

APPENDIX

Scaling Sustainable Business Models through Strategic Design

A Framework for Designing Resilient & Sustainable Businesses

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Appendix 1 - Interview Guide

Scaling Sustainable Business Models through Strategic Design: A Framework for Designing Resilient & Sustainable Businesses

Objective of the study

The objective of the study is to develop a framework using strategic design to help startups transform their sustainable business models to be resilient and scalable. The key objective of this explorative semi-structured interview is to understand the building blocks of successful sustainable startups and scale-ups. Through the insights from the literature review, I have designed a "pre-framework" that addresses the essential elements to be considered by sustainable startups in order to scale up. This pre-framework would be used as a probe to stimulate the participants and get their feedback on the designed framework elements.

Key Sub-Research Questions:

1. What are the essential building blocks of a sustainable startup?
2. Why do many Sustainable Business Models (SBMs) fail to scale up despite their initial success?
3. Test the application of the pre-framework.

Practicalities

1. Number of interviews: 15
2. Approximate Duration: 45-60 minutes.
3. Mode of Interview: Both online and offline
4. Dates: 15th April- 15th May 2024

Interview Guide

Introduction:

Introduce Yourself

Do you mind if we record it?

Hello!

You are invited to participate in a research study to develop a framework to help startups transform their sustainable business models to be resilient and scalable. This study is a part of my graduation project from the Faculty of Industrial Design Engineering at Delft University of Technology, Netherlands.

This interview will take around 45 - 60 mins. You are free to omit any question we ask.

Your participation in this study is entirely voluntary, and you can withdraw at any time.

Please let me know if any question makes you uncomfortable. I will send a transcript of the interview after this so that you can check and ask us to omit any information that may seem sensitive; we will delete it, and the same will not be used for this research.

If you agree with the information above, we will proceed with the interview.

Part I: Before showing them the framework (approx. 20 mins)

Background Information:

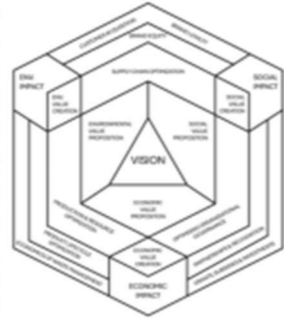
1. Can you tell me a bit about your journey to founding <Startup Name>?
2. What inspired you to focus on sustainability in your business model?
 - a. **Probe:** What is your vision?
3. What does "Scaling up your Business" mean to you?
4. Can you discuss any frameworks or tools you've used to develop your business model?
 - a. **Probe:** Maybe, for example, Business Model Canvas or SWOT?

Challenges and Solutions:

1. What have been the major challenges to scale while maintaining sustainability in your business?
 - a. **Probe:** If they couldn't solve it, what is/was your approach?
 - b. **Probe:** Try to move it towards scaling up

Part II: After showing them the pre-framework (approx. 30 mins)

This figure represents the pre-framework designed to help sustainable startups in scaling up. This is our take on a vision-driven framework, which starts with the vision of the startup, from which the social, economic and environmental value propositions are derived. The next level focuses on the value creation tasks and the mechanisms to integrate them. For example, the environmental and social value-creation tasks can be linked and optimised through the supply chain. Similarly, the third level deals with the impact of the startups, dividing it into the social, environmental and economic impact. Here too, we attempt to identify the inter-relationships of the delivery and capture of these impacts through the framework.



General feedback on the framework:

1. What are your first thoughts on the framework?
2. Which elements of the framework are relevant to your business?

Identifying essential connections:

1. From the literature, we identified that supply chain optimisation is a potential link between environmental and social value creation. What are your thoughts on this?
a. Probe: What kind of relationship do you think is relevant to your startup?
2. What about the relationship between environmental and economic value creation?
a. Probe: What kind of relationship do you think is relevant to your startup?
3. What about the relationship between social and economic value creation?
a. Probe: What kind of relationship do you think is relevant to your startup?

Measurement of Impact:

1. What do you think are the best metrics to measure the social impact of a startup? (for experts)/ What metrics do you use to measure the economic impact of your start-up?
2. What about the Environmental Impact?
3. What about the Economic Impact?
4. Like the previous level, the impacts are also associated with common mechanisms to deliver and capture them. What do you think of these mechanisms?
a. Probe: Go one by one from environmental to social to economic.
5. What would be the relevant mechanisms in your startup?
a. Probe: Go one by one from environmental to social to economic.

Part III: Finalizing interview and wrapping up (10 mins)

Overall Feedback on the Framework:

1. After the discussion, what are your final remarks, suggestions or comments on the framework?
a. Probe: Would it benefit you to use it in your practice?
b. Probe: Are we missing something? If yes, then what are we missing?

Future Outlook:

1. What future plans do you have for scaling up your startup?
a. Probes: *If they don't want to scale up. Why?*
2. How do you see the role of sustainable startups evolving in the coming years?

Advice for Aspiring Entrepreneurs:

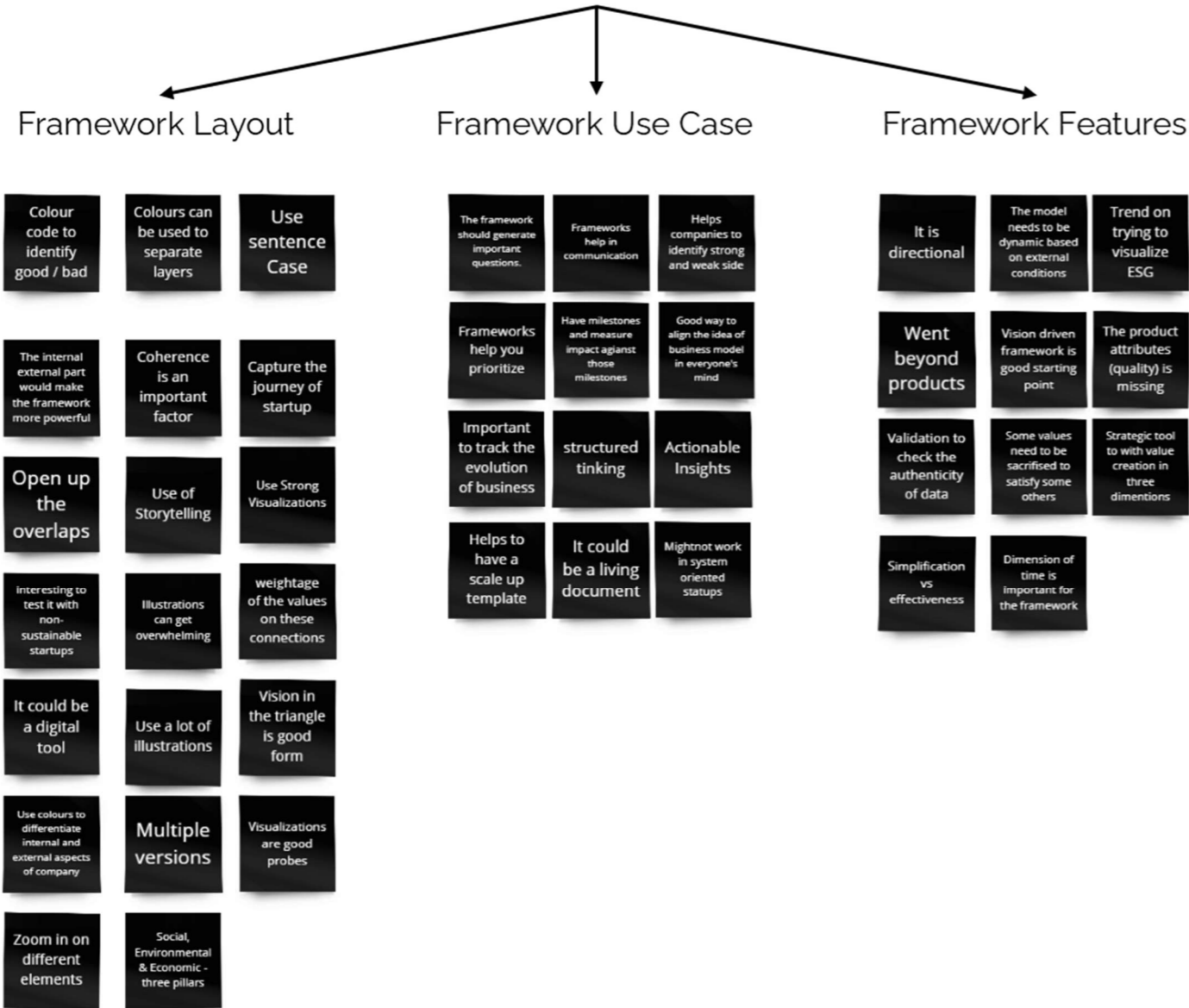
1. What advice would you give to someone looking to scale a sustainable business?
2. Are there any resources or networks you found particularly helpful?

Closing:

1. Is there anything else you'd like to share that we haven't covered?
2. Thank the interviewee for their time and insights.

Appendix 2 - Code Tree

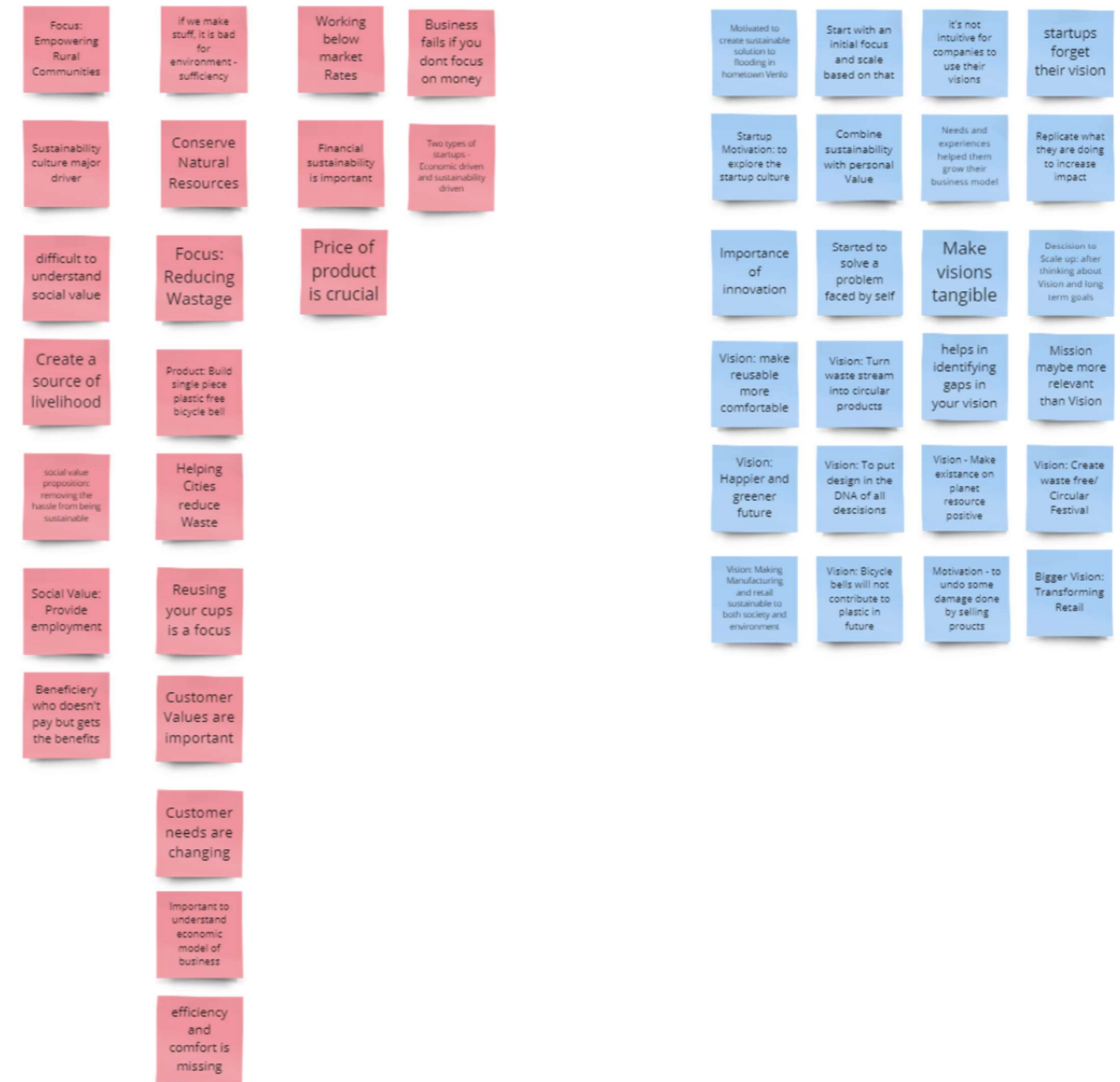
Framework Layout and General Perceptions



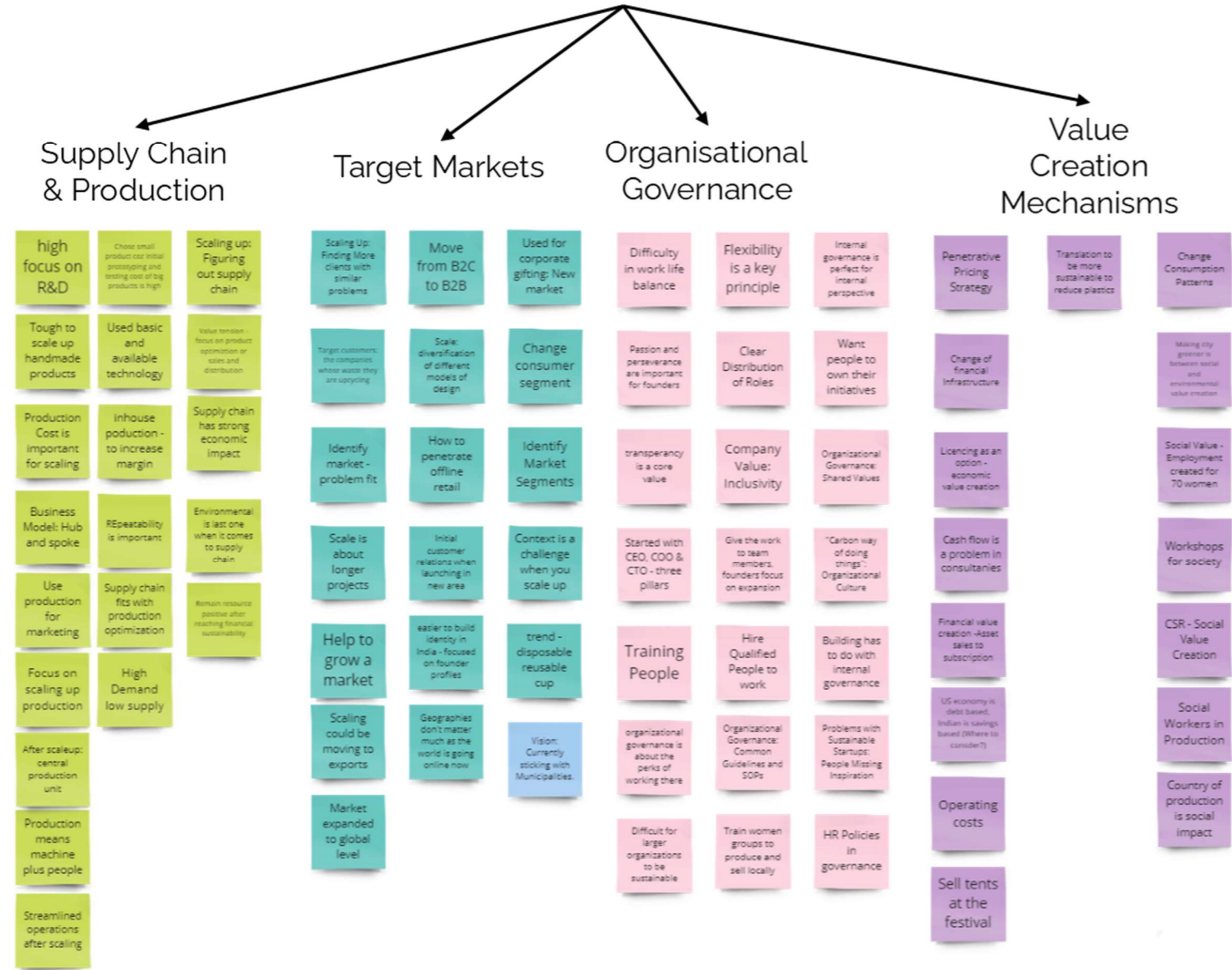
Core Values

Value Propositions

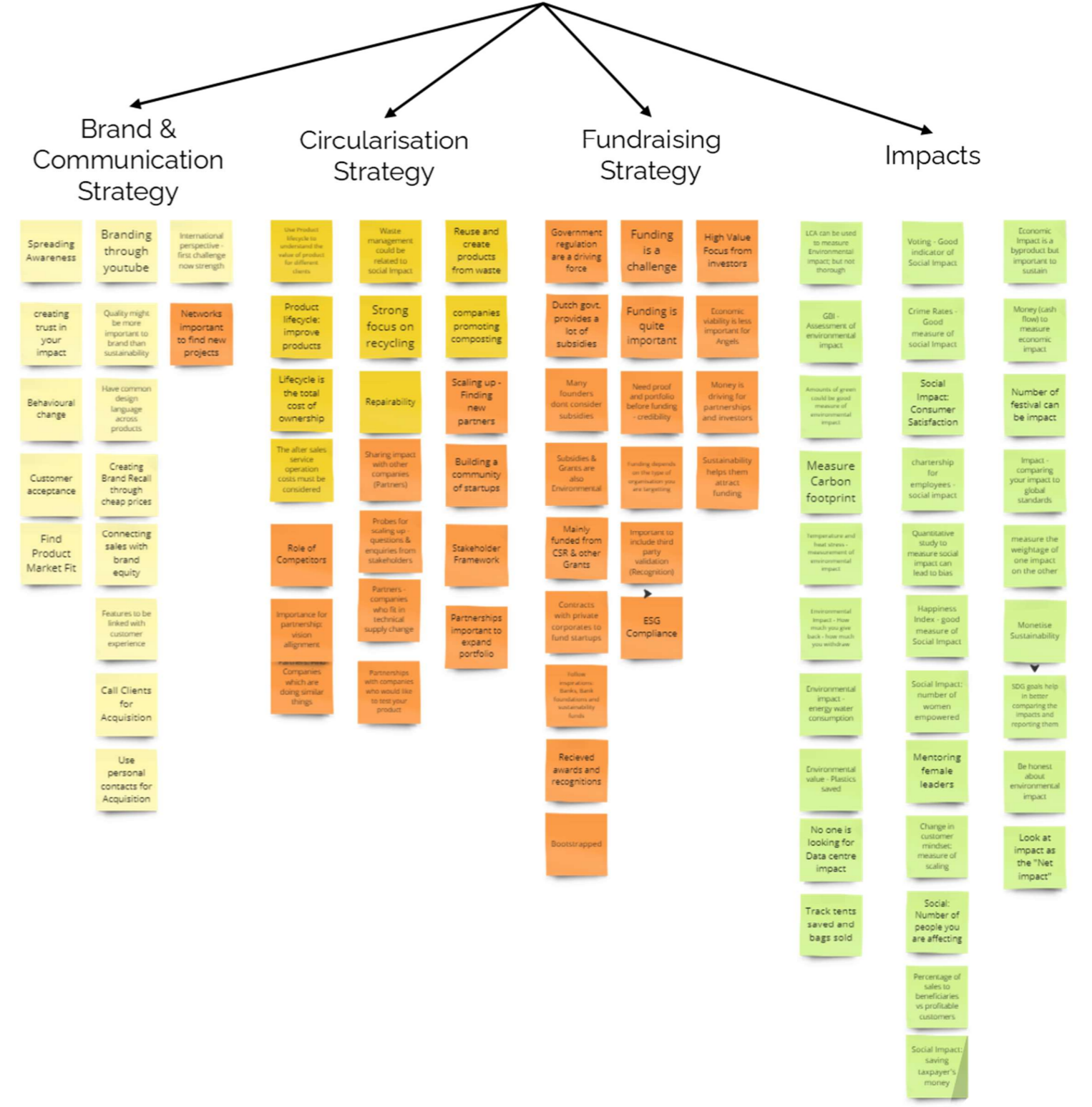
Vision



Internal Aspects of Scaling up



External Aspects of Scaling up



Appendix 3 - The Curious Case of Jollie Jar: Workshop Slides

Scaling Sustainable Startups through Strategic Design



Name	Department/ Faculty	Team
Participant 1	TPM	Team 1
Participant 2	IPD	
Participant 3	SPD	
Participant 9 (Absent)	TPM	Team 2
Participant 4	SPD	
Participant 5	ENVM	Team 3
Participant 6	SPD	
Participant 7	ENVM	
Participant 8	IPD	

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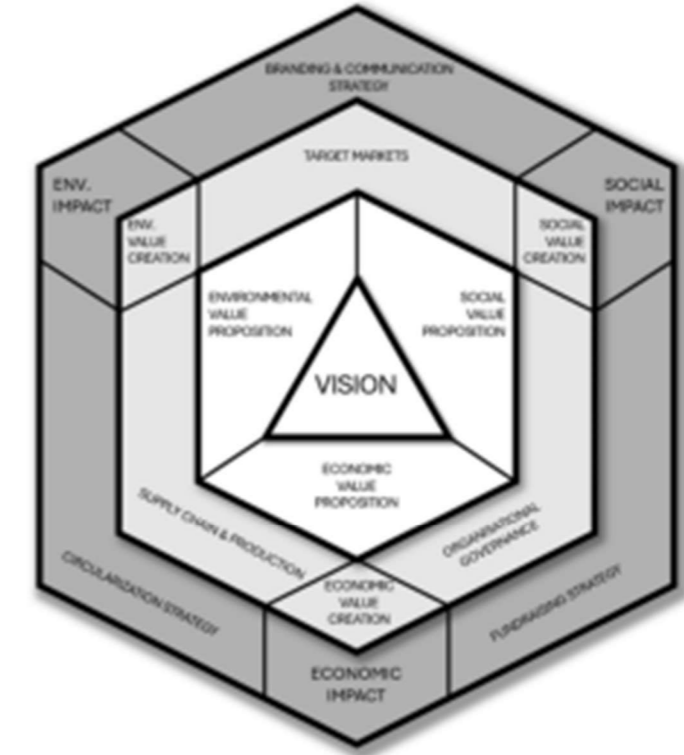
Scaling Sustainable Startups through Strategic Design

Agenda

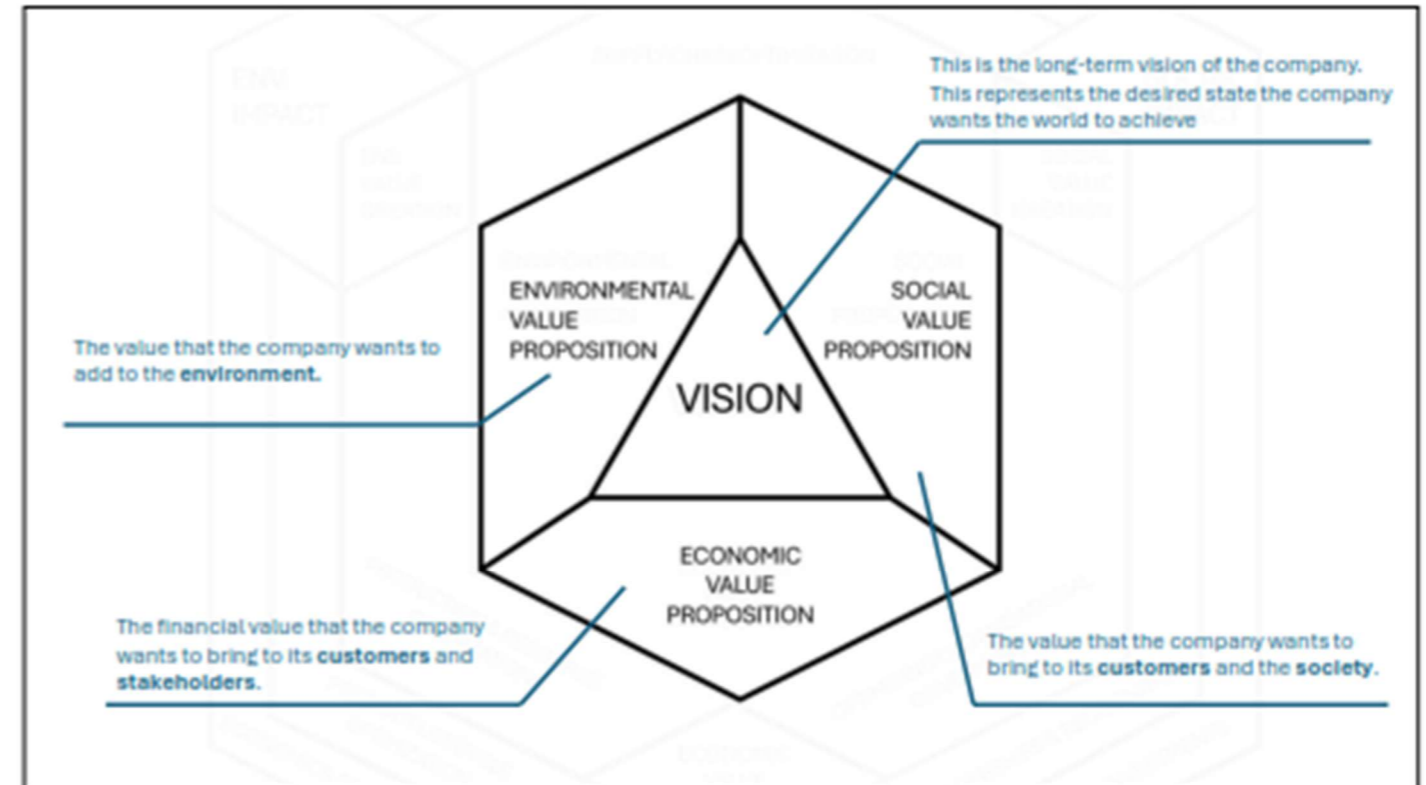
16.00 – 16.15 hrs	Introduction to the framework
16.15 – 16.30 hrs	Introduction to Business Case
16.30 – 17.30 hrs	Solving Business Case in Teams
17.30 – 18.00 hrs	Plenary Discussion & Presentations
18.00 - Later	Close and Voluntary Discussions

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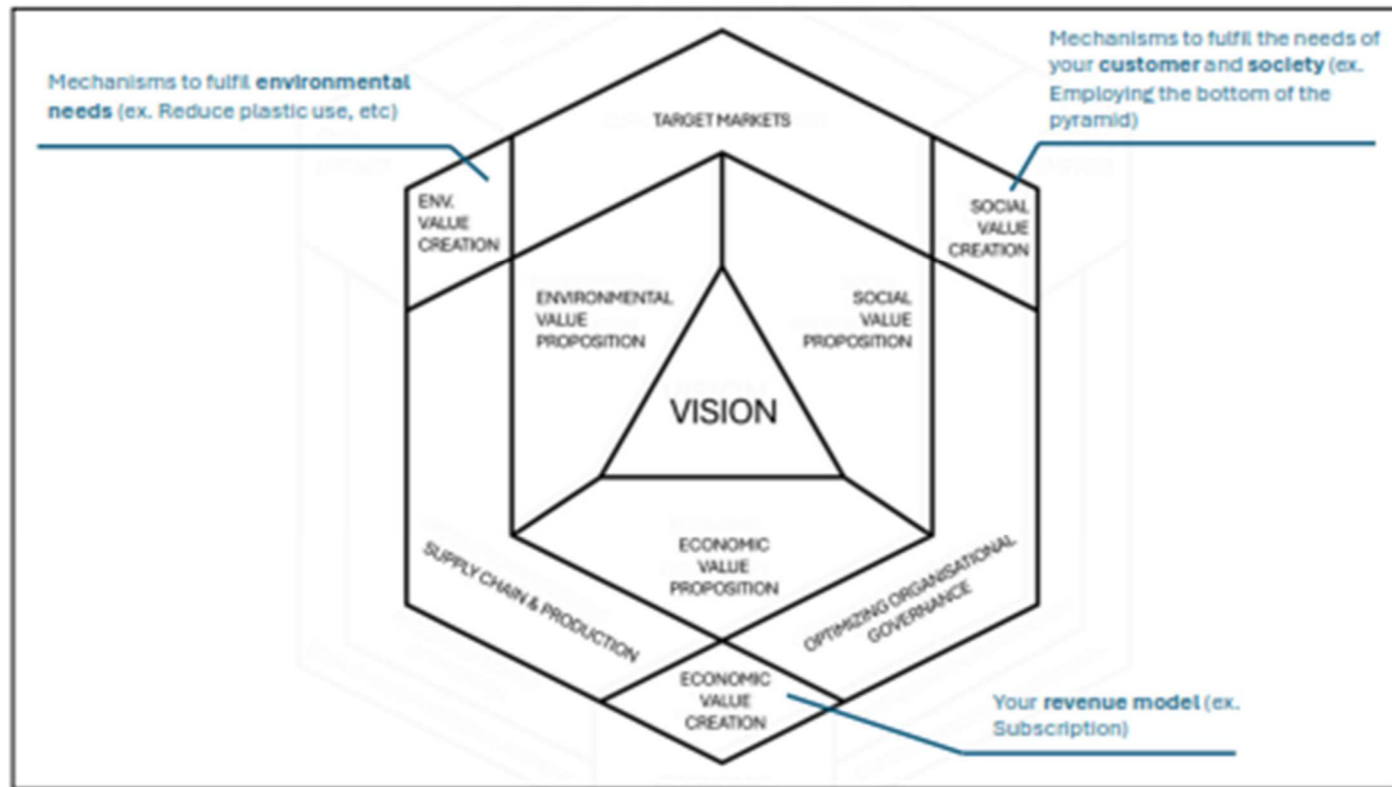
The Framework.



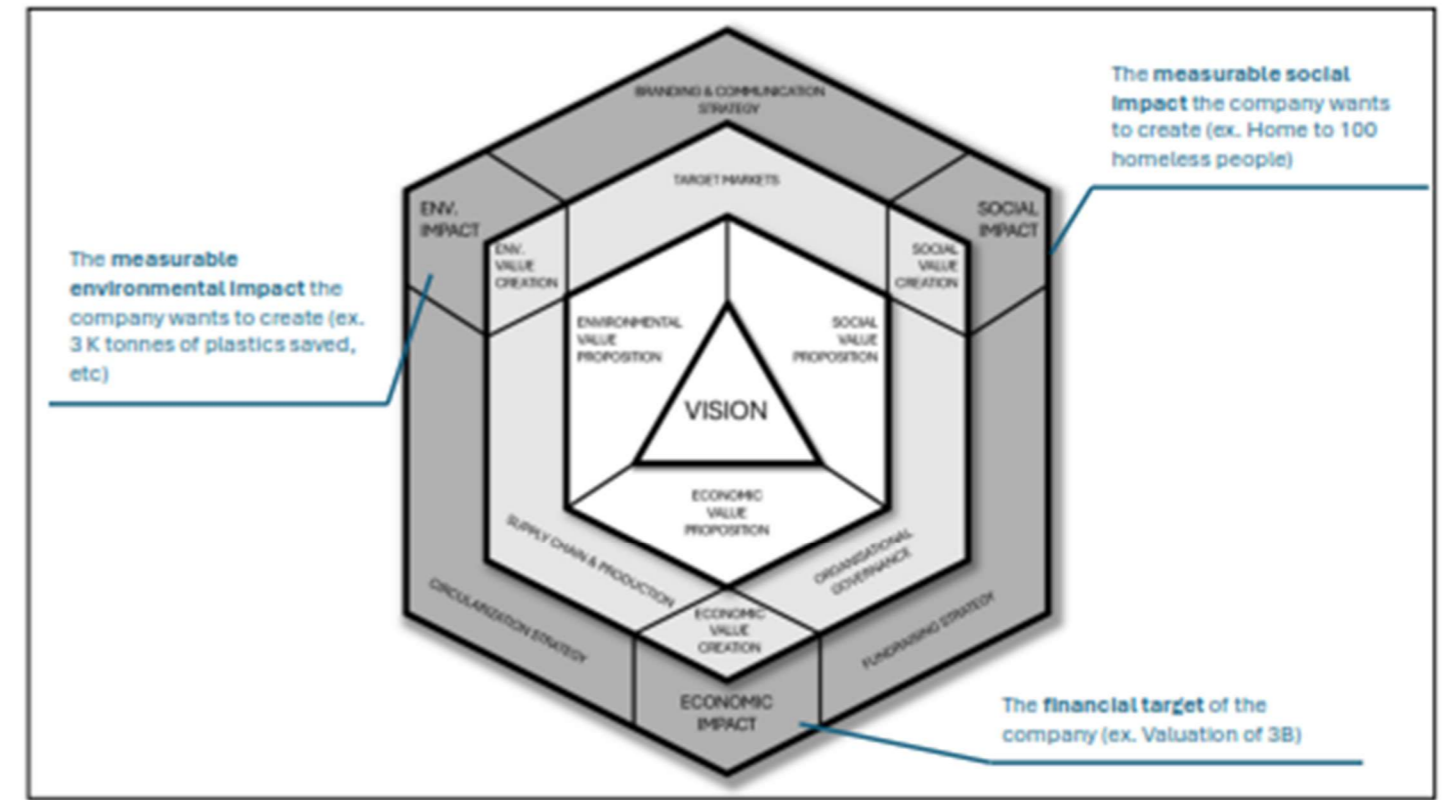
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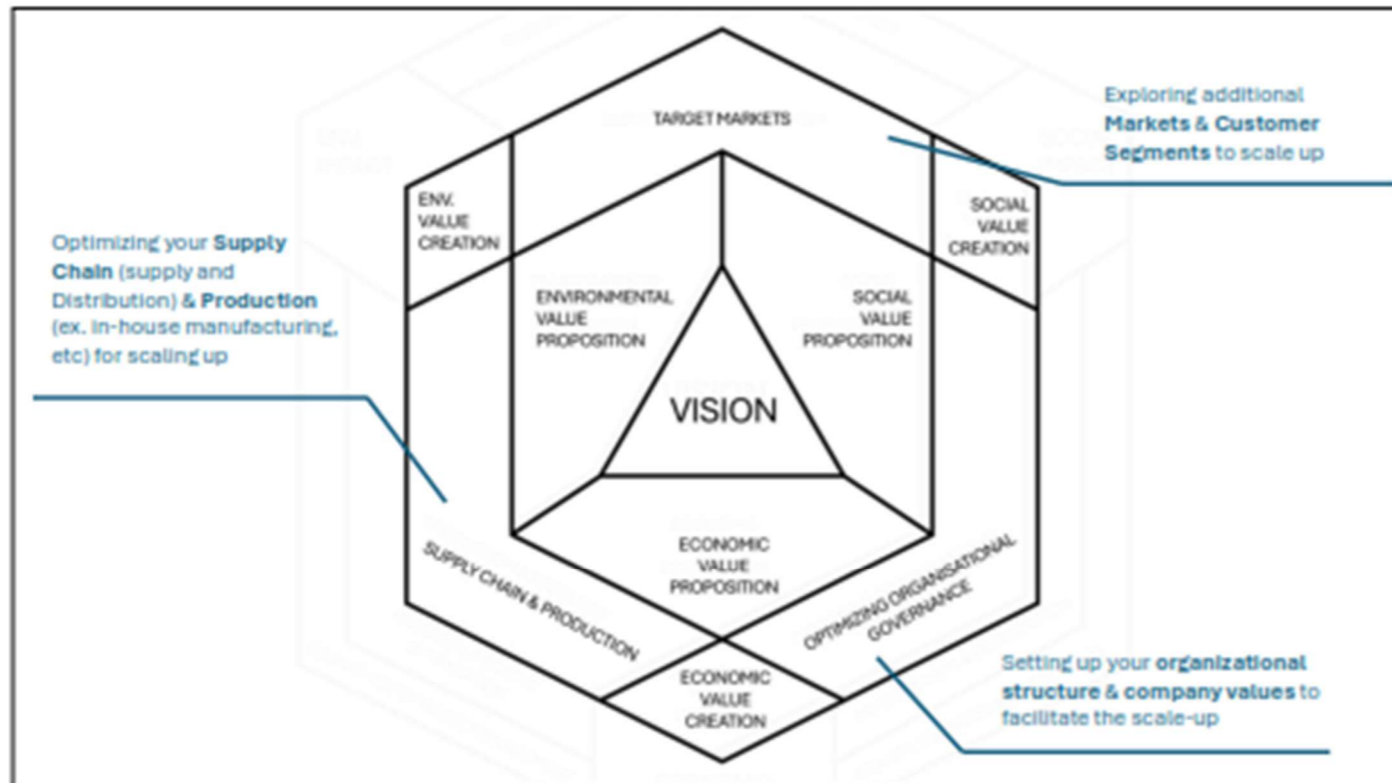
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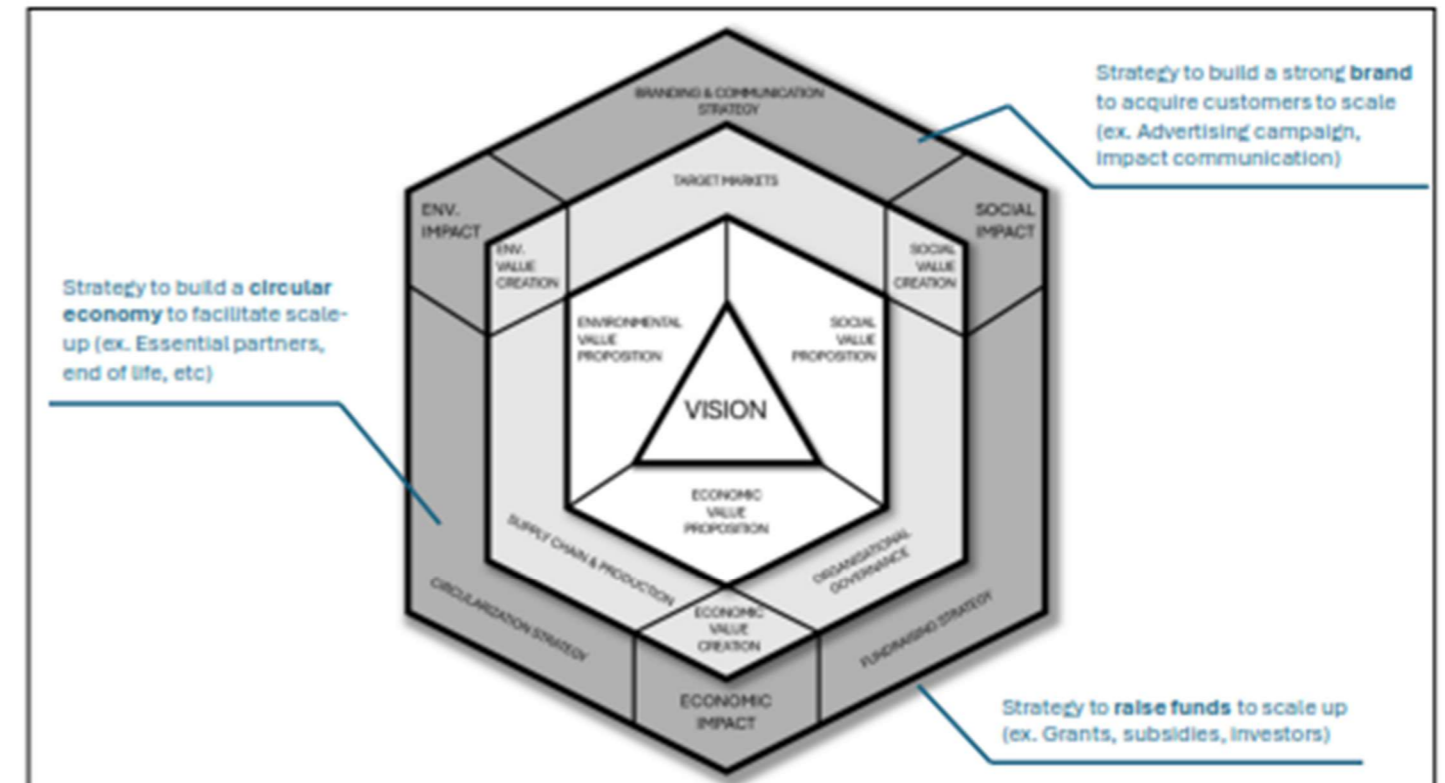
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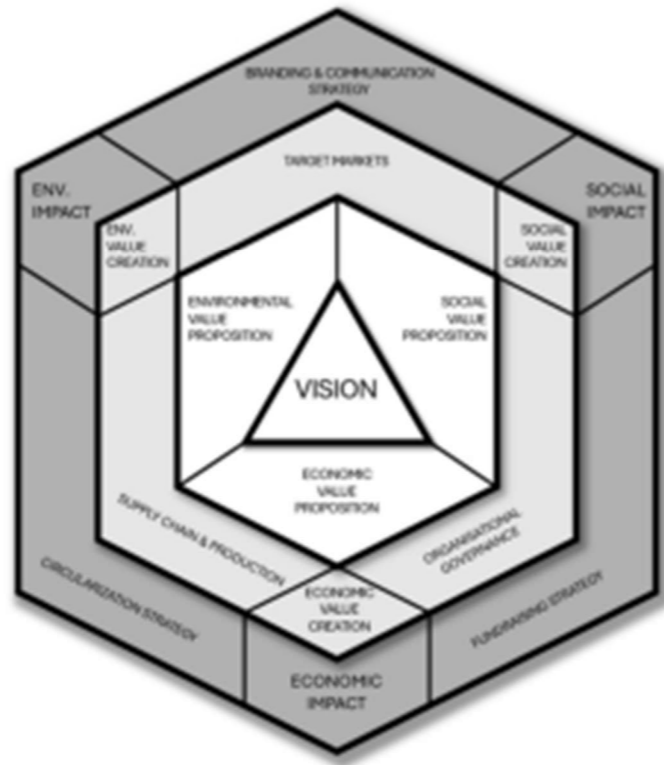


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Questions?



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Jollie Jar

Jollie Jar is a pioneering Packaging-free online supermarket based in the Netherlands, known for its innovative approach to grocery shopping with a focus on sustainability.

Founded in January 2019 by IDE Alumni, the company delivers locally sourced, perishable groceries in reusable glass jars to customers' doorsteps. The jars come with a deposit that is refunded when they are returned, effectively reducing packaging waste and CO2 emissions.

Their goal is to make grocery shopping packaging-free, and they offer a convenient app to facilitate this process. Jollie Jar stands out for its commitment to reducing environmental impact and promoting a circular economy.



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The Curious Case of Jollie Jar

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The Sustainable Mission



Jollie Jar

Jollie Jar was founded with the mission of reducing plastic waste by delivering groceries in reusable jars. The company's focus on sustainable packaging and plastic waste reduction was innovative and received positive media attention. Their focus is also to source their groceries from local communities to empower them.

Challenges

Despite its innovative approach and positive media attention, Jollie Jar struggles to scale up. This highlights the challenges of implementing a sustainable mission in a competitive market.



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Challenges to Scale Up – Flaws in Business Model



Dependence on Single Supplier

Jollie Jar's heavy reliance on a single supplier makes the company vulnerable to supply chain disruptions and limited its ability to scale up its operations.

Challenges in Operations

Jollie Jar faces challenges in scaling up its operations due to its lack of infrastructure. This limits its ability to meet growing demand and expand its reach.

Costly Reusable Jars

Jollie Jar's reusable jars are expensive to produce and transport, which puts a strain on its finances. This makes the company less competitive and reduced its profitability.



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Challenges to Scale Up – Financial Mismanagement



Value Tensions

Jollie Jar's financial mismanagement created by their tunnel focus on only their sustainable values resulted in overspending, which has resulted in misaligned budgets and decreased profitability.

Poor Cash Flow Management

Jollie Jar's founders are not well-versed in handling financials. This led to poor cash flow management, which affected the company's financial performance and growth potential in the last Financial Year.

Lack of Funding

Jollie Jar is struggling to secure additional funding to support its growth, limiting its ability to scale and expand into new markets.



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Challenges to Scale Up – Competition Pressure



Jollie Jar faces competition from established players in the grocery delivery market, such as Albert Heijn and Jumbo, who have the advantage of scale and resources. This makes it difficult for Jollie Jar to compete on price. Their goal of only sourcing from local produce limits their product range as well.



JUMBO

Flink

PICNIC



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Challenges to Scale Up – Stakeholder Impact



Employees

The slow growth of Jollie Jar has a significant impact on its employees, who could potentially lose their jobs and financial security.

Investors

The failure of Jollie Jar to grow is showing a significant impact on its investors, who are losing their money and potentially their trust in the company.

Customers

The failure of Jollie Jar could have a significant impact on its customers, who may lose a sustainable shopping option and potentially their trust in the company.

Industry Impact

The difficulty of Jollie Jar to scale highlights the challenges of implementing sustainable business models in the grocery delivery industry, especially regarding cost and logistics.



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Business Case



Jollie Jar

In today's scenario, you are some top consultancy teams, and I am the CEO of Jollie Jar.

Your goal today is to transform Jollie Jar from a startup facing these challenges into a scalable, financially stable, and impactful enterprise. This will require a multifaceted approach that not only resolves immediate financial concerns but also positions the company for long-term growth and success in the competitive grocery market.

You have to do so using the framework explained to you before this. Please use the Appendix for any additional information regarding the company. Feel free to ask me for any additional information that you may require to design the strategies.

After your discussion (1 hr.), we will have short presentations about your plans. The main focus of this would be your process of solving this business case using the framework and how you come up with the relevant strategies/ business recommendations. We then have a plenary discussion about the framework for about 15 minutes.



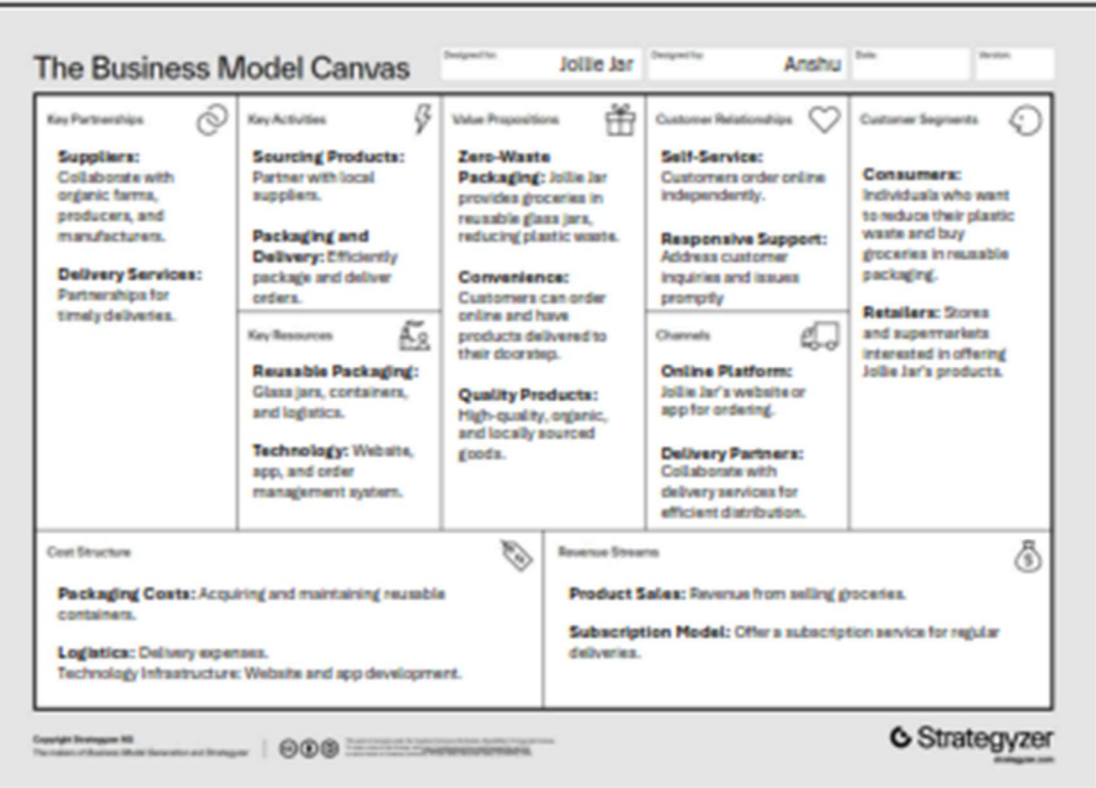
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Presentation Time!!



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Appendix -1 Business Model Canvas



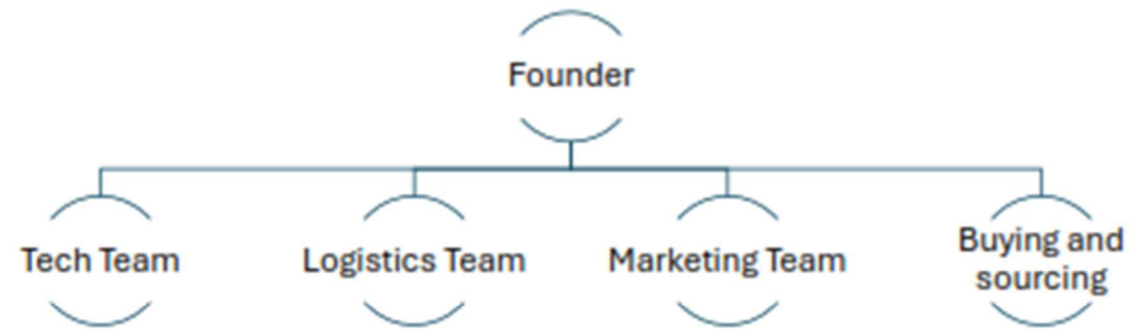
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Appendix -2 Current Supply Chain



Appendix -2
Current Organizational Structure



Feedback Form - Workshop



Appendix 4 - Graduation Project Brief

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IDE Master Graduation Project

Project team, procedural checks and Personal Project Brief

In this document the agreements made between student and supervisory team about the student's IDE Master Graduation Project are set out. This document may also include involvement of an external client, however does not cover any legal matters student and client (might) agree upon. Next to that, this document facilitates the required procedural checks:

- Student defines the team, what the student is going to do/deliver and how that will come about
- Chair of the supervisory team signs, to formally approve the project's setup / Project brief
- SSC E&SA (Shared Service Centre, Education & Student Affairs) report on the student's registration and study progress
- IDE's Board of Examiners confirms the proposed supervisory team on their eligibility, and whether the student is allowed to start the Graduation Project

STUDENT DATA & MASTER PROGRAMME

Complete all fields and indicate which master(s) you are in

Family name	Panigrahi	IDE master(s)	<input type="checkbox"/> IPD	<input type="checkbox"/> DFI	<input checked="" type="checkbox"/> SPD
Initials	A	2 nd non-IDE master	--		
Given name	Anshuman	Individual programme (date of approval)	--		
Student number	5708079	Medisign	<input type="checkbox"/>		
		HPM	<input type="checkbox"/>		

SUPERVISORY TEAM

Fill in the required information of supervisory team members. If applicable, company mentor is added as 2nd mentor

Chair	Dr. Shahrokh Nikou	dept./section	DOS/ RMCB	<p> Ensure a heterogeneous team. In case you wish to include team members from the same section, explain why.</p> <p> Chair should request the IDE Board of Examiners for approval when a non-IDE mentor is proposed. Include CV and motivation letter.</p> <p> 2nd mentor only applies when a client is involved.</p>
mentor	Dr. Giulia Calabretta	dept./section	DOS/ MOD	
2 nd mentor	--			
client:	--			
city:	Delft	country:	Netherlands	
optional comments				

APPROVAL OF CHAIR on PROJECT PROPOSAL / PROJECT BRIEF -> to be filled in by the Chair of the supervisory team

Sign for approval (Chair)

Name Shahrokh Nikou Date 26.02.2024 Signature Shahrokh Nikou

CHECK ON STUDY PROGRESS

To be filled in by SSC E&SA (Shared Service Centre, Education & Student Affairs), after approval of the project brief by the chair. The study progress will be checked for a 2nd time just before the green light meeting.

Master electives no. of EC accumulated in total _____ EC	X	YES	all 1 st year master courses passed
Of which, taking conditional requirements into account, can be part of the exam programme _____ EC		NO	missing 1 st year courses

Comments:

Sign for approval (SSC E&SA)

Name Robin den Braber Date 04-03-2024 Signature RdB

APPROVAL OF BOARD OF EXAMINERS IDE on SUPERVISORY TEAM -> to be checked and filled in by IDE's Board of Examiners

Does the composition of the Supervisory Team comply with regulations?

YES	V	Supervisory Team approved
NO		Supervisory Team not approved

Comments:

Based on study progress, students is ...

V	ALLOWED to start the graduation project
	NOT allowed to start the graduation project

Comments:

Sign for approval (BoEx)

Name Monique von Morgen Date 7/3/2024 Signature Monique von Morgen

Personal Project Brief – IDE Master Graduation Project

Name student Anshuman Panigrahi

Student number 5,708,079

PROJECT TITLE, INTRODUCTION, PROBLEM DEFINITION and ASSIGNMENT

Complete all fields, keep information clear, specific and concise

Project title Scaling Sustainable Business Models through Strategic Design : A Framework for Designing Resilient & Sustainable Businesses

Please state the title of your graduation project (above). Keep the title compact and simple. Do not use abbreviations. The remainder of this document allows you to define and clarify your graduation project.

Introduction

Describe the context of your project here; What is the domain in which your project takes place? Who are the main stakeholders and what interests are at stake? Describe the opportunities (and limitations) in this domain to better serve the stakeholder interests. (max 250 words)

Sustainability is a key challenge and opportunity for businesses in the 21st century. While it offers numerous benefits, such as improved brand image, increased customer loyalty, and potential cost savings, it also presents significant challenges, such as determining the right focus areas, transforming business operations and finding relevant collaborations (de Oliveira et al., 2023) and performing Business Model Innovations (BMI) (refer Appendix 1). Traditional business models often focus on economic value, with less consideration for environmental and social impacts. In contrast, Sustainable Business Models (SBMs) (refer Appendix 1) expand their focus to create value for the environment, society, and their customers while maintaining their relevancy by being robust and viable in the long run (Nosratabadi et al., 2019). However, many SBMs face difficulty to achieve their dual objectives to continue on their social mission, while being profitable enough to scale up in the long term. Scaling up is the process of increasing the impact and reach of a business model while preserving or enhancing its value proposition and financial performance; and is crucial for SBMs to achieve their sustainability goals and to compete with traditional businesses (Palomares-Aguirre et al., 2018). Strategic design offers some tools and methods to tackle these challenges and create opportunities, such as creating new value propositions, identifying new markets and stakeholders, or developing new partnerships for Sustainable Business Model Innovation (SBMI) (refer Appendix 1). It can help SBMs address their complex and dynamic sustainability goals and create meaningful and desirable solutions for their stakeholders by integrating effective design practices like prototyping, user driven approach and focus on behavioral change rather than technological innovations (Baldassarre et al., 2017). This thesis aims to explore how strategic design can help SBMs to scale up and create sustainable competitive advantages over conventional business models in the long run. The expected outcome is a framework that can help SBM stakeholders design better business models for scalability.

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Personal Project Brief – IDE Master Graduation Project

Problem Definition

What problem do you want to solve in the context described in the introduction, and within the available time frame of 100 working days? (= Master Graduation Project of 30 EC). What opportunities do you see to create added value for the described stakeholders? Substantiate your choice. (max 200 words)

Business Model Innovations can yield greater returns than innovations in products or processes (Chesbrough, 2007). Many startups with sustainable products or services often fail to scale up and reach a wider market, leading to bankruptcy despite their initial success (Bocken et al., 2014). The reasons behind this failure and its root causes are not well-understood or addressed in current literature or practice (Geissdoerfer et al., 2018). Moreover, there is a lack of a comprehensive framework that integrates strategic design principles into Sustainable Business Models (SBMs) to enhance their scalability. Existing Sustainable Business Model Innovations (SBMIs) frameworks do not adequately address this issue (Breuer et al., 2018). In summary, the main research questions are:

1. Why do many SBMs fail to scale up despite their initial success?
2. What are the applications of strategic design in SBMs?
3. How can we integrate Strategic Design in SBMI to create an effective framework that helps Startups to Scale up?

The research will contribute to filling these gaps and potentially provide valuable insights for startups and businesses aiming to scale their sustainable businesses.

Assignment

This is the most important part of the project brief because it will give a clear direction of what you are heading for. Formulate an assignment to yourself regarding what you expect to deliver as result at the end of your project. (1 sentence) As you graduate as an industrial design engineer, your assignment will start with a verb (Design/Investigate/Validate/Create), and you may use the green text format:

Develop a framework using strategic design to help startups transform their sustainable business models to be resilient and scalable.

Then explain your project approach to carrying out your graduation project and what research and design methods you plan to use to generate your design solution (max 150 words)

The thesis will adopt the double-diamond design approach, Shown as follows:

1. In-depth literature review of sustainable business models and existing frameworks of SBMIs — Identify the different SBMI models and existing frameworks in the literature and analyse their key elements, principles, applications and challenges. (Discover)
2. Qualitative Research through expert interviews to validate the findings of literature review and generate essential insights to develop the preliminary framework. (Discover)
3. Identify Strategic Design Methods that can be integrated into these SBMs to help them achieve their desired values - Use these design methodologies to identify and ideate key elements of the preliminary framework. (Define & Develop)
4. Validate these elements of the framework using quantitative analysis with Startups and Scale-ups. (Deliver)
5. Integrate the insights from the quantitative data analysis to refine and create the final framework. (Deliver)

Project planning and key moments

To make visible how you plan to spend your time, you must make a planning for the full project. You are advised to use a Gantt chart format to show the different phases of your project, deliverables you have in mind, meetings and in-between deadlines. Keep in mind that all activities should fit within the given run time of 100 working days. Your planning should include a **kick-off meeting, mid-term evaluation meeting, green light meeting and graduation ceremony**. Please indicate periods of part-time activities and/or periods of not spending time on your graduation project, if any (for instance because of holidays or parallel course activities).

Make sure to attach the full plan to this project brief. The four key moment dates must be filled in below

Kick off meeting	22 Feb 2024
Mid-term evaluation	25 Apr 2024
Green light meeting	25 Jun 2024
Graduation ceremony	18 Jul 2024

In exceptional cases (part of) the Graduation Project may need to be scheduled part-time. Indicate here if such applies to your project

Part of project scheduled part-time	
For how many project weeks	
Number of project days per week	

Comments:

Taking personal Leave for 1 week.
(From 25th March to 29th March)

Motivation and personal ambitions

Explain why you wish to start this project, what competencies you want to prove or develop (e.g. competencies acquired in your MSc programme, electives, extra-curricular activities or other).

Optionally, describe whether you have some personal learning ambitions which you explicitly want to address in this project, on top of the learning objectives of the Graduation Project itself. You might think of e.g. acquiring in depth knowledge on a specific subject, broadening your competencies or experimenting with a specific tool or methodology. Personal learning ambitions are limited to a maximum number of five. (200 words max)

Personal Motivation:
As someone deeply passionate about sustainability and business innovation, I find the intersection of these two fields to be incredibly fascinating and crucial in today's world. I believe that the current focus of Sustainability initiatives is mostly driven by an environmental and social perspective but not from a business one. My main motivation for the thesis is exploring how sustainability can become more viable so that more and more businesses are motivated to integrate sustainability into their core value proposition.

Personal Learning Goals:

1. Understand the functioning of Businesses and Business Models, which would help me in my career ambition of starting in Strategy Consulting
2. Acquire in-depth knowledge of strategic design principles and methodologies and identify the Strategic Values of Design in Business Context.
4. Learn and get accustomed to some statistical tools used for Quantitative Analysis.
5. Learn to Design effective frameworks using Strategic Design in Management Context.

Overall, my personal motivation and learning goals for this thesis proposal are driven by a genuine desire to contribute meaningfully to the field of sustainable business and to develop the skills and knowledge necessary to effect positive change in the business world through design.

Appendix 1: Important Terms & Definitions

Important Terms	Definitions
Business model (BM)	Business models are “simplified representations of the value proposition, value creation and delivery, and value capture elements and the interactions between these elements within an organisational unit.”
Sustainable Business Model (SBM)	Sustainable Business Models are “business models that incorporate pro-active multi-stakeholder management, the creation of monetary and non-monetary value for a broad range of stakeholders and hold a long-term perspective.”
Business Model Innovation (BMI)	Business model innovation is “the conceptualisation and implementation of new business models. This can comprise the development of entirely new business models, the diversification into additional business models, the acquisition of new business models, or the transformation from one business model to another. The transformation can affect the entire business model or individual or a combination of its value proposition, value creation and delivery, and value capture elements, the interrelations between the elements, and the value network.”
Sustainable Business Model Innovation (SBMI)	Sustainable business model innovation is “the conceptualisation and implementation of sustainable business models. This can comprise the development of entirely new business models, the diversification into additional business models, the acquisition of new business models, or the transformation from one business model to another.”

Table 1: Important Terms and Definitions (Geissdoerfer et al., 2018)

References

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