.8 Key metrics

In order to track the success of the new business model, the relevant metrics are firstly the number of rentals made through the app as well as the customer acquisition cost, which is defined as the cost to acquire a new customer, but also the retention rate expressed as the percentage of customers who return for rentals.

To establish if the number of trailers allocated to each hub is well determined, the utilisation rate has to be monitored. This is identified by the percentage of time the trailer is in use versus available, but also compiles the average revenue generated from each user to detect possible strategies and the fairness of pricing.

These KPIs are difficult to manually trace, and the creation of a Geckboard is required since it will be connected to both the app and Google Analytics for marketing purposes.

5.1.9 Unfair advantage

By introducing an innovative business model to the Romanian market, the company seeks to create a competitive advantage and additionally create a new competitive market. This strategy is known as differentiation, which is achieved not only by facilitating rental services but also by using novel lock systems that are automated and can be controlled through the app. The company also gains exclusivity to certain partners to ensure a sustainable collaboration and the best positioning for trailers.

Another significant advantage is that the company can leverage its manufacturing capabilities, industry knowledge, and networks

to create prime trailers of the highest quality and service them with minimal costs.

6. EVALUATE

6.1 Methodology

To evaluate how effective the solution is in the context of achieving more sustainable management of the TBL, the structure is analysed in relation to its impact on the three P's (Profit, People, Planet) by determining the justification of its sustainability based on its characteristics. The justification might be supported by literature found in academic databases, by prioritising keywords related to sustainability evaluation.

A survey was conducted among the company's clientele to assess the perceived impact on the new business model's sustainability and ensure the answers' relevance.

The survey was designed to cover key elements such as environmental impact, the opinion on integrating the social program of paid apprenticeships as well as economic viability determined by the degree to which a person would be attracted to make use of the new concept.

The sample was comprised of the existing clientele, where 50 clients from different demographics were asked to participate in answering the survey. The survey was created in Romanian, to ensure a clear understanding of the market in which the company operates, and only 48 of the people answered the questions. The creation was possible by using the University of Twente-provided access to Qualtrics, where 6 questions were asked, each focusing on a different aspect of the Triple Bottom Line and general questions to determine the sample groups.

The survey commenced by inquiring whether the clients currently own a trailer, as a part of the sample group is anticipating the delivery of their product. If the answer was affirmative, the questionnaire was then followed by requesting the participants to select the brand of trailer(s) they own.

Once the new business model was explained in the survey, participants were queried about their prior usage of a similar service and their potential interest in using it to determine a potential space for profitability in relation to their interest in the model.

The questionnaire then followed the next two dimensions of the Triple Bottom Line- People and Planet. The interviewees were required to evaluate on a scale of five ranging from "very" to "not at all" (e.g. "very sustainable", "sustainable", "neutral", "not sustainable", "not at all sustainable") the topic of sustainability and the presence of a beneficial societal impact by combining the service with the social program.

The analysis method involved descriptive statistics to map out the distribution of responses. Therefore, a simple frequency distribution table was compiled for each survey question, with the number of responses expressed in percentages.

6.2 Practice

6.2.1 Profit

This section follows the profitability of the business model. Firstly, the development of a new product or service is important for achieving commercial success, as highlighted by literature (McDonald & Eisenhardt, 2019), and its sustainability can create a sustainable competitive advantage (Jiayue, 2024).

The survey results echoed this: almost all participants were interested in using the new concept, with 12% still being determined. This creates a reason to believe that the model quickly gains popularity, which could lead to significant revenue.

The cost of establishment is minimal, as the trailers are produced in-house, and recycled materials from the production line can be used.

Therefore, profitability is almost ensured, and the model should fulfil the foundation of a company, given that success is contingent on its uniqueness and ability to create value (Florek-Paszkowska, 2021).

6.2.2 People

This component is satisfied by integrating the company's social program, which is an alternative for unqualified adults who can join the company for a paid apprenticeship, with facilities included (accommodation and food), to learn crafts like welding and trailer servicing. Therefore, this model provides a learning opportunity for newcomers and can be a valuable source of experience for them. 88% of the participants in the survey agreed that it is a valuable way to embed responsibility for the community, sustainability, and customer attention.

Implementing this model can also foster a community, especially as the company is looking to redirect 5% of the value of each booking to a humanitarian cause of the customer's choice. Therefore, it encourages sharing items within the community but also offers visibility to different cases.

6.2.3 Planet

The Planet component is the building block of this research, as the previous alternatives for developing a more sustainable venture were evaluated as needing more impact (e.g. trying to find more sustainable materials is problematic when attempting to create a durable product).

On one hand, the occasional users of trailers will not acquire a product in order to make use of it a couple of times but will be able to rent a trailer whenever and wherever they find themselves in need of it. This not only reduces the number of trailers produced (since the company mainly manufactures trailers on demand) and implicitly the amount of resources wasted for a product that will end up discarded after a few years due to inactivity, but also the emissions of gases. The latter is achieved by having several hubs around the city and 24/7 rental options so that customers do not have to go across the city in order to rent a trailer and then carry it attached to the car the whole rental period, which can be much longer than the needed time, increasing fuel consumption and the emission of gases from the weight of the trailer.

90% of the trailer users surveyed agree that this option is more environmentally friendly, and have commented that they would use it for convenience, lower maintenance cost, and more sustainable consumption.

7. CONCLUSION

This study concludes that a business model for a trailer rental service with the characteristics of a shared platform can achieve the triple bottom line by focusing on key elements present in the Lean Canvas. The key to success is represented by creating a synergy between components that individually focus on People, Planet, and Profit, such as fostering communities through the share of goods, increasing responsible consumption, and delivering operational efficiency by the use of technology.

Combining these elements enhances local welfare for the targeted population and provides a suitable means of diversification within manufacturers.

8. CONTRIBUTION TO THEORY

This research contributes to the theoretical understanding of sustainable business models based on collaborative consumption by introducing a model that still needs to be discussed in literature, in relation to a manufacturer.

The thesis also expands the limits of the Lean Canvas by adapting the framework to a pre-established company and shifting the focus towards sustainability, thus providing a comprehensive tool for designing a business model with the Triple Bottom Line in mind.

The practical application of CIMO logic demonstrates a structured approach to designing a business model which provides aid in addressing the challenges and highlighting the opportunities, whilst the integration of the Triple Bottom Line as a motivator enhances the idea that all three of the components can be successfully integrated in a business model regardless of the sector in which the company operates and enriches discourse on sustainable entrepreneurship.

9. CONTRIBUTION TO PRACTICE

This research's practical contributions relate to providing a blueprint for implementation for the trailer manufacturer looking to develop a trailer rental service and for similar manufacturers potentially looking to balance their company's societal, environmental, and financial impact.

In this way, the thesis highlights some of the best practices in terms of developing an environmentally friendly service and enhancing community-building efforts, that can be adopted by companies in their strategy to improve their sustainability standards while still maintaining profitability.

The specific strategies detailed in this paper can be directly applied to multiple industries to improve business performance and can be valuable to managers and entrepreneurs.

10. LIMITATIONS AND FURTHER RESEARCH

It is essential to reflect on the research process and identify shortcomings that may have impacted the result. The limitations of this research can provide excellent opportunities for further studies to be developed on similar business models. Therefore, one constraint of this research is the limited time frame of completion, which restricts the ability to implement and further investigate the business model's impact. In this case, it creates an opening for more in-depth, long-term studies to evaluate how similar models contribute to the achievement of the Triple Bottom Line.

Another possible limitation is the external validity of the research. The generalisability of the presented model might be difficult to predict in different business settings and demographics. This implies that scholars could be making use of this knowledge gap to identify if the model could reach its aim in different environments.

The sample size was relatively small and comprised of company customers. Therefore, this could potentially be linked to bias and further limit the generalizability of the survey's results. However, considering that the new business model is directly linked to the trailer manufacturer, the bias might not be significant in this research.

In conclusion, whilst these limitations might create difficulties in capturing the complexity of the topic, the study provides valuable insights and an innovative business model. Therefore, future research addressing these limitations will improve the applicability and complexity of the findings.

11. REFERENCES

- Anderson, S. W. (2005). Managing costs and cost structure throughout the value chain: Research on Strategic Cost Management. SSRN Electronic Journal. <https://doi.org/10.2139/ssrn.869070>
- Andonov-Acev, D., Buckovska, A., Blagojevic, Z., & Kraljevski, V. (2008). Enterprise performance monitoring. ITI 2008 - 30th International Conference on Information Technology Interfaces. <https://doi.org/10.1109/iti.2008.4588405>
- Baldassarre, B., Calabretta, G., Bocken, N. M. P., & Jaskiewicz, T. (2017). Bridging Sustainable Business Model Innovation and user-driven innovation: A process for sustainable value proposition design. *Journal of Cleaner Production*, 147, 175–186. <https://doi.org/10.1016/j.jclepro.2017.01.081>
- Bartels, N., & Gordijn, J. (2022). A business model construction kit for platform business models - research preview. *Requirements Engineering: Foundation for Software Quality*, 175–182. https://doi.org/10.1007/978-3-030-98464-9_14
- Costa Fernandes, S., & Rozenfeld, H. (2024). Business model innovation through the design of circular product-service system value propositions: A method proposal. *Business Strategy and the Environment*. <https://doi.org/10.1002/bse.3759>
- Denyer, D., Tranfield, D., & van Aken, J. E. (2008). Developing design propositions through research synthesis. *Organization Studies*, 29(3), 393–413. <https://doi.org/10.1177/0170840607088020>
- Eisape, D. (2019). The platform business model canvas a proposition in a design science approach. *American Journal of Management Science and Engineering*, 4(6), 91. <https://doi.org/10.11648/j.ajmse.20190406.12>
- Elkington, J. (n.d.). Enter the triple bottom line. <https://johnelkington.com/archive/TBL-elkington-chapter.pdf>
- Florek-Paszowska, A., Ujwary-Gil, A., & Godlewska-Dzioboń, B. (2021a). Business innovation and critical success factors in the era of digital transformation and turbulent times. *Journal of Entrepreneurship, Management and Innovation*, 17(4), 7–28. <https://doi.org/10.7341/20211741>
- Florek-Paszowska, A., Ujwary-Gil, A., & Godlewska-Dzioboń, B. (2021b). Business innovation and critical success factors in the era of digital transformation and turbulent times. *Journal of Entrepreneurship, Management and Innovation*, 17(4), 7–28. <https://doi.org/10.7341/20211741>
- Florek-Paszowska, A., Ujwary-Gil, A., & Godlewska-Dzioboń, B. (2021c). Business innovation and critical success factors in the era of digital transformation and turbulent times. *Journal of Entrepreneurship, Management and Innovation*, 17(4), 7–28. <https://doi.org/10.7341/20211741>
- Hamidizadeh, M., & Taheri, M. (2017). A comprehensive literature review in competitive advantages of businesses. *International Journal of Advanced Studies in Humanities and Social Science*, 8(3), 223–240. <https://doi.org/10.33945/sami/ijshss.2019.3.1>
- Harmaala, M. M. (2015). The sharing city as a platform for a more sustainable city environment? *International Journal of Environment and Health*, 7(4), 309. <https://doi.org/10.1504/ijenvh.2015.077116>
- Jiayue, Z. (2024). What is a successful business model? exploration and measurement of key attributes of business model. *Sage Open*, 14(2). <https://doi.org/10.1177/21582440241251601>
- Keskin, D., & Romme, G. (2020). Mixing oil with water: How to effectively teach design science in management education? *BAR - Brazilian Administration Review*, 17(1). <https://doi.org/10.1590/1807-7692bar2020190036>
- Leismann, K., Schmitt, M., Rohn, H., & Baedeker, C. (2013). Collaborative consumption: Towards a resource-saving consumption culture. *Resources*, 2(3), 184–203. <https://doi.org/10.3390/resources2030184>
- Link, P. (2016). How to become a lean entrepreneur by applying lean start-up and Lean canvas? *Advances in Digital Education and Lifelong Learning*, 57–71. <https://doi.org/10.1108/s2051-229520160000002003>
- McDonald, R. M., & Eisenhardt, K. M. (2019). Parallel play: Startups, nascent markets, and effective business-model design. *Administrative Science Quarterly*, 65(2), 483–523. <https://doi.org/10.1177/0001839219852349>
- Mone, M. A., & McKinley, W. (1993). The uniqueness value and its consequences for organization studies. *Journal of Management Inquiry*, 2(3), 284–296. <https://doi.org/10.1177/105649269323010>
- Osterwalder, A., Pigneur, Y., Bernarda, G., Smith, A., & Papadakos, T. (2015). Value proposition design: How to create products and services customers want. Wiley.
- Perren, R., & Grauerholz, L. (2015). Collaborative consumption. *International Encyclopedia of the Social & Behavioral Sciences*, 139–144. <https://doi.org/10.1016/b978-0-08-097086-8.64143-0>
- Puschmann, T., & Alt, R. (2016). Sharing economy. *Business & Information Systems Engineering*, 58(1), 93–99. <https://doi.org/10.1007/s12599-015-0420-2>
- R Thalkar, V. (2021). Customer segmentation using machine learning. *International Journal of Scientific Research in Computer Science, Engineering and Information Technology*, 207–211. <https://doi.org/10.32628/cseit217654>
- Schreiner, N. (2020). Konsumentenverhalten in Der Sharing Economy. <https://doi.org/10.5771/9783748905721>
- Sekáč, P. (2023). Key performance indicators in the context of sustainable business development. *EDAMBA 2022: Conference Proceedings*. <https://doi.org/10.53465/edamba.2022.9788022550420.345-354>
- Sharma, A., & Mehrotra, A. (2007). Choosing an optimal channel mix in multichannel environments. *Industrial Marketing Management*, 36(1), 21–28. <https://doi.org/10.1016/j.indmarman.2006.06.012>
- Venkatraman, S., & Nayak, R. R. (2015). Relationships among triple bottom line elements. *Journal of Global Responsibility*, 6(2), 195–214. <https://doi.org/10.1108/jgr-04-2012-0013>
- Žak, A. (2015). Triple bottom line concept in theory and Practice. *Prace Naukowe Uniwersytetu Ekonomicznego We Wrocławiu*, (387). <https://doi.org/10.15611/pn.2015.387.21>

