

**OPEN INNOVATION FOR SUSTAINABILITY:  
OPPORTUNITIES AND CHALLENGES FOR  
JAPANESE COMPANIES**

**Jyväskylä University School  
of Business and Economics**

**Master's Thesis**

**2024**

**Author: Akari Kitaura  
Subject: Corporate Environmental Management  
Supervisor: Bhavesh Sarna**



JYVÄSKYLÄN YLIOPISTO

## ABSTRACT

Author Akari Kitaura	
Title Open innovation for sustainability: opportunities and challenges for Japanese companies	
Subject Corporate Environmental Management	Type of work Master's thesis
Date 04/2024	Number of pages 71
Abstract <p>The sustainability issues we face today are very complex that no individual organization can solve them alone. Open innovation emerged as a potent strategy to address such societal challenges while also creating economic value, framework known as creating shared value (CSV). However, current literature lacks practical studies on factors that motivate and challenge the adoption of open innovation, as well as their connection between open innovation and CSV.</p> <p>The aim of this research is to uncover opportunities and challenges Japanese companies identify in open innovation, and how this approach leads to creating shared value. 16 semi-structured interviews with open innovation facilitators and Japanese firms were conducted to gain insights into how open innovation is perceived in Japanese business. A thematic analysis was conducted for this study.</p> <p>The findings revealed three major opportunities Japanese companies identify in open innovation: 1) infusion of new blood into the organization 2) acceleration of innovation process 3) attainment of trust and pride. Four common challenges were also identified: 1) lack of understanding by the person in charge 2) fear of failure 3) different speed among the involved parties 4) varying levels of awareness and enthusiasm towards sustainability challenges. The study indicates that these challenges are largely attributed to Japanese unique corporate culture. Identifying the areas for improvement would facilitate the adoption of open innovation in Japanese firms. Furthermore, the findings show that open innovation generates shared value by creating collaborative ecosystems, optimizing resource utilization, and enabling larger firms to tap into startups' fast innovation lifecycle. On the other hand, high prices for sustainable products are a major obstacle to creating shared value through open innovation. Therefore, the consideration of affordability would help to maximize the potential for businesses to create shared value.</p>	
Key words Corporate social responsibility, Creating Shared Value, Sustainable Innovation, Open innovation, Japan	
Place of storage Jyväskylä University Library	

## LIST OF TABLES AND FIGURES

Table 1. Overview of the interviewed experts (category1).....	29
Table 2. Overview of the interviewed companies (category2).....	30
Figure 1. Theoretical framework (Hermundsdottir & Aspelund, 2021).....	15
Figure 2. Closed Innovation model (Chesbrough, 2012). .....	17
Figure 3. Open Innovation model (Chesbrough, 2012).....	18
Figure 4. Summary for theoretical framework.....	23
Figure 5. Phases of thematic analysis .....	32

# Contents

1	INTRODUCTION .....	6
1.1	Research background .....	6
1.2	Research questions.....	7
1.3	Boundaries of the research setting .....	8
1.4	Contribution of this research.....	8
1.5	Structure of the thesis.....	9
2	LITERATURE REVIEW .....	10
2.1	Stakeholder Theory.....	10
2.2	Strategic approach to Corporate Social Responsibility .....	11
2.2.1	Corporate Social Responsibility .....	11
2.2.2	Creating Shared Value .....	12
2.2.3	The importance of Creating Shared Value.....	13
2.3	Sustainable Innovation.....	13
2.3.1	Defining Sustainable Innovation.....	14
2.3.2	Three forms of sustainable innovation .....	16
2.4	Open innovation paradigm .....	16
2.4.1	Closed innovation.....	16
2.4.2	Open innovation .....	17
2.4.3	Open innovation processes .....	18
2.5	Open innovation for sustainability .....	19
2.5.1	Sustainable Open Innovation.....	19
2.5.2	Its opportunities and challenges .....	20
2.5.3	Creating shared value through open innovation.....	22
2.6	Summary .....	23
3	BUSINESS IN JAPAN.....	25
3.1	A history of Japanese Innovation landscape.....	25
3.2	Japanese business practices .....	26
4	DATA AND METHODOLOGY .....	27
4.1	Qualitative research.....	27
4.2	Data collection .....	28
4.2.1	Ethical challenges .....	30
4.3	Data analysis.....	31
5	FINDINGS.....	34
5.1	Japanese companies' perception of open innovation .....	34
5.1.1	Current concerns surrounding sustainability .....	34
5.1.2	Current attitudes surrounding open innovation .....	37
5.1.3	Opportunities .....	41
5.1.4	Challenges.....	44
5.2	Creating shared value .....	50
5.2.1	How open innovation adds value to business and society ...	50
6	DISCUSSION .....	54

6.1	Summary of the research results .....	54
6.2	Discussion and contributions .....	55
6.3	Limitations of the study .....	59
6.4	Suggestions for future study .....	59
7	CONCLUSION .....	61
	REFERENCES.....	62
	APPENDICES.....	69
	Appendix I . (1) Interview questions with experts.....	69
	Appendix I . (2) Interview questions with firms.....	70
	Appendix II . Confidentiality Agreement.....	71

# 1 INTRODUCTION

The issues we face are so big and the targets are so challenging that we cannot do it alone so there is a certain humility and a recognition that we need to invite other people in. When you look at any issue, such as food or water scarcity, it is very clear that no individual institution, government or company can provide the solution.

- Paul Polman, Former CEO of Unilever (Confino, 2012)

## 1.1 Research background

In recent years, business has been perceived as a major contributor to environmental, social, and economic issues. Firms focused on delivering profits for shareholders and encouraging consumers to buy more products (Porter & Kramer, 2011). However, with increasing concerns regarding excessive resource consumption, environmental degradation and social inequality, there is a pressing call for businesses to embrace sustainability (Adams et al., 2016). Consequently, there has been a considerable interest in the role of innovation in facilitating this transformative journey for businesses (ibid.). Amid growing interest in sustainability initiatives, the concept of corporate social responsibility (CSR) has become a global phenomenon and grown in terms of meanings. As the global competition continues to intensify, CSR needed to add value not only to society but also to corporate success (Carroll, 2008). So-called altruistic aspect of CSR was considered to have undermined the legitimacy of business, as charitable activities do not generate a return on investment for the business (Lantos, 2001). It is regarded that firms bear the responsibility of avoiding any actions that may harm society, yet have no obligation to participate in philanthropic activities (Lin-Hi, 2010). Therefore, the emergence of creating shared value (CSV) concept was a significant breakthrough in formulating ways to create economic value while addressing societal challenges simultaneously (Porter & Kramer, 2011). This movement has led to redefine the role of business in society.

Innovation plays a key role in creating shared value. By changing how we do business, it will open up entirely new pathways for innovation (Porter & Kramer, 2011). According to Porter and Kramer (2011), for instance, food companies that previously prioritized taste and quantity to stimulate more consumption, are now shifting their focus to enhance nutrition. In so-called sustainable innovation, a firm intentionally makes changes to its philosophy and values in addition to its products, processes, or practices with an aim of generating and realizing social and environmental value alongside economic benefits (Adams et al., 2016).

There are two approaches towards innovation: closed innovation and open innovation. Traditionally, firms have focused on internal capabilities to de-

velop products and services, a method commonly referred to as closed innovation. However, as stated by Paul Polman, a former CEO of Unilever, the issues we face today are so big that we cannot tackle them alone. These sustainability challenges encompass climate change, water scarcity, pollution, loss of biodiversity, poverty and many more, all of which are complicated and often require a diverse range of knowledge and resources for effective solutions. Therefore, cocreating with a wide range of external stakeholders becomes essential to address such sustainability issues (Pfitzer et al., 2013). These stakeholders may include governments, research institutes, universities, consumers, and even competitors. This collaborative approach is known as open innovation, where firms use both internal and external ideas and paths to market to advance their innovation (Chesbrough, 2012). A sense of urgency, especially evident during the COVID-19 pandemic, has been a major driver to fuel open innovation (McGahan et al., 2021). Consequently, more and more firms are turning to open innovation approach to address grand sustainability challenges (ibid.). Moreover, companies are increasingly acknowledging the opportunities for enhancing profitability in developing new or altering existing business models, products and services to address these issues (Alberti & Varon Garrido, 2017). This is what we recently call sustainable open innovation, where the principle of open innovation is applied to improve sustainability. As a result, open innovation plays a major role in reuniting business and society back together and creates win-win strategies, leading to creating shared value. However, as many studies have focused on open innovation and sustainability independently, quite little is known about the relationship between open innovation and CSV, and how they are perceived by practitioners.

This thesis aims to fulfill the identified research gap by investigating the relationship between open innovation and CSV, along with perceptions surrounding these concepts. A better understanding of the relationship will provide insights into how collaborative innovation can be utilized to address sustainability challenges while also generating economic value. Moreover, identifying its opportunities and challenges will guide businesses to effectively leverage open innovation and identify areas for improvement.

## 1.2 Research questions

Open innovation can hold significant influence over the companies' triple bottom line, in terms of their economic performance along with their social and environmental impact (Camilleri et al., 2023). This study sheds light on the perceptions of Japanese businesses on open innovation and its role for creating shared value, i.e., creating economic value in a way that also creates value for society by addressing societal challenges. There are two research questions this study aims to answer. First, what opportunities and challenges do Japanese companies identify in the open innovation approach? Second, how do Japanese companies perceive

open innovation as a means for creating shared value? To answer these two questions, I first interview professionals who support open innovation process for Japanese companies. This will provide a deeper understanding of the current open innovation landscape, including its opportunities and common challenges faced by Japanese companies. I also interview companies including Japanese startups and large firms to get insights from people directly involved in innovation processes. It is important to note that this study looks at the interviewees from company side as a business entity not an individual. Additionally, this study does not specify a particular industry to see a bigger picture and patterns. Therefore, the following two questions are formulated:

1. What opportunities and challenges do Japanese companies perceive in open innovation?
2. How do Japanese firms perceive the role of open innovation for creating shared value?

By clarifying the opportunities and challenges of using open innovation approach, it helps to facilitate the adoption of open innovation practices (Sağ et al., 2016), in this case, within Japanese companies. Additionally, it is crucial to study the relationship between open innovation and shared value, as there is a noticeable gap in academia (Camilleri et al., 2023). Hence, this study serves to address this knowledge gap to advance understanding in this field.

### **1.3 Boundaries of the research setting**

The principle of this study is to understand Japanese companies' perceptions of open innovation to create shared value. The research study is limited to Japanese markets, where closed innovation remains widely utilized to this day (Chesbrough, 2012). Although Japan has built a strong reputation for providing technological innovation in the past decades, there is an growing awareness that Japanese companies need to open up innovation processes to remain competitive in global markets (Ikeda et al., 2016). This trend is attributed to various factors, including shorter product life cycles and the increasing complexity of sustainability challenges we encounter, which makes it nearly impossible to develop innovative solutions all internally. Additionally, as Japanese business culture is unique to Japan, outcomes may vary depending on the case country.

### **1.4 Contribution of this research**

Open innovation has gained significant recognition as a strategic approach to address sustainability challenges while also generating economic value for businesses. To search for new solutions and remain competitive in global markets,



Japanese companies see the massive potential in open innovation. However, current literature lacks a practical study on factors that motivate and challenge the adoption of open innovation that it is worthwhile to conduct research through interviews (Sağ et al., 2016). Therefore, one of the most important contributions of this research is to uncover new opportunities and challenges Japanese companies identify in open innovation approach. The findings not only enhance our understanding of the benefits and obstacles associated with open innovation, but also provide crucial insights to facilitate future collaborations in Japanese firms. Additionally, there is limited research on the relationship between open innovation and creating shared value, calling for more studies (Camilleri et al., 2023). This research contributes to the existing body of literature by shedding light on businesses' perceptions of how open innovation can add value to the business as well as to the society. This helps in further identifying the link between open innovation and CSV, which is essential to address both managerial and policy-related issues (Kimpimäki et al., 2022).

## **1.5 Structure of the thesis**

This thesis is composed of seven chapters. The first chapter is the introduction, and the remaining six chapters are as follows: Chapter two illustrates the existent study by bringing focus on the relationship between open innovation and CSV. Chapter three explains Japan's innovation history and its unique corporate culture to get insights into its business practices. This is followed by chapter four that explains data and methodology used for this research, including qualitative research, data collection, ethical challenges, and data analysis. Chapter five then illustrates the findings from the collected data. Finally, the discussion and conclusion chapters are presented, elaborating on the meaning of the findings, and providing limitations of this thesis and suggestions for future research.

## 2 LITERATURE REVIEW

There is currently limited research on the relationship between open innovation and sustainability. Although a significant body of research was conducted independently, their interconnectedness remains underdeveloped in the extant literature (Bogers et al., 2020; Jesus & Jugend, 2021; Kimpimäki et al., 2022). Even fewer study the nexus of open innovation and shared value (Camilleri et al., 2023). Thus, this literature review addresses a research gap on this subject. Although it is complex to construct their interconnectedness due to lack of research in this field, it is worth researching as the importance of open innovation has been gaining significant attentions to solve the world's pressing issues such as climate change. This literature review begins with introducing a stakeholder theory as a framework for this study. It then examines evolution of CSR definitions from a historical viewpoint and discusses why CSV is essential in today's business. Following this, sustainable innovation is explained by breaking down its concept. The review then examines open innovation paradigm and introduces the concept of sustainable open innovation, including its opportunities, challenges, and its role in creating shared value. Finally, there is a summary of theoretical frameworks to clarify what sustainable open innovation entails.

### 2.1 Stakeholder Theory

This section introduces a stakeholder theory that guides the research. Stakeholder theory is one of the most popular theories utilized in CSR related research. A stakeholder is often defined as "any identifiable group or individual who can affect the achievement of an organization's objectives or who is affected by the achievement of an organization's objectives" (Freeman & Reed, 1983, p.91). Stakeholder theory aims at satisfying and creating value for all stakeholders, not exclusively shareholders (Freeman, 2010). In closed innovation, as companies rely only on their own research and development (R&D) capabilities, there was no presence of multiple and external stakeholders in innovation processes. However, as open innovation involves various stakeholders, it is crucial to consider not just shareholders, but also other external collaborators in the decision-making processes. Thus, the integration of stakeholder theory into open innovation study could enhance our comprehension of the relationship between organizations and their stakeholders engaged in the open innovation process (Grama-Vigouroux et al., 2020).

## 2.2 Strategic approach to Corporate Social Responsibility

While CSR has been a prevailing concept in business, it has also caused a lot of controversies. Such include whether private companies have the responsibility for engaging in charity. With a growing call for strategic CSR, the concept of CSV has emerged to reunite business success with social progress (Porter & Kramer, 2011). However, due to the lack of conceptualization, the difference between CSR and CSV remains ambiguous (Yang, 2020). Thus, this chapter traces the evolution of CSR and explores the expansion of its definitions over half a century. It then presents the newly emerged concept of CSV and discusses why this concept has gained prominence among academics and management practitioners.

### 2.2.1 Corporate Social Responsibility

The concept of the CSR has evolved since 1950s, which marks the modern era regarding CSR definitions (Carroll, 1999). *Social Responsibilities of the Businessman*, the Bowen's (1953) publication is said to be the origin of the concept of CSR and its literature. Until 1960s, philanthropy remained the most prominent character in CSR practices (Carroll, 2008). It was in the early 1970s that the definition of CSR started to revolve around a corporation's profitability. Johnson (1971, cited in Carroll, 1999, p.274) analysed a variety of views on CSR, presenting one view as "social responsibility states that businesses carry out social programs to add profits to their organization". This clearly regards CSR as an addition to a corporation's profit. Carroll's (1979) CSR definition also included an economic responsibility, proposing that "the social responsibility of business encompasses the economic, legal, ethical, and discretionary expectations that society has of organizations at a given point in time" (p.500). Lantos (2001) then classified CSR into three different types:

1. Ethical CSR: morally obligatory and extends beyond the fulfilment of a corporation's economic and legal duties, encompassing its ethical responsibilities to prevent any harm even in situations where it may not seem to benefit the business.
2. Altruistic CSR: promoting the welfare of various societal stakeholders, even if it entails a sacrifice in a portion of the business's profitability.
3. Strategic CSR: serving society to accomplish strategic business objectives. They do this not only out of generosity, but also because they consider it financially advantageous, thereby fulfilling their fiduciary responsibilities to shareholders.

While ethical CSR is regarded as mandatory, the validity of altruistic CSR is questioned, given that its negative impact on a corporation's profits can result in a violation of shareholder's rights, considered to be not a legitimate corporate

activity (Lantos, 2002). As described by Lin-Hi (2010), for instance, no amount of generous donation to an orphanage can offset any form of child labour, and good deeds create opportunities for the misuse of corporate responsibility. Such corporate philanthropic activities include donations and charities that do not relate to the core business model, and are often used for reputation building (Khurshid & Snell, 2022). Thus, failure to integrate social and environmental initiatives into corporate strategies has resulted in CSR being perceived as a mere “add-on” luxury affordable only for successful businesses or a form of insurance for damage mitigation (Freeman & Mcvea, 2001). As the legitimacy of business is being questioned with the perception that business thrives at the expense of society, there arose a growing necessity to establish a framework that could guide endeavours to reunite business and society back together (Porter & Kramer, 2011).

### 2.2.2 Creating Shared Value

To develop a new way to achieve economic success, Porter and Kramer (2011) introduced the concept of CSV in 2011, which is defined as “policies and operating practices that enhance the competitiveness of a company while simultaneously advancing the economic and social conditions in the communities in which it operates” (p.66). According to Porter and Kramer (2011), there are three approaches to create shared value: (1) reconceiving products and markets (2) redefining productivity in the value chain (3) enabling local cluster development. This idea caused a major change in business strategy thinking, as it shows that business can tackle global challenges, not as a charity but through its business activities while also pursuing profitability (Porter, 2021).

Despite its popularity among business scholars and practitioners (Alberti & Belfanti, 2019), CSV has also not been free from criticisms. For example, Crane et al. (2014) criticised it on the following four points. First, they contend that the concept is not original, pointing out its similarity to existing concepts such as CSR, stakeholder theory, and social innovation. Second, they assert that CSV overlooks the tensions between social and economic objectives, failing to provide guidance for numerous scenarios in which these outcomes may diverge among stakeholders. Third, they emphasize that CSV overlooks complexities associated with business compliance and fails to address systemic problems. Lastly, they claim that CSV presents a shallow view of the corporation’s societal role, overlooking the fundamental issues underlying the legitimacy of capitalism crisis.

Porter and Kramer (2011) acknowledge that CSV is not panacea, stating that “not all societal problems can be solved through shared value creation” (p. 77). Menghwar and Daood (2021) clarified these ambiguities from a systematic review, proposing that CSV is an incremental addition to the established body of literature, rather than a groundbreaking concept. Furthermore, they argue that although CSV does not replace traditional concept centred on value creation and social responsibility, it instead offers a strategic framework that incorporates societal issues into corporate strategy. Thereby, Menghwar and Daood (2021) defines CSV as “the strategic process through which corporations can solve a social

problem which is aligned to their value chain while pursuing economic profits” (p.8).

### 2.2.3 The importance of Creating Shared Value

CSV enables firms to go beyond current CSR approaches, and utilize their resources and expertise to reconnect economic success and societal benefits, which had been lost in business (Porter and Kramer, 2011). Although CSR and CSV have the same foundation, the major difference lies in the fact that CSR focuses on responsibility, while CSV emphasizes generating value together (Purba, 2020). The altruistic CSR mentioned in 2.2.1. (i.e., traditional CSR) is not a sustainable way to address social and environmental challenges, because companies spend their portion of profits in charitable activities, which does not create economic value (Khurshid & Snell, 2022). On the contrary, CSV is regarded as a self-sustaining way to solve social issues because it does not rely on private or governmental financial support (Porter & Kramer, 2006).

Porter and Kramer (2011) illustrates this difference with an example of fair trade, a practice that increases incomes of impoverished farmers by offering higher prices for their produce. In contrast, shared value places its emphasis on enhancing farmer’s efficiency, crop yields and product quality, ultimately generating substantially increased revenues for both the farmers and purchasing companies. As a result, Porter and Kramer (2011) highlight that shared value investment increased cocoa farmers’ income by more than 300%, while fair trade resulted in 10% to 20% increase in cocoa farmers’ income.

According to Porter and Kramer (2006), “strategic CSR also unlocks shared value by investing in social aspects of context that strengthen company competitiveness” (p.89). Khurshid and Snell's (2022) find that strategic CSR has a supporting role in CSV activities, explaining it as “a means of leveraging the firm’s expertise to empower and build the capabilities of stakeholders, who are thereby better equipped to contribute to and/or benefit from the CSV activities of the firm” (p.352). Therefore, companies need to integrate social concerns into the core business model to create shared value. The key to achieve this is innovation, particularly through open approach (Roszkowska-Menkes, 2018), which will be explored in the following.

## 2.3 Sustainable Innovation

Today, innovation is widely recognized as the sustainable engine for the growth and survival of a firm (Munro, 2020) and plays a key role in creating economic value and social value simultaneously, known as CSV (Porter & Kramer, 2011). Given that sustainable innovation encompasses three dimensions: economic, environmental, and social, it is crucial to examine this domain in the context of

shared value. Hence, this chapter explores the essence of sustainable innovation and how it relates to shared value creation.

### 2.3.1 Defining Sustainable Innovation

Traditionally, the introduction of technological and industrial innovations has been identified as a primary contributor to the depletion of natural resources (Bigliardi & Filippelli, 2022). Today, however, innovation is seen as a major driver for advancing sustainability. The sustainability challenges are considered to present substantial potential for innovation, which can also lead to new business opportunities (Lippolis et al., 2023). The importance of sustainability in innovation activities has been on the rise, and researchers and practitioners are increasingly focusing on understanding the interplay between sustainability and innovation (Cillo et al., 2019). Following this, a multitude of terms have been introduced in this field.

#### *Environmental pillar*

The first description of this field focuses on environmental dimensions. The terms include such as eco-innovations, eco-friendly innovations, sustainability-driven innovations, sustainability-oriented and many others, all of which indicate innovations with an emphasis on environmental sustainability (Varadarajan, 2017). Although sustainability is an overarching term that also includes both environmental and social pillars, innovation for sustainability is often simplified to focus solely on environmental improvements (Klewitz & Hansen, 2014), and lacks social dimensions of sustainable development (Afeltra et al., 2021). Several researchers also point out that environmental dimension has gained significant interests compared to social one.

#### *Social pillar*

The consideration of social dimensions has only recently emerged in innovation research (Cajaiba-Santana, 2014). Although the phenomenon of social innovation has been experiencing rapid growth, scholars have not reached a consensus on the definitions of social innovation. There are many definitions introduced, but most agree that its essence is to seek social change. The most frequently cited definitions of social innovation comes from Phills et al. (2008): “a novel solution to a social problem that is more effective, efficient, sustainable, or just than existing solutions and for which the value created accrues primarily to society as a whole rather than private individuals” (p.39). Grameen bank is a famous example of this topic. Grameen bank developed micro-finance that provides small loans to those in low income that contributed to poverty alleviation.

The lack of standardized definition may be because of the term “social”, as social dimension is broad and hard to narrow down (Oeij et al., 2019). In addition, Howaldt and Schwarz (2010) state that the term “social” is not distinguished substantially from technical innovation in the analytical sense, as “technical innovations can contribute to solving social needs and meeting social challenges” (p.26). This is true as social change can be derived from technological development and it can also address environmental issues such as climate change.

### *Sustainable innovation*

Sustainable innovation has a broader definition, which includes three dimensions: environmental, social, and economic ones. Boons et al. (2013) defines sustainable innovation as “innovation that improves sustainability performance, where such performance includes ecological, economic, and social criteria” (p.2). As sustainable innovation includes both environmental and social aspects, this concept is holistic and different terms introduced prior could fall under this category.

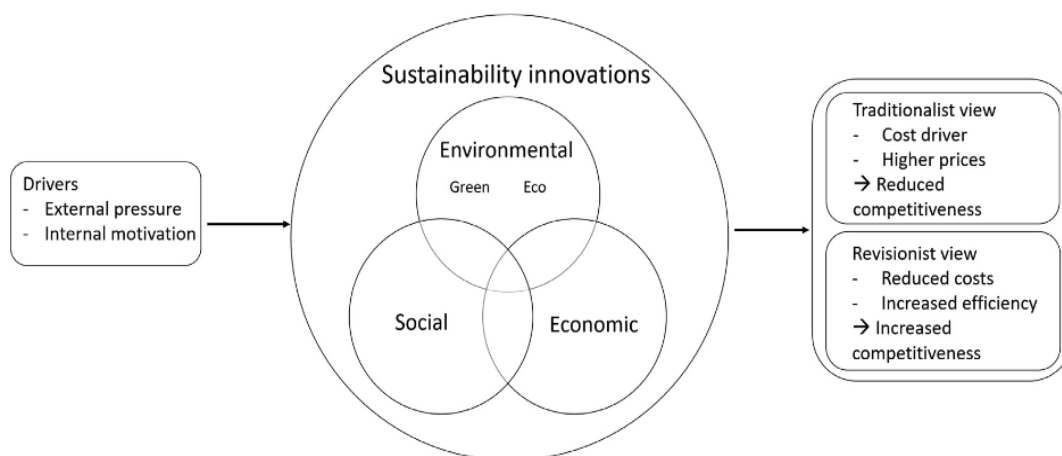


Figure 1. Theoretical framework (Hermundsdottir & Aspelund, 2021).

To understand the concept of sustainable innovation, this thesis uses the theoretical framework introduced by Hermundsdottir and Aspelund's (2021). They presented two views of how sustainability innovations and firm competitiveness are related (See figure 1). First, there are mainly two drivers for adopting sustainable innovation, which are either external pressure from stakeholders or internal motivation to enhance competitiveness. These sustainability innovations encompass three dimensions: environmental, social, and economic. Following this, the traditionalist view regards sustainable innovation as cost drivers and increased price, resulting in reduced competitiveness. In contrast, the revisionist view sees sustainable innovation as a driver for creating win-win situations that enhance the competitiveness of firms. Their study supports the revisionist view, concluding

that a significant majority of the studies they reviewed observed a positive relationship between sustainable innovations and the competitiveness of firms. Rauter et al. (2019) also found positive correlation between economic performance and sustainability innovation performance, suggesting that it is possible to concurrently pursue both economic and sustainability innovation goals. Therefore, it can be interpreted that sustainable innovation can create win-win situations, leading to creating shared value.

### 2.3.2 Three forms of sustainable innovation

Bigliardi et al. (2021, as cited in Bigliardi & Filippelli, 2022) have categorized sustainable innovation into three distinct forms: technological, organizational, and social. The technological form involves creating new products, processes, or services, or modifying existing ones to reduce their environmental impacts. Therefore, those developed through technological sustainable innovation have lower environmental impact compared to existing ones.

The organizational form of innovation entails changing current company practices and introducing new ones to mitigate environmental risks associated with company activities, pollution, or the depletion of non-renewable resources (Bigliardi et al., 2021, as cited in Bigliardi & Filippelli, 2022). The aim is to integrate social and environmental goals into business operations. This type of innovation requires organizational transformation, where sustainability is embedded in the firm culture (Adams et al., 2016).

Finally, the social form focuses on developing new behavioural models at both the entire company and individual levels to promote more sustainable lifestyles (Bigliardi et al., 2021, as cited in Bigliardi & Filippelli, 2022). This form of innovation requires system building by extending beyond the firm's boundaries and stakeholders to achieve institutional change (Adams et al., 2016)

## 2.4 Open innovation paradigm

### 2.4.1 Closed innovation

Traditionally, firms have focused on closed innovation, which embodies secretive business models that depend on the internal capabilities and resources of the company, keeping knowledges confined within their research and development (R&D) department (Camilleri et al., 2023). Under this old model, firms followed the philosophy that "*successful innovation requires control*" (Chesbrough, 2003, p.36). A figure 2 illustrates the closed innovation model. In closed innovation, research projects originate from a firm's science and technology foundation, advancing through the development phase, with only a few successful ones making



their way to the market (Chesbrough, 2012). Thus, firms may overlook business opportunities in this model.

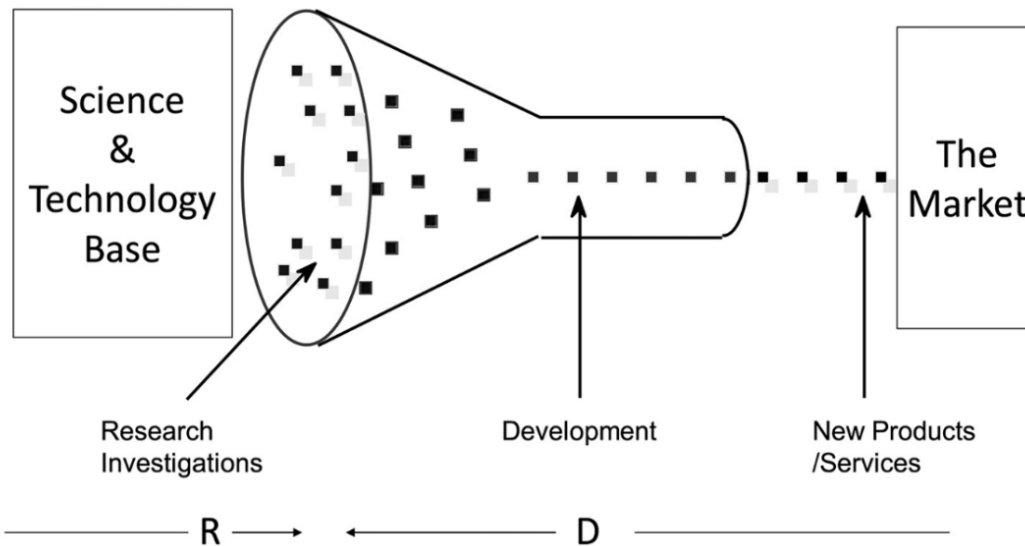


Figure 2. Closed Innovation model (Chesbrough, 2012).

#### 2.4.2 Open innovation

The term of open innovation was coined by Chesbrough (2003) back in 2003. As the complexity of products and services are growing, coupled with shorter life cycles and rapidly evolving market demands, new management practices are needed to nurture innovation and maintain a firm's competitive advantage (Rauter et al., 2019). That led to a new paradigm shift from closed innovation to open innovation. One of the most common definitions of open innovation is the one introduced by Chesbrough and Bogers (2014). They define it as "a distributed innovation process based on purposively managed knowledge flows across organizational boundaries, using pecuniary and non-pecuniary mechanisms in line with the organization's business model" (p.12). Pecuniary mechanisms (i.e., monetary incentives) can serve as a motivating factor in innovation activities (Bogers et al., 2020). On the other hand, non-pecuniary mechanisms such as revealing internal resources instead of selling them, may not yield immediate financial returns, but it aims for indirect benefits to the firm (Dahlander & Gann, 2010).

Figure 3 illustrates open innovation model. Although closed innovation process can only exit in one way, open innovation model allows projects to enter or exit at different stages, making their way to market in various ways (Chesbrough, 2012). In closed model, firms need to choose ideas that go to the market. On the contrary, by adopting open innovation approach, firms can seize numerous opportunities to bring initially unpromising ideas to the market, as

many of these opportunities fall outside their existing business scope or can be harnessed by integrating external technologies to realize their potential (Chesbrough, 2003). Therefore, companies are increasingly embracing open innovation approach today to speed up the innovation process, quickly meet customer demands and attain sustainable competitive advantage while also reducing the costs and risks associated with innovation (Sağ et al., 2016).

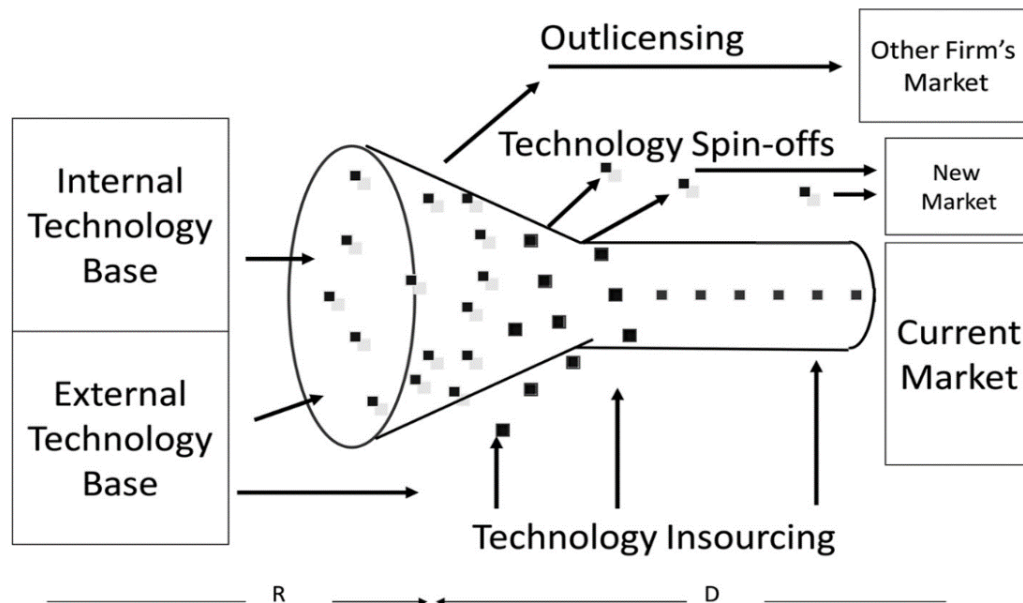


Figure 3. Open Innovation model (Chesbrough, 2012).

### 2.4.3 Open innovation processes

Open innovation research is typically classified into three core processes: (1) The outside-in process (2) The inside-out process (3) The coupled process.

#### (1) The outside-in process (or inbound OI)

The outside-in process enriches the firm's own knowledge base through incorporating suppliers, customers, and external knowledge sources to enhance a company's innovativeness (Gassmann & Enkel, 2004). Much attention was paid to this aspect of open innovation from both academics and practitioners (Chesbrough, 2017). The examples include such as in-licensing and buying patents (Gassmann & Enkel, 2004), and crowdsourcing which involves a large number of individuals beyond the firm's boundaries to find a solution to a problem (Cappa et al., 2019).

(2) The inside-out process (or outbound OI)

The inside-out process refers to the practice where a firm shares its unused and underutilized knowledge with external organizations, allowing them to leverage this knowledge in their businesses and business models (Chesbrough, 2017). It generates profits by selling intellectual property (IP), and amplifying technology through the transfer of ideas to the external environment (Gassmann & Enkel, 2004). Following Dahlander and Gann (2010), this process involves either selling ideas (e.g., out-licensing) or revealing internal sources (e.g., selectively disclose certain aspects of their technologies to elicit collaboration).

(3) The coupled process

The coupled process refers to combining the outside-in with inside-out processes by co-operating with other partners, where mutual exchange is vital for success (Gassmann & Enkel, 2004). The examples include such as strategic alliances, joint ventures, and consortia (Chesbrough & Bogers, 2014).

## 2.5 Open innovation for sustainability

Sustainability is a must in today's business. However, integrating sustainable practices is a complex task that has various restrictive barriers related to factors such as industry type or company size (Bigliardi & Filippelli, 2022). Thus, open innovation plays a key role in supporting such sustainability transition (ibid.). Moreover, co-creating with external stakeholders such as governments, universities, NGOs, and other firms and leveraging their capabilities are important elements of creating shared value (Pfitzer et al., 2013), yet existing literature lacks addressing the relationship between open innovation and shared value. This chapter explores sustainable open innovation including its opportunities and challenges, and how it can contribute to creating shared value.

### 2.5.1 Sustainable Open Innovation

Sustainable open innovation is a quite new concept. Since 2003, research on open innovation has consistently discussed the interplay between innovation and sustainability, particularly when involving its environmental dimension (Bigliardi & Filippelli, 2022). It requires many actors to solve complex challenges like climate change. Thus, open innovation provides a framework for coordinating such collaborative initiatives (Kimpimäki et al., 2022). There are numerous terms that combined two aspects, such as sustainability-oriented innovation, sustainability-driven innovation, open-eco innovation and open environmental innovation. As combination of open innovation and sustainability, the concept of sustainable open innovation (SOI) was born by Bogers et al. (2020). Their definitions link the traditionally known definition of open innovation introduced by Chesbrough

and Bogers's (2014), with the Brundtland's (1987) definition of sustainable development. Thus, SOI is defined as follows:

A distributed innovation process which is based on purposively managed knowledge flows across organizational boundaries, using pecuniary and non-pecuniary mechanisms in line with the organization's business model, thereby contributing to development that meets the needs of the present without compromising the ability of future generations to meet their own needs. (p.1507)

In the context of sustainability challenges, non-pecuniary mechanisms (i.e., purpose) often serve as the primary initial motivators, ultimately driving open innovation activities (Bogers et al., 2020).

Today, innovation is vital for the survival and growth of the company. However, innovation does not automatically contribute to societal progress, nor improve quality of life, as new technology is likely to create new needs, which may increase ecological price we have to pay (e.g., space tourism) (Vollenbroek, 2002). Thus, traditional forms of innovation may produce profitable products, but can also cause other issues. This brought more attentions to sustainable innovation where firms generate social and environmental benefits while simultaneously creating economic value. Furthermore, collaboration is becoming increasingly crucial for businesses to tackle complex global challenges, especially when these challenges are vast, complex and urgent (McGahan et al., 2021). This is because addressing such challenges requires diverse knowledge and resources compared to traditional innovation, where internal knowledge is typically deemed sufficient (Bigliardi & Filippelli, 2022). It was especially evident during the COVID-19 pandemic, as numerous businesses including competitors came together and fueled open innovation to benefit their communities (Camilleri et al., 2023). Hence, open innovation has gained significant popularity for organizing such endeavours.

## 2.5.2 Its opportunities and challenges

### *Opportunities*

Open innovation can be an enabler to facilitate sustainable transition by generating new knowledge through exchange of resources between parties (Bigliardi & Filippelli, 2022). Lippolis et al. (2023) claim that its dynamics helps companies to discover not just innovative but also socially and environmentally responsible solutions and initiatives. Moreover, they argue that open innovation promotes responsible actions by expanding a firm's knowledge pool and broadening their perspectives through constant dialogue and engagement with a wide range of stakeholders. Open innovation regards spillovers as an outcome of the firm's business model, viewing them not as a cost but as an opportunity to broaden the

business model or transfer a technology to a distinct business model located outside the firm (Chesbrough, 2012). For instance, in open innovation model, IP can turn into new assets that generate additional revenues for the firm (ibid.). Thus, open innovation can contribute to the firm revenue by making various ways to reach the markets.

The collaborations between startups and larger companies are gaining momentum. Researchers have no consensus on startup definition, but startups are commonly known for a newly established firm. One of the most popular definitions was formed by Steve Blank as “a temporary organization designed to search for a repeatable and scalable business model” (Blank, 2013, p.67). The major differences between startups and larger firms lie in their resources, which indicate that benefits startups obtain through open innovation vary from those experienced by larger firms (Spithoven et al., 2013). As described by Weiblen and Chesbrough (2015), “each side has what the other one lacks. The corporation has resources, scale, power, and the routines needed to run a proven business model efficiently. The startup has none of those, but typically has promising ideas, organizational agility, the willingness to take risk, and aspirations of rapid growth” (p.66). As startups have limited financial and human resources, it could impede the development of new innovation processes (Spender et al., 2017). Thus, these differences in resources including finances, R&D facilities, and distribution network, can serve to complement one another.

Through outbound open innovation, startups can develop and commercialize their promising technologies through e.g., licensing out their technology, acquisitions, or even corporate venturing with larger companies (Usman & Vanhaverbeke, 2017). This is also beneficial for large companies, as they can gain new technology and bring it to the market without investing time and efforts in costly R&D (ibid.). In contrast, inbound open innovation allows startups, constrained by their limited R&D capabilities to quickly access to technologies developed by other firms (Lee et al., 2010), while large companies, on the other hand, can gain financial and non-financial advantages (e.g., discovery of its use in other related fields) by licensing out their unused technology (Usman & Vanhaverbeke, 2017). Therefore, while startups often have innovative idea to solve sustainability challenges, they often face resource constraints. Open innovation enables them to complement what they are missing and bring promising ideas to the market.

### *Challenges*

As open innovation involves many stakeholders, its implementation can be challenging. Sandberg and Aarikka-Stenroos (2014) define innovation barrier as “an issue that either prevents or hampers innovative activities in the firm” (p.1294). Madanaguli et al. (2023) have identified five types of risks associated with open innovation, which are explained in the following. The first typology is data-related risks, which can include data privacy risks (e.g., leakage of private information), data manipulation, and other technical vulnerabilities (e.g., hacking).

The second typology is people-level risks that are caused by human interaction in the innovation process. For instance, “not-invented-here syndrome (NIH)” is one of the largest barriers in innovation management, which favors internal innovation and impedes effective knowledge exchange (Antons et al., 2017). Another negative attitude towards outbound open innovation is called “not-sold-here (NSH)”, which is defined as “protective attitudes toward external knowledge exploitation” (Lichtenthaler et al., 2010, p.1055). This negative attitude may be caused of the fear of losing its competitive advantage by sharing “crown jewel” technologies with its competitors (e.g., technology licensing) (Kline, 2003).

The third type is firm-level risks that arise when firms lack necessary resources and skills (e.g., stakeholder engagement skills), as well as managerial capabilities (e.g., top management support) to engage in open innovation.

The fourth type is categorized as outcome risks which are related to market failures and intellectual property. Open innovation especially with customers, is often effective in enhancing existing products and services, but the potential for stakeholders’ contribution to radical innovation remains largely untapped. In addition, IP needs to be properly managed to mitigate its risks.

Lastly, they acknowledged the presence of additional risks, such as lack of favourable business environment (e.g., insufficient policy support) and free-riding problems alongside identity and fit related concerns, for instance, where conflicts in firm’s identity may arise during the transition to an open approach. Regarding free-riding problem, West and Gallagher (2006) state that firms may start underinvesting in internal innovation, for example, basic research that is often highly risky. They state a paradox, “why would firms spend money on R&D efforts if the results of these efforts are available to rival firms?” (p.319).

In addition to these above-mentioned barriers, sustainable open innovation can introduce unique challenges compared to traditional open innovation approach. Integrating sustainability into innovation adds complexity due to the involvement of various stakeholders and increases ambiguity, given that many of these stakeholders may have conflicting demands (Hall & Vredenburg, 2003). Thus, these aspects should also be considered when engaging in sustainable open innovation.

### **2.5.3 Creating shared value through open innovation**

Shared value requires novel and heightened forms of collaboration (Porter & Kramer, 2011). Porter & Kramer (2011) emphasize that firms are more likely to achieve success when they utilize expertise, skills and resources that transcend the boundaries between for-profit and non-profit organizations, and private and public sectors, or even by involving major competitors. In this regard, open innovation is a highly effective strategy for pursuing win-win strategies, as it broadens their search for knowledge, fosters sustainable innovation and meets the demands of stakeholders efficiently (Gionfriddo and Piccaluga, 2023; Roszkowska-Menkes, 2018). In addition, by forming collaborative partnership with external

stakeholders, firms can also diversify their markets, leading to the creation of additional revenue sources (Camilleri et al., 2023). Therefore, open innovation is the key to addressing sustainability challenges, and enables firms to achieve CSV.

## 2.6 Summary

This chapter defined essential concepts and examined the relationship between open innovation and sustainability, and how they can create shared value. The key findings are as follows. The first one is the importance of strategic approach to CSR. CSR can be divided into three dimensions, and as the growing demand for strategic approach appeared, CSV provides a framework for guiding firms to create social value while simultaneously pursuing economic value (Porter & Kramer, 2011). It was also found that innovation plays a key role to shared value creation.

The second one is a lack of innovation research on the connection between open innovation and sustainability, especially shared value (Roszkowska-Menkes, 2018). One of the major reasons is due to its relatively new research field, Kimpimäki et al. (2022) suggesting it as “an emerging frontier in innovation management” in their title, addressing its research gap. In addition, previous scholars have introduced a variety of terms related to the relationship between sustainability and innovation as well as sustainability and open innovation, which many of them can be used interchangeably. The lack of holistic view is one of the major reasons for complexity in this field, and it was worthwhile to construct a theoretical framework summary to organize what sustainable open innovation consists of (See figure 4).

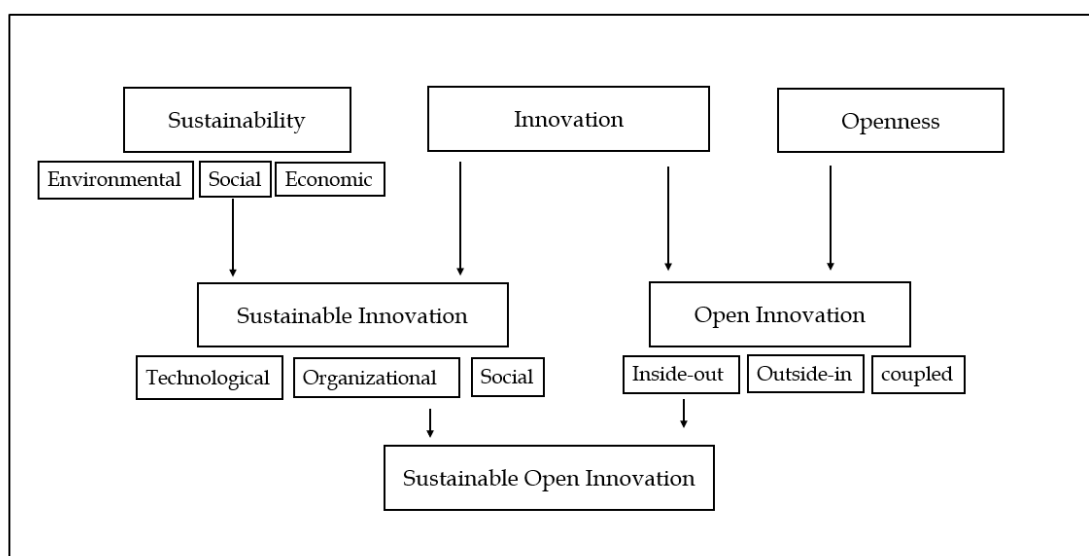


Figure 4. Summary for theoretical framework

Thirdly, given the complexity of sustainability challenges, firms face difficulty tackling them in isolation. Thus, there has been a growing need for collaborative efforts to effectively address these sustainability challenges. Open innovation serves as a framework for such collaborative endeavours and contributes to creating shared value by making various ways to reach the market. However, as this is relatively a new research field, there is a notable gap in existing literature regarding how firms understand and perceive open innovation approach to tackle such sustainability challenges including its opportunities and challenges. Without understanding their perceptions and current open innovation landscape, it is difficult to fully comprehend the potential of open innovation approach. Therefore, more research is needed to advance this promising field.



### 3 BUSINESS IN JAPAN

This study focuses on Japan, a country known for its inclination towards closed innovation. This chapter provides essential background knowledge to understand Japan's specific situations. First, it explains a history of Japanese innovation, tracing its path from being world's innovation powerhouse to its current position of lagging behind in global competition. Subsequently, it delves into unique Japanese corporate culture to provide context for understanding its innovation landscape.

#### 3.1 A history of Japanese Innovation landscape

Japan has been a key innovation player in the global competition. Particularly, the Japanese manufacturing sector had achieved remarkable competitiveness by the 1980s, positioning Japan as the leading producer in industries pivotal to twentieth-century capitalism, including motor vehicles, steel, semiconductors, and machine tools (Goto, 2000). In 1995, as many as 149 Japanese companies were listed on the Fortune Global 500 (Hong et al., 2017). However, the number of Japanese firms listed in the Global 500 has been consistently declining over the years. In 2014, only 57 Japanese companies made it on the list, a decline of more than 50 percent. This poses a question why Japanese businesses have fallen behind their global competitors compared to their position a few decades ago.

There are some factors that should be taken into account. According to Ikeda et al. (2016), while acknowledging the long-term significance of pursuing innovation, many Japanese business leaders remain stuck in the status quo. Consequently, organizations focus on conventional products or services that serve traditional customer segments, rather than adapting to evolving customer needs and the growing demand for more fulfilling customer experiences (Ibid.). Moreover, closed innovation has been long favoured in Japan and continues to be a popular approach (Chesbrough, 2012). Ikeda et al. (2016) point out that although many countries are effectively opening up innovation processes to external stakeholders, Japanese organizations seem entrenched in closed innovation paradigms. However, the situation is changing recently. There is a growing awareness that Japanese companies need to adopt open innovation approach to source new ideas, which can ultimately reignite the country's innovation leadership (Ikeda et al., 2016).

### 3.2 Japanese business practices

The past success was also supported by Japanese unique corporate practices, such as staff rotation within the firm, lifetime employment system, and the seniority system (Goto, 2000). Lifetime employment has been a common practice, particularly in large Japanese corporations. Traditionally in Japan, companies hire graduates immediately after university and provide them with in-house trainings (Haghirian, 2022). Even when new roles require acquiring new skills, firms train them in new areas themselves (ibid.). However, this lifetime employment system poses challenges for Japanese companies to hire mid-career specialists, as there is limited job mobility. Additionally, the conventional approach of allowing employees a few years to acquire the required expertise is too slow, given the rapid change in today's dynamic business environments.

The seniority principle has been often mentioned as a crucial factor in the success of Japanese companies (Lincoln, 1989). In this system, employees' promotions and compensation are primarily determined by their length of employment rather than individual performance (Pudelko, 2006). There are two problems highlighted by Woronoff (1992, as cited in Pudelko, 2006). First, top managers often reach their final career positions at an age of over 60 or even 70 years old. As a result, they have surpassed their most productive years and may not keep up with the latest trends and technologies. Second, the seniority-based promotion system tends to favor loyal, driven, and efficient followers rather than exceptional leaders. The absence of such leaders, who are both willing and capable of embarking on new paths and implementing significant reforms, can be seen as a major factor for the pervasive anxiety within Japanese businesses. In addition to these, there is a difficulty of integrating new hires within higher ranks into existing seniority system (Haghirian, 2022).

Job rotation is also not unusual in Japanese companies. Typically, during one's career, employees experience various jobs in different fields repeatedly, growing more into generalists rather than specialists. This is because, employees are not recruited for particular positions, and their assignment within the firm is determined based on the organization's needs (The Japan Institute of Labour, n.d.). However, as job requirements can evolve over time, there is often a mismatch between the required skills and existing skills, making it difficult to adapt specialized skills accordingly.

Lastly, individuals strive to avoid confrontations in Japanese business culture to save face and ensure smoother communication (Yamamoto & Lloyd, 2019). Therefore, consensus is deeply embedded into Japanese corporate culture, which values harmony and cooperation of various workers within the firm (Hirasaka et al., 2021). Consequently, the group leaders advocate for consensus decision-making to ensure that everyone is on the same page, fostering harmony within the team. While this has several benefits, consensus building can also slow down decision making processes.

## 4 DATA AND METHODOLOGY

This chapter presents empirical part of doing research. It first introduces qualitative research and explains reasons for choosing this method. Second, data collection criteria and the process of collecting it are explained. This is followed by describing interviewees who participated for this study. Third, it explains ethical challenges considered in this study. Lastly, the chapter concludes by explaining how the collected data from the interviews was analyzed.

### 4.1 Qualitative research

This study uses a qualitative research method to investigate the research questions. According to Yilmaz (2013), quantitative research aims to generalize research findings by utilizing numerical data, making it suitable to test a theory or hypothesis. In contrast, qualitative research is most appropriate for describing and understanding the phenomenon of interest by capturing and conveying participants' experiences in their own words through observation and interviews (Yilmaz, 2013). This allows us to find how they make sense of the world around them as well as their experiences (*ibid.*). It is also the predominant method employed in the body of scientific research within social sciences, including business research (Eriksson & Kovalainen, 2016). As the research topics try to understand open innovation related phenomena from the perspectives of participants, qualitative research was chosen for this study. Furthermore, the research design for this thesis is exploratory research. The exploratory research is appropriate when (1) the researcher knows little about the research problem and (2) it intends to discover new relationships, patterns or themes, not to test particular research hypotheses (Hair et al., 2015).

Qualitative data may include interviews, observations, textual materials, visual materials, and digital materials (Eriksson & Kovalainen, 2016). All of them have its own strengths and weaknesses, but interviews are the most popular way to collect qualitative data. Interviews can be conducted individually or in a group setting, namely focus group (DiCicco-Bloom & Crabtree, 2006). Individual interviews allow an interviewer to delve deeper into one's view (DiCicco-Bloom & Crabtree, 2006). On the other hand, focus group enables an interviewer to engage in exploratory discussions through interactions between participants and provides an efficient use of time, while it should be refrained when involving sensitive topics such as salary (Qu & Dumay, 2011). There are three forms of interviews: structured, unstructured, and semi-structured. A structured interview asks a set of pre-determined questions, while an unstructured interview does not have prearranged questions, letting it flow more like a daily conversation. A semi-structured interview lies in between structured and unstructured ones, and

it is the most commonly used approach in qualitative research (DiCicco-Bloom & Crabtree, 2006). In a semi-structured interview, interviewers can adjust the style, pace, and questions orders to elicit comprehensive responses from the interviewee (Qu & Dumay, 2011). Crucially, it also allows an interviewee to express themselves in their own terms and according to their thought process and language use. Hence, this approach is appropriate for researchers aiming to gain insights into how interviewees perceive the social world under investigation (Qu & Dumay, 2011).

Semi-structured interview was chosen for this research in the following reasons. First, the aim of this study is to get deep insights into how practitioners make sense of open innovation for solving sustainability challenges in current business world. Second, as I aimed to collect data from various organizations, ranging from startups to large established firms, semi-structured interview offers increased flexibility in questions while a set of questions also allowed comparisons between interviewees. Third, this research is exploratory in nature, seeking open-ended data. According to Eriksson and Kovalainen (2016), semi-structured interviews are suitable to study “what” and “how” questions. Therefore, it was a natural choice over other interview methods for this study. In addition, as all interviewees have different personalities and temperaments towards the research, having the freedom to ask more questions enabled to dig deeper into their thoughts when they were willing to share them. Having fixed questions would have prevented to get this opportunity to explore them.

## 4.2 Data collection

The objective of this study is to understand how Japanese businesses perceive open innovation for creating shared value. Hence, semi-structured interviews are the most suitable approach to collect data on this subject. To conduct semi-structured interviews, these two categories of interviewees are considered:

- 1) Open innovation experts (belonging to organizations that support open innovation and have first-hand experiences)
- 2) Businesses ranging from startups to larger firms (have experiences in open innovation and highlight sustainability on their website)

I decided to interview experts who have experiences in helping Japanese firms to succeed in open innovation process. Since they have been engaged in discussions with firms daily for successful open innovation, interviewing them was crucial to identify its opportunities and common challenges. Based on this requirement, professionals working as consultants and advisors in this field were chosen for the interview. Additionally, I decided to interview the second category to get insights from business sides. To get comprehensive understanding of their views, the interviewees were chosen from various fields of industries and company sizes including large Japanese companies and startups. There were two

criteria in the selection of the second category. First, their business needs to have experiences in open innovation. Second, their business is actively engaged in sustainability initiatives. As for large firms, interviewees were chosen from those working directly in open innovation or innovation related department. As for startups, interviewees were chosen from those in decision-making positions.

The next step was to get in touch with them for interviews. I contacted them via LinkedIn, emails, and phone. All in all, 16 interviews were conducted for this thesis. Three interviews were conducted face to face, but due to their location, the rest of the interviews took place in Zoom. The interviews were conducted between 1 December 2023 and 18 January 2024. All the interviews ranged from 17 minutes to 50 minutes and were directed by a set of preplanned questions. The first category of the interview focused on getting to know an interviewee by asking general questions related to their work. At the second stage, it attempted to identify what kind of opportunities and challenges they have experienced by engaging in open innovation processes. The third section then focused on finding out how each interviewee makes sense of the CSV concept and perceives open innovation as a means to achieve it. To ensure that each interviewee understand the CSV concept, the meaning was explained thoroughly during the interview. The list of preplanned questions is presented in Appendix I. The details of the interview demographics are shown in the tables below.

Table 1. Overview of the interviewed experts (category1)

Overview of the interviewed experts				
Participants	Industry	Position	Country of work	Type
Interviewee 1	Consulting	Innovation consultant	Japan	Face to face
Interviewee 2	Consulting	Senior consultant	Japan	Face to face
Interviewee 3	Consulting	Manager	Japan	Face to face
Interviewee 4	Community platformer	Manager	Japan	Zoom
Interviewee 5	Consulting	Manager	Finland	Zoom
Interviewee 6	Government Relations	Deputy head	Japan	Zoom
Interviewee 7	Consulting	Senior advisor	Finland	Zoom
Interviewee 8	Social organization	Senior advisor	Finland	Zoom
Interviewee 9	Open innovation platform	CEO	Japan	Zoom
Interviewee 10	Open innovation platform	Consultant	Japan	Zoom

*Note:* face to face interviews were conducted with these three interviewees as they were traveling to Finland for a startup event, which I volunteered for.

Table 2. Overview of the interviewed companies (category2)

Overview of the interviewed companies				
Participants	industry	position	Country of work	Type
Large firm A	Communication	Senior manager	America	Zoom
Large firm B	Conglomerate	Innovation lead	Japan	Zoom
Large firm C	Oil	Innovation specialist	Switzerland	Zoom
Startup D	Recycled paper	CEO	Japan	Zoom
Startup E	Online service	COO	Japan	Zoom
Startup F	AI	CEO	Finland	Zoom

Some interviewees requested to preview the question pattern beforehand to prepare for the interview, and the questions were sent to them. At the beginning of each interview, the interviewee got asked for verbal permission to record the interview. One interview was conducted in English and the rest of them were conducted in Japanese as both the participants and I are native Japanese speakers. The use of common language allows participants to express themselves freely without any language barrier, and reduced possibility of misconception (Welch & Piekkari, 2006). Moreover, using interviewees' native language is often regarded as an effective tool for building rapport and fostering a sense of connection (Welch & Piekkari, 2006). The interviews were recorded and transcribed, after which the data was analysed. After data analysis, the excerpts were translated from Japanese to English. AI can provide a second set of eyes, serving a supplementary means to ensure precision in research without necessitating extra time, resources, or money (Burger et al., 2023). Hence, to ensure the precision of translations, Open AI was also utilized to validate its accuracy.

#### 4.2.1 Ethical challenges

Given human interactions inherent in qualitative studies, it is crucial to address ethical challenges in research (Sanjari et al., 2014). Anonymity, confidentiality, and informed consent are three important factors that should be considered in qualitative research (ibid.). In business related research, it is especially important to inform that their participation is voluntary since they might feel obliged to join due to their position, for instance (Eriksson and Kovalainen, 2008). Moreover, all

the data should be stored in a manner that prevents any unauthorized access. Therefore, the following steps were taken to assure them. When contacting participants, the purpose of the interview was explained, and their anonymity were promised. Before the interview, confidentiality contract was shared with participants. They are informed that their participation is voluntary, and they have the freedom to deny answering questions and withdraw from the interview at any point. Additionally, confidentiality and anonymity were ensured again in the contract. Only I have access to the recordings of interviews, and they are used only for research purpose. The copy of the contract is presented in Appendix II.

### **4.3 Data analysis**

The goal of analysing qualitative data is to recognize, examine, compare, and interpret patterns and themes (Hair et al., 2015). It is an iterative process that involves continuously revisiting the data as new questions and connections emerge during analysis, and collecting additional data, thereby contributing to a more profound analysis (Hair et al., 2015). Among various qualitative data analysis methods, thematic analysis was chosen for this study. Thematic analysis offers accessible and systematic methods for deriving codes and themes from qualitative data (Clarke & Braun, 2017). Consequently, codes represent the smallest analytical units, capturing interesting aspects of the data that relates to the research question (ibid.). These codes serve as the foundation for themes, which are broader patterns of meaning grounded in a central organizing concept (ibid.). A theme may manifest as either semantic (surface meaning) or latent (underlying ideas and assumptions) (Ozuem et al., 2022). This study follows six-phased method described by Braun and Clarke (2006) as presented in Figure 5. Braun and Clarke (2006) also highlight that although the process seems linear, it is an iterative process that requires a constant moving back and forth throughout the phases and develops over time.

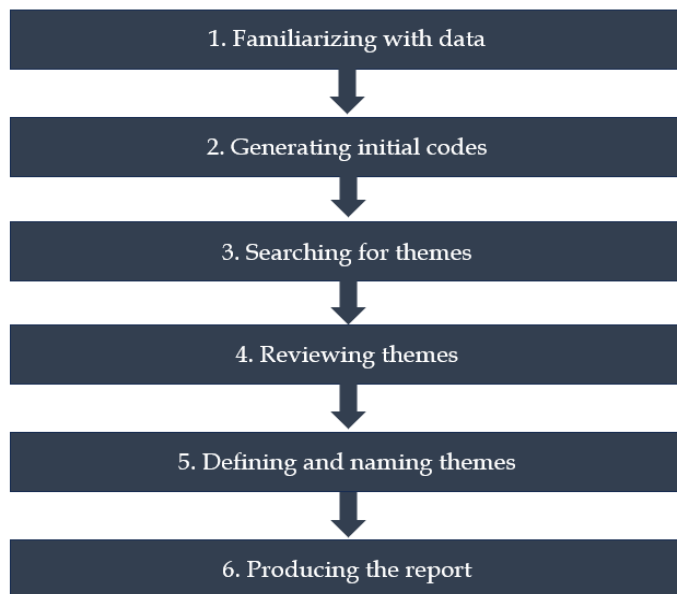


Figure 5. Phases of thematic analysis

The first phase of the analysis is to familiarize with data (Braun & Clarke, 2006). Verbal data including interviews needs to be transcribed into written form for analysis (ibid.). This process is also helpful to develop a deeper understanding of data. Moreover, it is vital to immerse yourself in the data by reading and rereading data in an active way which requires searching for meanings, patterns etc.

During the second phase, initial codes are generated from the data (Braun & Clarke, 2006). It is advised to code for as many potential themes as possible which may turn out to be interesting later in the process (ibid.). Additionally, Hair et al. (2015) describe that coding helps researchers to simplify and focus on meaningful aspects from collected data.

The third phase is searching for themes (Braun & Clarke, 2006). This means organizing different codes into potential themes and gathering all the pertinent coded data excerpts under the identified themes. This is a process where you need to consider how various codes may combine to create a comprehensive theme by analyzing each code. At this stage, data is reduced by deciding what components should be emphasized, minimized, and excluded from further study (Hair et al., 2015). Consequently, identified codes are grouped under each theme. Visual representations such as tables or mind-maps may be helpful to sort various codes into themes (Braun & Clarke, 2006). In this study, a mind-map was made on Canva to organize the codes. To find challenges facing Japanese companies, for instance, 24 codes were generated. After that, similar codes were combined, and grouped into 4 major themes.

The fourth phase entails reviewing and refining the themes (Braun & Clarke, 2006). It starts with going through all the collated extracts for each theme, and assessing whether they have a coherent pattern. After that, it is necessary to determine the effectiveness of each theme in relation to the data set, and check if there are any codes within themes that have been missed previously.



The fifth phase is to define and name themes (Braun & Clarke, 2006). After creating a thematic map that works, it is vital to “define and refine” the themes, referring to a process of identifying the core concept of each theme, and establishing the specific aspect of the data captured by each theme. This phase also entails a process where a theme includes any sub-themes.

Finally, the sixth phase is to produce the report (Braun & Clarke, 2006). The objective is to interpret the findings and results in qualitative research (Creswell, 2014), and articulate the complicated narrative of data in a manner that convinces readers of the advantage and validity of your analysis (Braun & Clarke, 2006). Furthermore, analytical narrative should not merely describe the data but also make an argument to research question (Braun & Clarke, 2006).

## 5 FINDINGS

In this chapter, the research findings of the qualitative data are presented. The first section describes Japanese companies' perception of open innovation. It starts by addressing current concerns surrounding sustainability transition and exploring current attitudes towards open innovation, to provide context and insights into the present situation of Japanese firms. It then delves into identified themes to uncover opportunities and challenges facing Japanese companies, answering the first research question. The next section presents their perception of open innovation as a means of creating shared value. Each interviewee shares their opinion of how open innovation leads to creating shared value. Overall, 15 interviewees recognize open innovation as a crucial strategy for addressing sustainability challenges while creating economic value. Additionally, one interviewee agrees with this, if it meets certain condition.

### 5.1 Japanese companies' perception of open innovation

#### 5.1.1 Current concerns surrounding sustainability

One of the goals of this research is to identify opportunities and challenges Japanese companies perceive in open innovation approach. Before asking about the main questions, I asked how they see sustainability challenges, hoping to get a sense of their general attitudes regarding the challenges. First and foremost, all the interviewees agreed that sustainability issues have affected how we do business. As embracing sustainability can accelerate innovation, all agree that sustainability initiatives bring enormous opportunities for businesses and can lead to innovative worldwide solutions.

Sustainability issues are simply not a problem for a single individual or local community, but a global issue that affects everyone on the planet. I believe that this also represents significant opportunities for global-scale innovation, which potentially create worldwide solutions. (interviewee 1)

Additionally, while governments around the world are strengthening sustainability regulations, especially in EU markets, they not only put restrictions on firms' activities, but also create business opportunities as they increase demands for sustainable products and services, and drive innovation, leading to creation of a new market.

There are European regulations, but more than anything, I want to convey the potential for the future rather than something that can hinder their chances, so I focus on various opportunities and potentials that exist in this region. [...] Since Japanese market continues to shrink further, with a declining population, it is now time for businesses that have

traditionally focused solely on the domestic market to look globally. Sustainability challenges can be business opportunity in this sense. (interviewee 8)

As a premise of this study, it was found that all the interviewees possess positive attitudes, specifically characterized by ambitious perspectives towards sustainability challenges, viewing them as potential business opportunities. However, although everyone agrees that the transition to sustainability creates business opportunities, it is certainly not an easy task to drive social and environmental change. Most respondents provided mixed answers, demonstrating ambitious attitudes towards sustainability challenges while also expressing concerns about the transition process. Through data analysis, three primary concerns were identified among Japanese companies regarding their engagement in sustainability initiatives.

### **Profitability concern**

The first theme emerged during the analysis was the topic of profitability. As companies should act as businesses, not charity organizations, they can only succeed if they also do well financially. The findings revealed that this is the pain point associated with embracing sustainability for Japanese companies. There is still a misconception that sustainability is viewed as a separate initiative, instead of being integrated at the core of their business. This perspective leads companies to view sustainability as an additional cost rather than recognizing its potential to generate financial value.

In the case of Japan, there are still areas that have not caught up, and there are companies that misunderstand sustainability as a form of social welfare. Instead of incorporating sustainability into their main business, some companies view it as a separate social activity where they make donations or engage in charitable work. There is a growing awareness due to changes in government policies and the introduction of regulations, so many feel the need to take an action, but there is often uncertainty about what to do and how to proceed, which is a pain point in Japan. (interviewee 8)

Therefore, Japanese companies possess a concern about profitability, questioning whether engaging in sustainability programs can benefit their businesses financially.

### **Cost concern**

The second theme mentioned centred around cost. As firms need to allocate valuable resources towards sustainability initiatives, it requires time and efforts in the transition process. This entails tasks such as researching, developing, and implementing new technologies. Ultimately, transitioning from the existing business model to sustainable practices may result in higher costs and prices. While large firms with relatively strong financial resources are likely to afford these changes, it is more challenging for small and medium-sized enterprises to afford sustainability due to limited financing.

I believe that large corporations with robust financial resources tend to see them as business opportunities and actively seize them to grow their business. However, medium-sized companies often face practical considerations regarding costs and feasibility when deciding how to proceed. (interviewee 4)

Following this, given that many Japanese companies still perceive sustainability challenges more as costs, it can also make it difficult to secure the necessary budget for sustainability initiatives.

I feel that many companies in Japan tend to see it (sustainability) as a cost, surprisingly. Japanese companies are a bit hesitant when it comes to sustainability issues. In practical terms, when allocating budgets for initiatives that put sustainability at the core, it's challenging. Our headquarters are in France, and we have operations in Singapore, Hong Kong, Germany, and Canada. In Western cultures, there's a stronger emphasis on social contributions and similar aspects, and they are more readily incorporated and validated. However, when we try to introduce similar initiatives in Japan, it becomes really difficult to secure the necessary budget. (interviewee 9)

### **Market shrinkage concern**

Interestingly, one of the concerns highlighted was the shrinking population in Japanese markets. During the past periods of population growth, scaling up business operations was easier and more straightforward. This was primarily because the domestic market was sufficiently large, and the population was still growing. Consequently, business was naturally scalable; as firms produced more goods, it led to increased profits. Yet, the current business landscape presents a different scenario. With the consumer base in Japan shrinking and sustainability challenges becoming increasingly complex, we cannot continue mass production and mass consumption, and expect infinite growth on a finite planet like in the past. Despite this shift, corporate leaders who have been through this bubble era still carry the previous experience with them, which may not align with sustainability principles.

The current generation of corporate leaders, especially those in prime listed companies, still carry with them the previous experience of the era where "they can sell products as long as they make". This is because, they have been doing business in an environment that is naturally scalable with an increasing population [...] This experience makes them less compatible with the context of sustainability. (interviewee 10)

In a shrinking market, businesses are more likely to face increased competition for a smaller pool of consumers. Therefore, in developed countries such as Japan, where the population is declining, there is a necessity to devise business models that can meet the demands of sustainability and thrive in these shrinking markets.

Globally, we're entering a phase of population adjustment, particularly evident in countries like Japan where the declining population trend is evident over the next decades. [...] now we need to create a sustainable environment within a shrinking population which presents a challenge, and we need to transition from a mindset accustomed to continuous growth to the one that adapts to a decreasing population scenario and sustains a viable environment with fewer demands. However, those who have thrived in the

upward trajectory of business growth may find it challenging to adjust their mindset without a change in the game plan. Therefore, bridging this gap with the older generation, including political figures, could be challenging. (interviewee 10)

Therefore, this requires us to change our mindset of how we grow businesses, which poses a great challenge particularly for older generations who are trapped in traditional thinkings.

### 5.1.2 Current attitudes surrounding open innovation

Each interviewee then shared their perception of the concept of open innovation. All the interviewees agreed that innovation is the key for facilitating the transition towards sustainable business practices. Consequently, open innovation has gained significant attentions as an effective approach for addressing sustainability challenges. Through data analysis, four distinct attitudes towards open innovation were identified.

#### **Proactive approach**

Several interviewees perceive open innovation as a proactive approach for businesses to survive in global markets. It was mentioned that emerging sustainability challenges has been a total game changer in how they do business, and they cannot stay in the same business without responding to sustainability demands. Although they feel the need to adapt their businesses to meet the growing demands for sustainability for their survival, they cannot completely change products nor the industry overnight. Thus, open innovation helps companies to make current products survive by collaborating with others and utilizing their capabilities.

We have been living in a world where diesel engines are just fine, and now we are suddenly talking about shifting to electric vehicles. We can't establish an EV division or hire 20 engineers out of nowhere. So, what we have to do is to learn from others, consider acquisitions, or collaborate with them to catch up. In such a situation, we can do only little on our own, and this is a paradigm shift that we face, and we need to learn and master new technologies for our own survival. (interviewee 3)

There are so many big companies whose business is going to be out of business in 10 years or so, so they are really in a hurry to find these next kind of climate friendly solutions. Many are of course looking into completely different directions but if you make some components for gasoline cars, maybe you are not going to be medical device maker any time soon so basically you need this kind of climate related, sustainability related technologies to make your current product survive in the future. (interviewee 5)

Particularly, the transition towards sustainable business is expected to demand new talent and expertise. Given the constraints of internal resources, open innovation offers a pathway to accessing the necessary resources from external sources.

Because of the urgent need for a rapid business transformation, there is a lack of suitable talent and expertise within the organization, and even if they exist, it's not possible to develop them in a short period. (Large firm C)

Therefore, they are proactive about embracing open innovation as a means to stay competitive in global markets.

### **Problem solving approach**

Another popular perception is to view open innovation as a problem-solving approach to sustainability challenges. As the transition is required at a rapid speed and the challenges are so big, there is a common understanding that tackling them in isolation is impractical. Therefore, many interviewees emphasized that open innovation facilitates the development of innovative solutions to address sustainability issues.

In recent years, businesses have been facing challenges that need to be solved at a rapid pace and that are so common globally that no single company or nation can tackle them alone. In such a situation, I think the most effective approach is to seek external help, collaborate with other companies and find partners to accelerate business development, rather than relying solely on internal resources within a single company. (interviewee 4)

Looking into the issues we face today, it was mentioned that the complexity is increasing more than ever before. In the past, challenges were more straightforward, such as developing transportation vehicles, refrigeration for preserving food, and maintaining comfortable living environments, among others. However, today's issues, spanning from climate change and biodiversity loss to poverty, are multifaceted and interconnected that no single company can solve them alone, highlighting the importance of collaboration.

The difficulty of problems we need to solve to provide services and businesses is rapidly increasing. Over the past 100 years or so, straightforward problems, such as accessing food all times or maintaining comfortable living environments, have already been solved. Therefore, the challenges we are now facing are relatively complicated. To launch a business or service that addresses these highly complex issues, the capabilities of a single company are not sufficient, and they are difficult to solve alone. That's why I believe that the most effective approach is to collaborate with multiple companies to tackle them together. (interviewee 10)

Consequently, innovation cannot be a mere new technology anymore; it must be technologies that effectively address grand sustainability challenges. However, developing effective solutions requires diverse knowledge and resources that it is nearly impossible to do everything alone. Therefore, open innovation is regarded as most suitable approach to drive innovation.

To create sustainable business, it often entails creating entirely new solutions where none existed before. In this sense, it's essential to bring together individuals with diverse backgrounds and viewpoints to co-create. These individuals include those who contribute financially, connect with markets, and devise strategies for social implementation. For

example, local governments might offer their infrastructure and allow the use of city streets for testing autonomous vehicles. This kind of collective efforts from various stakeholders enables sustainable ventures to flourish, so open innovation extends beyond corporate boundaries, and emphasizes the importance of collaborative innovation that involves diverse stakeholders. (interviewee 8)

Additionally, the importance of global scale solution was emphasized during the interview. Sustainability issues require global solutions rather than regional ones. According to one interviewee, while closed innovation may suffice for developing localized solutions, opening up innovation processes is crucial for creating solutions that can positively impact billions of people worldwide.

Especially with global issues like climate change, even if you reduce carbon emissions by using solar panels, it's completely meaningless if your neighbour continues to emit carbon emissions at a high rate. [...] Rather than just focusing on Japan, it's important to change the global system itself. (interviewee 6)

Issues like climate change needs to be looked at on a global scale. Japan tends to focus on localized solutions, which may generate positive results locally, but they often lack in the global perspective. Although these solutions may help one hundred million, they might not necessarily benefit all 7 billion people worldwide. By incorporating the essence of open innovation into its initiatives, their impact could potentially extend beyond just one hundred million to billions of people, which bring significant benefits. Thus, I believe that understanding the true essence of open innovation could positively influence Japan's future. (interviewee 9)

Ultimately, as open innovation can speed up innovation process, it accelerates the resolution of sustainability challenges.

With the trend towards carbon neutrality, decarbonization, and other environmental issues, many companies find themselves in a situation where they have no choice but to address these challenges. I believe that open innovation is an effective approach to tackling these challenges. While the concept of circular economy is often emphasized to build a sustainable society, relying solely on internal technologies is one approach, but to accelerate this process, it's becoming increasingly important to incorporate ideas from partner companies or startups and to adopt a sense of urgency. (large firm A)

### **Cautious approach**

Two interviewees perceive open innovation as a cautious approach to innovation. It was mentioned that open innovation allows the involved parties to share not only resources but also risks associated with innovation. By engaging in open innovation, each organization takes a smaller role in the innovation process, which can reduce costs and time, and ultimately lead to mitigating overall risks.

Even if Japan or Europe achieves carbon neutrality, if progress isn't made in Africa or so-called the Global South, it's meaningless on a global scale. Thus, we need to collectively address this problem to solve, and I believe that the concept of openness includes not only pooling collective wisdom but also sharing risks and resources together. In that sense, sustainability and open innovation are inherently interconnected, and they cannot be fundamentally solved without approaching it together. (interviewee 6)

Moreover, developing in-house R&D capabilities can be time-consuming and lead to increased costs. Given the uncertainty of whether the developed product will succeed in the market, leveraging the capabilities and resources of others that already demonstrate recognized potential could mitigate the risk.

While it is uncertain whether in-house developed products will ultimately succeed in the market, incorporating businesses with a certain level of potential can lower the risk. (large firm C)

### **Inevitable approach**

The importance of considering the entire supply chains was emphasized when it comes to sustainability. It was revealed that open innovation is also viewed as an inevitable approach for achieving sustainability in the supply chain. Two interviewees highlighted the necessity for collaboration among producers, suppliers, manufacturers, and other stakeholders across the supply chain to ensure sustainability.

Sustainability challenges encompass a wide range of issues that spans across industries. Thus, there's a growing emphasis on ensuring sustainability across supply chains, so it involves various actors, from consumers, producers, to distributors, all of whom need to operate sustainably. Although this perspective may still be relatively uncommon among Japanese companies, there's undoubtedly a growing trend towards sustainability throughout the supply chain. Consequently, it becomes inevitable that addressing sustainability issues requires collaboration among multiple companies, as relying solely on individual efforts isn't sufficient. (Large firm B)

Particularly, it was mentioned that open innovation is imperative to close the supply chain loop.

When discussing sustainability issues, especially like climate change, I see them as complex issues that involve various elements that need to be broken down and addressed collaboratively by different players. For example, in the realm of sustainability, if the goal is to create a closed-loop system for products, it's impossible for any single company to achieve this independently. It requires companies that engage in activities like collection, recycling, or upcycling. This interconnectedness and the inherent need for collaboration make it challenging for any single company to create a closed loop alone, so it puts us in a situation where utilizing open innovation isn't just an option but a necessity in such scenarios. (interviewee 10)

Therefore, open innovation is considered essential in redesigning supply chains towards closed-loop systems, primarily due to its interconnected nature within the supply chain. Therefore, open innovation plays a pivotal role in the sustainability transition.



### 5.1.3 Opportunities

The previous section reveals that Japanese companies widely recognize the importance of open innovation to tackle sustainability challenges. Based on the collected data, it appears that the opportunities they identify can be grouped into three themes: 1) the infusion of new blood 2) acceleration of innovation process 3) attainment of trust and pride. Larger, more established companies commonly acknowledge the first and second opportunities while the last one is unique to startups.

#### **The infusion of new blood**

The most mentioned topic that emerged during the thematic analysis centred around the concept of open innovation as a means of injecting new blood into organizations. Especially, as sustainability challenges require firms to make changes to their business models, products, services, and everything else, they cannot stay in the same business. Therefore, collaborating with other organizations enables firms to adapt and transform their businesses to meet the demands of today's evolving market, ultimately creating a new value.

Open innovation isn't just a must anymore; I believe it's fair to say that many major companies will die without it. In the financial sector which I was working before, insurance company used to make money from insurance premiums, but the era of making money only from insurance premiums is over, and they need to integrate data business nowadays. (interviewee 2)

If there is a next industrial revolution after the 5th Industrial revolution, new businesses should emerge by combining existing businesses with new technologies, rather than a completely new business. When firms cannot remain competitive with traditional business model, the idea of open innovation comes into play to create a new value in business (large firm A)

Particularly, open innovation is suitable for larger, more established firms that have traditional Japanese business cultures and mindsets. Collaboration between large firms and startups are often mentioned as a popular form of collaboration today. Many interviewees perceive this collaboration as a method for established Japanese firms to incorporate startups' agility and creativity into their organization. This integration aims to broaden perspectives and reshape bureaucratic business cultures, ultimately creating flexibility to facilitate innovations.

To put it bluntly, I believe that it's about bringing in new blood. To be successful, you should not sell a product that you have made with great care, and then ask the customer to buy it, but rather, you should quickly create something and ask customers for feedback and repeat this process to improve the product. This approach is often cited as a shortcut to success for startups, involving repetitive actions and learning from failures along the way. Large corporations have a track record, but it often becomes a negative legacy. For example, there is a case where a business unit was established under the president's initiative, so there's a pressure to follow a certain direction. (interviewee 3)

One of the advantages of open innovation is the opportunity to learn from each other by having discussions with other companies and various organizations. We can also incorporate practices other companies are doing into one's own company and gain new insights by engaging in open discussions. (interviewee 7)

The internal systems within large companies can be extremely rigid and bureaucratic. They also have deeply entrenched mindset, and attempting anything novel involves constant checks and needs to be meticulously confirmed. In such an environment, it's almost impossible for new businesses to emerge. Their organizational structure is geared towards optimizing existing operations for efficiency and profitability, which lacks in flexibility for innovation. Consequently, creating new ventures within such frameworks typically faces significant hurdles. This is why they tend to rely on external entities like startups to offer fresh ideas and drive innovation. (interviewee 10)

### **Acceleration of innovation process**

Open innovation enables firms to have access to resources they do not possess. This applies to startups or companies of all sizes. Larger firms tend to recognize the value of tapping into innovative technologies that startups possess. Startups, on the other hand, often see the advantages of accessing fundings, networks and sales channels larger firms possess to speed up commercialization of their technologies.

Large corporations can acquire the technology they don't possess by collaborating with startups without developing them from scratch through R&D. On the other hand, Startups can leverage the networks, sales channels and funding large corporations have to accelerate the commercialization of their own technology. (interviewee 6)

Additionally, collaborating with startups can help large firms to speed up their innovation processes to keep up with today's ever evolving demands. Startup's fast innovation cycles enable firms to create quickly, bring to market, get feedback, and improve products based on it. By repeating this process, firms can consistently meet evolving customer demands faster, and this speed is essential to survive in today's dynamic markets.

By learning external ideas, you can enter the cycle of success that's often seen in the startup community - quickly creating, seeking feedback from outside the organization, and continuously improving. I believe open innovation is an effective means to drive such a cycle. (interviewee 3)

Many interviewees highlighted that open innovation could save costs and time. While it may be possible for large firms to develop these technologies internally, it would likely be both costly and time consuming. Moreover, hiring specialists who are familiar with these technologies adds to the overall costs. In an era where the lifespan of products is shortened and customers' demands are changing, entirely relying on closed innovation is not time nor cost-effective.

Our world is changing so fast and we need to create new solutions pretty fast compared to maybe 50 years ago, 40 or even 30 years ago so open innovation is a way of getting access to technology, ideas and innovation that you will need but you just don't have

time to develop at their own company fast enough to keep up with business and the world because everything is so fast paced so you need open innovation in order to keep up with your competitors. (interviewee 5)

Nowadays, I believe that we are in a race against time, and that we need to innovate with a sense of urgency to win. Relying solely on their own resources and ideas is not sufficient to create a game changing business. Given the limited time, ideas, and resources available, it's crucial to co-create with other players, and by doing so, it becomes possible to incorporate new technologies, introduce novel business models, and leverage each other's strengths to tackle challenges that couldn't be addressed independently. In this regard, open innovation becomes significant and vital strategy. (interviewee 8)

Overall, the speed of the entire lifecycle, from launching a business, growing it, generating revenues, to declining, has dramatically shortened. In the past, the period for making profits and generating revenues was longer, and even the time to launch was on a relatively gradual curve. However, nowadays, the lifespan of products or services has significantly shortened. To keep up with this rapid pace, relying solely on internal resources is not sufficient, and it involves combining resources from other companies to adapt to the rapidly evolving market. (interviewee 10)

Therefore, to remain competitive in the global market, companies must accelerate their innovation processes by leveraging resources and capabilities of external partners. Startups can assist large firms in accelerating their innovation cycles to meet the evolving demands of today's markets, while larger firms can help startups to commercialize their promising technologies with their resources.

### **Attainment of trust and pride**

Interestingly, several interviewees including all three startups mentioned that gaining trust or pride in one way or another is the most significant advantages of participating in open innovation for startups. A startup is a young company that lacks resources including people, goods, money, information, and trust. While their technologies may be cutting-edge, startups often face the challenge of limited visibility, leading to uncertainty around their technologies. Alternatively, while their products may be attracting attentions in the field, many companies are hesitant to collaborate with them due to a lack of established trustworthiness. Therefore, when startups collaborate with established firms, they expect it to be a way of earning trust from the public. Once trust is established in their technologies, it becomes easier for startups to collaborate with other firms, unlocking additional opportunities.

Startups typically lack resources such as people, goods, money, information, and trust. When it comes to partnering with large corporations, I believe the greatest advantage lies in trust. Being able to collaborate with such a prominent corporation leads to the perception that this startup is trustworthy. Being trusted can also make it easier to collaborate with other companies and leverage the networks of large corporations for activities like PR, marketing, and promotions. (startup D)

Furthermore, the public typically does not have any image toward startups due to its newness. Therefore, they are not sure if it is worthwhile to collaborate with

them. However, collaborating with established firms can enhance startups' brand image by linking them to positive brand attributes, thereby elevating their reputation in the public eye.

Startups can enhance their brand reputation by collaborating with large corporations. If they can say "we conducted trials and proof of concepts with this big company", it allows them to appeal to potential clients, and potentially lead to consideration for future collaborations. In this sense, startups see significant value in collaborating with large corporations. (interviewee 8)

Collaborating with large corporations often gives a positive image to a brand. For example, when collaborating with a company like Shiseido (famous Japanese skincare brand), it gives startups a benefit of being associated with the Shiseido brand and elevates their name, so I believe that such advantages exist for startups. (interviewee 10)

On top of it, once their technologies are used by large corporations, it also gives a sense of pride to startups.

For startups, it would give them a source of pride to have their technologies used or acquired by a large company. (interviewee 7)

Hence, many startups collaborate with large firms to establish trust and gain pride, hoping that it paves the way for further collaborations with other companies and ultimately leads to success in the market.

#### 5.1.4 Challenges

Even though it is recognized that open innovation brings tremendous advantages for businesses, it also poses challenges particularly for Japanese companies accustomed to the closed innovation model from the past experiences. Therefore, to facilitate the adoption of open innovation in Japanese companies, it is crucial to identify the challenges associated with open innovation processes. Through thematic analysis, four most common challenges were identified: 1) lack of understanding by the person in charge 2) fear of failure 3) different speed among the involved parties 4) varying levels of awareness and enthusiasm towards sustainability challenges. It is important to note that the first two challenges are often faced by larger, more established companies while the latter two challenges are common to companies of any size.

##### **Lack of understanding by the person in charge**

The most mentioned challenges that appeared during the analysis was lack of understanding by the person in charge of open innovation at a firm. All the interviewees recognized the increasing number of open innovation related departments in Japanese companies over the past few years. As Japanese companies tend to get influenced by trends, they first started an initiative by establishing a

department for open innovation and appointing members without setting a clear goal.

A sense of obligation to do open innovation because it's trendy, has decreased somewhat, but there is still a little bit of it. There are still cases where companies are not sure how to approach it but have created an open innovation department for the time being. (interviewee 4)

I think Japanese tend to start from "forming a box". In this case, they set up an open innovation department within the company, and assign members, after which they start discussing what they want to do next, resulting in uncertainty in the direction. (interviewee 6)

Simply put, Japan is often driven based on words. This applies not only to open innovation but also to concepts like globalization, and more recently, even with SDGs. Many just use the term "SDGs" without really understanding its essence. The term "SDGs" encompass not only environmental aspects but also human rights, gender issues and many other elements, but the focus is often put on the environmental aspects. (interviewee 7)

Recently, for example, about 80 % of companies in the so-called prime market of the Tokyo Stock Exchange have established organizations that aims to create new businesses. So, there's a general movement that we need to do something new and there are quite a few companies that have established departments to work on corporate venture capital or startups. (interviewee 10)

This posed several struggles; first, not everyone has expertise in open innovation. In Japan where lifetime employment is still commonly practiced to this day, companies hire new graduates right after graduation, and train them directly. Job rotation can also happen, and companies give them a few years to acquire necessary skills for different positions. As companies typically do not recruit them for a particular position, it is quite common for companies to assign jobs to its employees depending on organizational needs. While it allows employees to experience various roles within the firm, it can be time-consuming to train them until they have necessary expertise. Hence, this resulted in lack of understanding among the individuals in charge of open innovation.

The person in charge of open innovation at large firms often has no previous experience in such matters and may have just ended up in the department by chance. So, in that sense, many of them actually don't know much about what startups are truly aiming for, startup ecosystems and etc. (interviewee 1)

Moreover, several interviewees emphasized the importance of clarifying goals before participating in open innovation, pointing out that many Japanese companies lack a clear intention of what they want to achieve through this approach. This clarity allows those in charge to figure out the direction of the company, thereby giving more purposes and meanings to each innovation initiative.

If the company knows what technology they want, things often go smoothly. However, the most challenging case is when you don't have the clarity and end up establishing an open innovation promotion department because they were told to do so from the top.

Thus, there are still companies that don't know what they want to do [...] Some companies ask me what the recent interesting technologies are, but I simply don't know. This is because what I found interesting may not be interesting to them or what they found interesting may not be interesting to me. So, before consulting, it is crucial to decide what direction they want to go as a company so that we can go on more easily. (interviewee 6)

Everything involves trial and error so it's fine to establish a department, but what matters is to find the company's own answers through trial and error and continue doing what they can. If you just hand everything over to consultants, the company loses sight of what they want to do. I want the company to have its own sense of purpose and its own identity because I feel that things won't go well if the company doesn't have a clear sense of what they want to achieve. (interviewee 9)

There're also cases where they just created a department for formality and don't know what they want to do. (interviewee 10)

### **Fear of failure**

Several interviewees mention that established companies tend to have a fear of failure and resistance to changes. This can be attributed to the seniority system, which is unique to Japanese companies. Under this system, employees are typically promoted by their length of employment, and it is usually old generation who are in top manager positions. Therefore, they often possess an established legacy, leading to a closed mindset from the past experiences. Additionally, having already passed their productive years, they may find it difficult to keep up with latest trends. Thus, this system causes firms to refrain from taking risks, such as embracing new challenges and undergoing reforms when necessary.

In Japan, decision makers are quite old, and if they are stuck in such a seniority-based society, there are vulnerable to changes or resistant to changes. In other words, people who have only a few years until retirement age do not need to take risks and achieve great success. People who are over 55 years old, for example, would like to enjoy their retirement quietly without making any mistakes. For example, they don't need to go all the way to Switzerland to introduce a hydroelectric technology they don't understand, so they say why not just use the solar energy available there? (interviewee 6)

They cannot take the plunge. If the business is too new or the technology is unheard of, there may be no example, precedents, or existing customers yet, making it difficult to proceed. I believe that such uncertainties can be a great hurdle for them. (interviewee 8)

I recognize that the biggest challenge is the mindset. One is the mindset of "not accepting anything other than what we have been working on for a long time" when it comes to new business development efforts. In our cases, the idea of producing liquid hydrocarbon fuel from CO<sub>2</sub> is easily accepted because it is an extension of the petroleum business we have been working on. In the case of renewable energy, however, petroleum is no longer necessary because electricity can be generated without the use of petroleum. The best way to remain competitive is to enter the electricity business. We have actually started to do so, but the progress has been very slow, and I think this is due to strong internal resistance. (Large firm C)

It is apparent that open innovation is not easy to succeed, and there will be a lot of failures along the way. For instance, many companies invest in startups as the initial stage of open innovation.

I strongly feel that those engaged in open innovation inevitably have to experience a lot of failures. What I mean by this is that in our open innovation department, we first meet with numerous startups and take on the challenges of investing in those unique startups with promising technologies. For example, although we currently have a portfolio of around 130 companies, it's impossible for all of them to succeed. It is said that 80% or 90% of startups fail. We meticulously screen and invest in companies that seem to have promising ideas, but even then, around 80% fail to succeed in their businesses, or cannot proceed to IPO or exit.

Although their end goal is to create new products or services through open innovation, it takes a significant amount of time to reach this final stage and many projects often fail at the trial stage.

For us, investment is not the end goal and to start open innovation, we need to combine their speed, ideas, others with our business assets to launch and develop new businesses. This process takes a significant amount of time, and many trials including proof of concepts (POC) don't go well. (large firm A)

Therefore, given this nature, it is essential to recognize that open innovation is a time-consuming process and embrace the failures in order to reach the end goal. Especially, people in top management positions need to understand this principle when engaging in open innovation. Otherwise, they could give up in the middle of the process and never reach the end goal of engaging in open innovation. Hence, it is essential to create a corporate culture that accept failures to succeed in open innovation.

We need to accept these challenges and proceed with enormous courage when engaging with startups in open innovation. I feel that not only us in the department but also executives and management in large corporations need to understand this when engaging in open innovation. (large firm A)

### **Different speed among the involved parties**

Collaborations between established firms and startups are very popular form of open innovation. However, many interviewees see slow decision-making processes evident in large Japanese firms as a major obstacle in open innovation.

In Japan, the decision-making process is very long. (interviewee 4)

I think decision making process can be a barrier, not much with startups but of course with big corporations. Because with big corporations, the fact is that their decision making can take so much time that for startups, it's kind of like deteriorate situations because startups need money quick, and they need customers quick and they need quick market entry. They don't have time for like 6-month decision making process. (interviewee 5)

This is due to Japanese corporate culture that values on harmony within the organization, and places great importance on hierarchy. There are many processes required to reach a decision, and many parties are involved along the way. Therefore, it takes a considerable amount of time until a consensus is reached, which make the firm move very slow.

After various simulations are conducted to create a perfect scenario of what to do in certain cases, they give the go-ahead. Especially for large companies, it takes quite a long time to reach a decision maker. (interviewee 4)

In Japan, it is necessary to obtain approval from decision-makers such as executives, management, and department heads from headquarters. We have to diligently prepare explanations to obtain agreement. This process is much longer than that of a startup. We have to give the same explanation multiple times to people in the necessary positions, starting from the bottom, and only when we receive approval from the top, we can write up a formal proposal. Once the proposal is stamped, we can finally proceed. There is a significant gap between the process that startups envision and what actually happens, and I think this is a barrier that everyone faces when engaging in open innovation. (large firm A)

Moreover, Japanese companies prefer to build a trust before starting business with other firms. It can require many visits and meetings before even starting, which also prolongs the decision-making process.

Additionally, in Japan, it takes many visits and meetings to build a relationship of trust between people before going into business. (interviewee 4)

Although Japanese startups may be familiar with this corporate culture prevalent in large Japanese firms, it becomes more challenging for overseas startups that are not accustomed to Japanese business norms.

In terms of time, there is a clear difference between the cycle that startups want to follow and the speed at which large companies can move. I've heard complains like, "why does it take months just for a mere 2 or 3 million investments?" from overseas startups. I feel that Japanese companies often lack familiarity with startup investment's know-how and ideal timelines that lead to mismatches and ultimately, failure in relationships. (interviewee 3)

While it is understandable that large companies need to navigate through many layers that exist in the organization, one interviewee emphasized that it could pose an additional challenge for businesses. This is because new technologies, especially in sustainability related fields are in high demand. If it takes too much time to make a decision, good technology will be more likely to be unavailable by the time when a decision is made. Thus, there is a high possibility of missing out on opportunities.

Good technology is very popular. Investors and large companies from all over the world are interested in partnering with them. For Japanese companies, if decision-making takes a long time, it puts them behind, and there will be fewer opportunities for them to acquire or access good technology. Thus, I think it is better to develop a keen sense of judgement



and technology assessment to invest quickly. The reason why things take so long is primarily due to the many layers in Japanese firms, which leads to physical constraints and delays in reaching decisions. To eliminate these layers, we should establish a system where authority can be delegated entirely to individuals especially in areas like open innovation, where quick decision-making is essential. (interviewee 4)

Therefore, it is crucial to make decision-making processes simpler and faster by allocating greater authority to the person on site, for instance. By doing so, large firms can meet the spend that startups seek, thereby preventing them from missing opportunities for innovations.

### **Varying levels of awareness and enthusiasm towards sustainability challenges**

Several interviewees mention that different levels of awareness and passion towards sustainability challenges are one of the barriers to open innovation. Startups typically have one problem they aim to solve with their products or services, and they have a strong passion for it, driving them enough to establish a company. However, as established companies tend to have many business units within the firm, they may not have the same level of enthusiasms toward the challenge. Especially, this is evident when individuals responsible from the large firm's side are forced to participate in the project by the company, without their will. This could result in large firm focusing on financial numbers over fostering alignment with the vision and value of startup founders.

When it comes to areas such as climate change, I think there is a significant gap between those who are being forced to do something because they are told by their managers and the founders who quit their previous jobs and invested money to create a startup because they genuinely wanted to pursue this. The startup company wants to share the mission of reducing CO2 emissions so that children can live in the same conditions as in the world today until year 2100 and have a business justification for it. However, if the person is just being told by the general manager, they may focus solely on business-side numbers instead of embracing the former mission. I believe that this discrepancy is quite common. (interviewee 3)

Additionally, age can also influence the level of enthusiasm toward the challenge. The concept of Sustainable Development Goals (SDGs) is widely recognized today. Young generations are often familiar with the concept as they often received education on this subject at school. However, it is more likely a new concept for older generations as they were not exposed to this concept growing up and may show less interest in sustainability.

SDGs are incorporated into their education for the younger generation, so the topic naturally resonates with them. However, relatively older generation, who are typically in management team don't know what SDGs are at all and see it something that is irrelevant to them. Thus, I think it is quite difficult to raise awareness from the starting point. (startup D)

Furthermore, the person in charge may have the same level of passion towards the project because they have been involved in it since the beginning. However, those in top management positions at larger firms are not directly involved in the

project and may possess hierarchical perspective, not treating startups as equal to them.

It is a little difficult to synchronize the temperature. The individuals directly involved in this demonstration project naturally share the same vision and become like teammates with us. When it comes to matching the temperature with management team or department heads, it can be quite challenging. Some of them are like "oh this is just a temporary project", and tend to have a more hierarchical perspective, observing the project from above. Thus, we try to emphasize how serious we are to achieve results in this demonstration project and how determined we are to change the industry, but this is where we faced some challenges in communication. We explain that we want to work with the company as equals, but there is some hesitation from their side. (Startup E)

Therefore, varying levels of awareness and enthusiasm among collaborators, especially between large established firms and startups can be a challenge to achieving smoother collaboration.

It is also crucial to mention that the strong passions that startups' founders and other members possess may lead to a strong bias, making it difficult for them to see the big picture and accept others' viewpoints. This could be a barrier to seamless collaboration as getting constructive feedback is essential to improve products or services. Therefore, startups should be also able to accept flaws and make changes, when necessary, by listening to collaborators' opinions.

Well, founders are often working alone or have strong visions, so they sometimes have a bias that makes it difficult to see what is really important objectively. Some companies are open to opinions and feedback, while there are also companies that keep to themselves and don't listen to others. If you have an open-minded approach, you can work together and grow. However, if you are closed-minded, you may miss opportunities for improvement or growth, and get caught up in thinking that things should be a certain way. Startups need to handle marketing, sales, business development, strategy and so on, but people tend to focus on what they think is important. Thus, I think it is crucial to work as a team to look at the situation from a 360-degree perspective and see what is truly essential for the next steps. (Large firm B)

## 5.2 Creating shared value

### 5.2.1 How open innovation adds value to business and society

To answer the second research question of this thesis, the level of understanding of the CSV concept was first evaluated among the interviewees. Based on collected data, it was found that 8 out of 16 interviewees know and understand the concept while 4 of them do not know anything about it. In between, there are 2 respondents who have heard of the concept but are not familiar with its meaning, and another 2 respondents who have never heard of the concept but are familiar with the idea itself of creating economic value and social value simultaneously.

I did not know the concept of CSV, but I'm familiar with the idea it presents. I mean, CSR is a more disappearing term in that sense, as we need to solve world problems via business activity. (interviewee 3)

Out of the 16 interviewees, 15 of them agreed that open innovation can add value to the business as well as to society simultaneously, while one interviewee agreed so under certain condition. Based on collected data, three themes emerged regarding how open innovation contributes to creating shared value.

### **Collaborative ecosystems**

Open innovation promotes collaborative ecosystems by enabling firms to have access to resources they do not possess. This makes it possible to develop sustainability solutions that could not be innovated all internally, creating a new value for society.

I think the significant value in open innovation lies in accessing expertise from outside, as it enables firms to incorporate knowledge and insights that one doesn't possess and leverage one's own expertise to benefit others. This creates a new value where 1 plus 1 equal 3, so to speak. Collaborating with various individuals becomes more fruitful when there's a shared set of values. It facilitates the creation of sustainable new value compared to doing it alone. (interviewee 6)

A product or service that effectively contributes to solving sustainability issues will garner demand in the market, driving increased sales for businesses. Furthermore, once its development contributes to breakthroughs on grand challenges, it makes a significant impact on society.

I believe that open innovation is particularly well suited for solving complex problems or issues that require interconnected solutions. So, by connecting it with CSV, it becomes possible to tackle problems that couldn't be solved before, and when those problems are resolved, it not only benefits the companies involved but also society as a whole. (interviewee 10)

Consequently, establishing partnerships allows firms to complement their own capabilities, enabling them to sustain their competitiveness. Generating a new value not only revitalizes society but also the entire industry.

I believe that open innovation itself is necessary to maintain a company's competitiveness. Consequently, it leads to creating shared value, and as various partnerships are formed through open innovation, it contributes to the revitalization of society as a whole and the entire industry. (startup F)

Therefore, creating collaborative ecosystems where organizations can leverage each other's capabilities to co-create accelerates the creation of a new value that contributes to solving sustainability challenges, all while enabling firms to achieve financial gains. This fosters a significant positive impact on society at large, creating win-win situations.

### **Efficient use of resources**

Second, open innovation encourages efficient use of resources. It is crucial to recognize that not everything has to be developed internally, as it requires too much money, time, and risks. If firms acknowledge their own limitations and open up their innovation processes to external stakeholders, they can more readily leverage the resources, expertise, and capabilities of other organizations to innovate, thus enabling them to tackle common challenges effectively.

It becomes possible to further reduce costs or effectively utilize limited resources, and there's also the potential for speeding up processes. (interviewee 6)

Otherwise, if firms attempt to develop everything internally, it may be time-consuming and costly, delaying the creation of social value as well as economic value. It was highlighted that involving small companies specializing in specific areas can speed up the innovation process, resulting in the creation of greater value compared to individual efforts.

I believe that both large and small companies have their own limitations. If they attempt to handle everything on their own, it could be time-consuming and costly, potentially leading to the wasteful allocation of resources for society. Thus, even if larger companies can allocate resources as needed, they can also rely on small companies that specialize in the area. By allowing specialists to handle tasks they excel at, the combined efforts result in greater value than individuals' contributions, and this approach can contribute to the overall betterment of society. (startup D)

Therefore, open innovation helps reduce inefficient resource use within society. Optimizing resource utilization reduces costs and time associated with innovation. This fosters the creation of shared value by accelerating the resolution of problems and enhancing competitiveness of the organization involved.

### **Startup success cycle**

Lastly, open innovation can accelerate innovation processes of established firms by tapping into startup's faster innovation lifecycles and facilitating quicker market access. This so-called "success" cycle of startups involves developing a minimum viable product, launching, collecting feedback, and making improvements based on feedback. Repeating this cycle refines products, aligning them with customer preferences and demands faster. Ultimately, products become what customers truly want to buy, and create social value that fulfills their demands. As a result, products can be sold widely at higher prices, and the profits naturally follow.

One of the significant benefits of open innovation is the concept that collaboration between individuals A and B can accelerate the process. Specifically, it involves creating a minimum viable product, getting it to market, collecting feedback, releasing improved versions, and continually improving the product, often referred to as the startup success cycle. The advantage of this cycle is that it leads to products that customers want to buy. Naturally, customers spend money on what they want and avoid spending on what they don't. By realizing and accelerating this cycle through open innovation, one can bring

better products to the market while eliminating unnecessary ones. Consequently, this results in products that customers desire, and if the product is something customers want, it can be sold at a higher price, leading to profitability. This creates a cycle where products that addresses social issues in a profitable manner can be developed, ultimately leading to creating shared value. (interviewee 3)

Therefore, by leveraging the agility of startup innovation lifecycles, established firms can swiftly meet the demands of ever evolving market's needs. This acceleration can facilitate the creation of products that address societal needs, thereby leading to simultaneous generation of profits.

Although many interviewees perceive open innovation as a way of creating shared value, one interviewee raised an interesting point. It is agreed that open innovation enables firms to create economic value while simultaneously addressing societal challenges. However, if the developed products or services are not affordable for many consumers, we cannot achieve the desired outcome of creating economic value and social value simultaneously. For instance, even if renewable energy is accessible to citizens, are many of them truly choosing it over fossil fuels, despite its higher costs? Similarly, consider a scenario where a clothing store sells T-shirts made of 100% sustainable materials for 100 euros, while the regular T-shirts costs 20 euros. Although it is apparent that the former one is more sustainable, the reality is that not many people can afford to purchase it. As a result, when many consumers are unable to afford sustainable products due to their high prices, it does not contribute to creating much social value. Additionally, if there are only a few consumers who opt for sustainable products, it does not generate much economic value either for businesses, which could be a failure of shared value creation.

I think we all know that wind power is good, and we should be all paying for wind power like as part of our energy mix, right? which is an option for many electricity providers in Finland. You can pay a little bit extra for wind power or solar power, but how many people are actually doing that? Even though everybody knows that we should use solar or wind power, not so many. This is what I'm talking about. So, with open innovation, you can go on and innovate but you need to make sure that it's something that people are willing to use. [...] you really need to be able to create shared value not only between startups or research institutes and corporations but shared value also with end-users and I'd emphasize the value here because it's all about value. (interviewee 5)

Therefore, consumer perspectives should be a central focus in open innovation to create shared value. Additionally, affordability should be considered to maximize the potential for businesses to create shared value.

## 6 DISCUSSION

This study has reached the aim of finding answers to two research questions by interviewing open innovation facilitators and Japanese companies. While Japan held the global innovation leadership in the past, the momentum has been slowing down over the past years, making it difficult for Japanese companies to reclaim its title (Ikeda et al., 2016). Furthermore, considering that the sustainability issues we face today are so big and complicated, the importance of adopting open innovation has started to be recognized in Japan, where closed innovation had been a dominant approach (Chesbrough, 2012). This study provides insights into the perceptions of Japanese companies on open innovation and its role for creating shared value. In this section, I will discuss the meanings of the findings in this study. First, I will revisit the research questions and provide a summary of the key research findings.

### 6.1 Summary of the research results

Undoubtedly, sustainability issues posed great challenges for businesses. While there was a common perception of viewing sustainability issues as potential business opportunities, embracing sustainability requires companies to change their business practices, a process that can be complex and demanding. The study revealed three major concerns prevalent among Japanese companies during sustainability transition. They centered around its profitability, costs and shrinking market traits in Japan. Particularly, the shrinking Japanese market presents a significant challenge for firms as it requires them to change their growth strategies while aligning it with sustainability. Moreover, four different perspectives on open innovation were identified, regarding it as a proactive approach for businesses to survive in global markets, a problem-solving approach to sustainability challenges, a cautious approach to innovation, and an inevitable approach to ensuring sustainability in the supply chain. The fascinating point about this finding is that sustainability consistently remained a focal point in employing open innovation, regardless of their perspectives on open innovation.

#### **RQ1. What opportunities and challenges do Japanese companies perceive in open innovation?**

Open innovation presents numerous opportunities and challenges. The study identified three major opportunities Japanese companies identify in open innovation, which are the injection of new blood into organizations, acceleration of innovation processes and building trust and pride in the firm. What is common across all these three opportunities is that open innovation serves as a valuable means to complement what is missing in the organization. To accelerate the adoption of open innovation in Japanese firms, it was also essential to identify the barriers to open innovation. Four major challenges were identified, which are

a lack of understanding by the person in charge at a large firm, a fear of failure and resistance to changes ingrained in established firms, mismatch in the speed of decision-making processes among the involved parties, and a varying level of awareness and enthusiasm towards sustainability challenges. These challenges were largely attributed to distinctive characteristics of Japanese business practices, which will be explored in the next section.

### **RQ2: How do Japanese firms perceive the role of open innovation for creating shared value?**

Open innovation is perceived as a way for Japanese businesses to create economic value and societal value simultaneously. By creating shared value, it will ultimately lead Japanese firms to regain momentum in global competitions. Then, how does open innovation contribute to shared value creation? The study shows that open innovation generates shared value by creating collaborative ecosystems, optimizing resource utilization, and enabling established firms to tap into startups' fast innovation lifecycles. One of the significant findings is that while many interviewees agreed that open innovation fosters creating shared value, it was also suggested that open innovation does not lead to creating shared value automatically. Regardless of how sustainable products or services may be, if they are not affordable for mainstream consumers, it cannot add economic value to businesses due to a lack of sales. Consequently, if products are not widely accepted in society, they cannot bring significant impacts on society either. Therefore, this study identified the research gap to create shared value through open innovation, indicating that creating shared value is not just about developing sustainable products or services; firms also need to take affordability into consideration, to maximize the creation of shared value, which is often overlooked in practical business endeavors. In the next section, I will discuss the findings by connecting them to previous studies.

## **6.2 Discussion and contributions**

### **Opportunities**

There are three major opportunities that Japanese companies perceive in open innovation: 1) the infusion of new blood 2) acceleration of innovation process 3) attainment of trust and pride.

This research confirms the previous studies that open innovation enables firms to fill gaps in the current business by utilizing external resources (Chesbrough, 2003). This is the fundamental reason why firms engage in open innovation, which applies to all three opportunities identified in this study. In terms of the first opportunity identified, the finding agrees with the statement of Narula (2004) that large firms aim to collaborate with smaller firms to leverage their flexibility and innovativeness. As sustainability challenges demand a transformation of traditional business practices including philosophy, values, products, and processes (Adams et al., 2016), these two elements are essential to drive

the transformation. Thus, open innovation is viewed as a way for businesses to inject new blood into their current organization to meet the growing demands for sustainability. The second opportunity identified also confirms the previous studies that open innovation accelerates the overall innovation processes, including the commercialization of products (Chesbrough, 2003). These first two findings align with the studies by Narula (2004) and Hagedoorn (1993) that the primary motives of firms' engagement in collaboration are access to complementary resources (ex. technologies) and the reduction of innovation time span.

Lastly, the finding shows that the possibility of gaining trust and pride from collaboration with large firms is the most significant benefit for startups to initiate open innovation. This finding aligns with the claim of Giglio et al. (2023) and Rodríguez-Ferradas et al. (2020) that collaboration with large firms helps startups to establish themselves on a market by increasing their reputation and credibility, which encourages also other firms to collaborate with them. On the contrary, the result contradicts the claim of Narula (2004) that small firms consider engaging in open innovation simply to access to marketing and sales channels of larger firms. Therefore, this finding contributes to the existing literature by uncovering the primary opportunity that startups value most in open innovation: attainment of trust and pride. This suggests that startups tend to value intangible assets that cannot be acquired through financial means.

### **Challenges**

Another contribution of this research is the identification of challenges that Japanese companies face when participating in open innovation. While global peers have adopted open innovation successfully, Japanese firms seem still stuck in closed innovation (Ikeda et al., 2016). However, open innovation is considered essential in today's business, especially for Japanese businesses to reclaim the global innovation leadership (ibid.). The findings reveal four major challenges Japanese companies encounter: 1) lack of understanding by the person in charge 2) fear of failure 3) different speed among the involved parties 4) varying levels of awareness and enthusiasm towards sustainability challenges.

The first challenge points out a lack of understanding by the person in charge of open innovation at a firm. Job rotation is seen as the root cause of this challenge. As stated in The Japan Institute of Labour (n.d.), employees are not hired for specific roles, which enable firms to rotate them based on organizational needs. While this system offers several advantages, such as facilitating the adjustments in the supply and demand of the workforce within the firm (ibid.), it takes significant time and efforts to acquire new skills. As firms try to have the employees learn new skills, rather than seeking new talents outside the organization, it presents a greater challenge for Japanese firms to promptly respond to emerging trends, such as open innovation.

The second challenge is a fear of failure and resistance to changes ingrained in established Japanese firms. It highlights the problem of the seniority system in Japan, where top managerial positions consist of old generation. This finding confirms the earlier study by Woronoff (1992, as cited in Pudielko, 2006)



that employees who are in top managerial positions are typically in their 60s or even 70s and have passed their most productive age, making it difficult to keep up with the latest trends. Additionally, as the seniority system prefers loyal followers over outstanding leaders, those managers are not willing to take on new paths and reforms deemed risky (ibid.). Thus, the seniority system fosters fear of failure and resistance to new change among Japanese companies, causing the widespread anxiety in their organizations.

The third challenge lies in a different decision-making speed among the involved parties. This is especially evident in Japanese companies that value consensus within the firm (Hirasaka et al. ,2021). The finding aligns with many previous studies, suggesting that the consensus-oriented organizational culture, particularly prevalent in large, established Japanese firms, is the cause of slowness in their decision-making processes. However, little was known about how it can impede open innovation to advance sustainability. This study reveals that since innovative sustainability technologies are in high demands, a slow decision-making process can hinder Japanese companies' access to these technologies. Therefore, this result contributes to the existing literature by identifying the potential disadvantage of slow decision-making process and indicating that this slowness is not suitable in the current business landscape where firms need to respond to changes swiftly.

Lastly, the finding reveals that varying levels of awareness and enthusiasm towards sustainability challenges is a barrier to open innovation. Startup founders are driven by a strong passion to solve a particular problem (Binowo & Hidayanto, 2023). On the other hand, larger firms typically have many business units within that employees in charge may not share the same level of commitment or understanding towards it as the startup side. Furthermore, it is also seen that having strong passions towards one challenge could result in a bias that makes it difficult for the founders to accept others' opinions. As this finding is not much covered by the literature, the study makes a theoretical contribution by identifying a new challenge in open innovation and suggesting that bridging these gaps is crucial for ensuring smooth collaboration.

The findings of this study provide a new understanding of the barriers to open innovation in Japanese firms, demonstrating a connection between Japanese corporate culture and these challenges. Moreover, there is not enough literature that focuses on the unique challenges Japanese firms face in open innovation. Therefore, this study contributes to the existing literature by offering areas for improvement to facilitate the adoption of open innovation in Japanese businesses.

### **Creating shared value through open innovation**

One of the most important contributions of this study is the clarification of how open innovation leads to creating shared value. According to Camilleri et al. (2023), there is currently a scarcity of empirical studies that explore how open innovation are adding value to the business as well as to society. The findings

show that open innovation can foster collaborative ecosystems, optimize resource utilization, and enable large firms to tap into startups' fast innovation lifecycles. All these factors create the great potential to create shared value, driving firms to innovate for sustainability solutions while also generating economic values for businesses. Hence, the results contribute to the existing literature by filling this research gap.

Finally, this study contributes in pointing focus on affordability in creating shared value. Since open innovation and CSV are rather concepts, this study utilized stakeholder theory to help us understand the significance of considering the interests of all stakeholders. Based on it, the findings highlight the importance of considering affordability in fostering the creation of shared value through open innovation. While open innovation may promote social progress, overlooking affordability for consumers could limit the widespread adoption of a sustainable product or service, impeding the creation of shared value. This study confirms the previous studies that higher prices pose an obstacle for consumers when purchasing green products. Steg et al. (2014) emphasize that there exists a significant disparity between customers' attitudes and their actual purchasing behavior. For example, not many consumers choose an energy efficient appliance which is twice as expensive as the regular one (ibid.). According to Vermeir and Verbeke (2006), despite the growing interest among consumers in sustainable products, markets for sustainable food remain niche, appealing mainly to consumers with specific characteristics. Typically, those are middle-aged individuals with higher income levels and above average education, holding prestigious occupations and are well-informed (ibid.). The results suggest that even if developed products are sustainable, their high prices often discourage consumers from purchasing them, reducing the potential for businesses to gain economic value. Additionally, if they are not adopted by mainstream customers, their markets will remain niche, reducing their societal value. Therefore, the findings indicate that without considering affordability, their impact on both society and business will likely remain limited. Thus, this research highlights the significance of making sustainable products and services financially attractive through open innovation processes to maximize the potential for creating shared value. When developing a new innovative solution, it is crucial to consider whether "consumers can truly afford it". This consideration ensures that businesses align their product development with both sustainability goals and the economic needs of consumers. The study contributes to advancing this promising field of study by identifying that such alignment is vital for creating shared value.

The findings of this research are important for Japanese businesses. First, the study provides clarity on the opportunities and challenges they face in open innovation. The findings imply that Japanese unique corporate culture poses a significant barrier to open innovation, requiring some adjustments to maintain competitiveness in global markets. Furthermore, this research filled the research gap between open innovation and creating shared value by clarifying its relationship.

The findings indicate that as higher prices often deter consumers from purchasing sustainable products, affordability should be taken into account to maximize the potential for businesses to create shared value.

### **6.3 Limitations of the study**

The study has several limitations. First, this study is exploratory and focused on Japanese companies. Thus, the findings are only applicable to Japan and cannot be generalized on the international scale. Second, as closed innovation remains popular in Japan, it would be possible to have different outcomes if the research focused on a country where open innovation has been utilized as a popular approach. Third, the study had time and data availability constraints. As the data sample of this study was rather small, it may have an impact on the results if the research was conducted for a longer period.

Despite the limitations, this research contributes to existing body of literature by identifying the opportunities and challenges facing Japanese companies in the open innovation approach. Moreover, the study sheds light on how open innovation can lead to creating shared value, providing valuable insights for Japanese businesses to promote the wider adoption of open innovation approach in Japan.

### **6.4 Suggestions for future study**

There are several suggestions for future research. How do specific characteristics of different countries influence the opportunities and challenges firms face? As this study focused on Japan, where closed innovation has traditionally prevailed, further research can explore a country where open innovation has been widely utilized and compare the identified opportunities and challenges to see any patterns. Second, interviewees were relatively young, with most of them in their 30s or 40s. Future research can conduct interviews on older generation aged 50 and above, who have experienced Japan's bubble economy during their careers and are accustomed to closed innovation approach. This may offer unique insights into how they perceive open innovation and could produce different outcomes. Third, as Japanese government encourage the use of open innovation to revive the economy, nowadays most people hold positive views on it regardless of whether they implement it in a firm. Considering this, future research can be done on those who have negative attitudes toward open innovation to see what factors contribute to their negative perceptions. Lastly, the literature review strongly emphasizes a notable gap in research regarding the connection between open innovation and creating shared value. Further research can be carried out

to find a mechanism to create shared value through open innovation, as well as to identify the potential barriers to this process.

## 7 CONCLUSION

With growing concerns towards sustainability challenges, the legitimacy of business has fallen down (Porter & Kramer, 2011). To solve the biggest challenges of our time while pursuing profitability, open innovation has gained significant attentions. Concurrently, as Japanese business struggles to regain the global innovation leadership they once held just a few decades ago, open innovation is seen as a way to regain its momentum (Ikeda et al., 2016).

This Master's thesis aimed to identify the opportunities and challenges Japanese firms face in open innovation and how it adds value to the business as well as to society. Altogether, 16 interviews were conducted as the data for this thesis. The interviewees consist of 10 open innovation professionals and 6 Japanese companies to provide insights into the current situation in Japanese firms. The findings of this study revealed three major opportunities Japanese firms perceive in open innovation 1) the infusion of new blood into the organization 2) acceleration of innovation process 3) attainment of trust and pride. Additionally, four major challenges were also identified: 1) lack of understanding by the person in charge 2) fear of failure 3) different speed among the involved parties 4) varying levels of awareness and enthusiasm towards sustainability challenges. This study then identified three mechanisms of open innovation approach to add value to the business as well as to society: creating collaborative ecosystems, optimizing resource utilization, and enabling large firms to leverage startups' fast innovation lifecycles. One of the significant findings of this study is that affordability plays a pivotal role in promoting the creation of shared value in business.

## REFERENCES

- Adams, R., Jeanrenaud, S., Bessant, J., Denyer, D., & Overy, P. (2016). Sustainability-oriented Innovation: A Systematic Review. *International Journal of Management Reviews*, 18(2), 180–205. <https://doi.org/10.1111/ijmr.12068>
- Afeltra, G., Alerasoul, S. A., & Strozzi, F. (2021). The evolution of sustainable innovation: From the past to the future. *European Journal of Innovation Management*, 26(2), 386–421. <https://doi.org/10.1108/EJIM-02-2021-0113>
- Alberti, F. G., & Belfanti, F. (2019). Creating shared value and clusters: The case of an Italian cluster initiative in food waste prevention. *Competitiveness Review: An International Business Journal*, 29(1), 39–60. <https://doi.org/10.1108/CR-01-2017-0008>
- Alberti, F. G., & Varon Garrido, M. A. (2017). Can profit and sustainability goals co-exist? New business models for hybrid firms. *Journal of Business Strategy*, 38(1), 3–13. <https://doi.org/10.1108/JBS-12-2015-0124>
- Antons, D., Declerck, M., Diener, K., Koch, I., & Piller, F. T. (2017). Assessing the not-invented-here syndrome: Development and validation of implicit and explicit measurements. *Journal of Organizational Behavior*, 38(8), 1227–1245. <https://doi.org/10.1002/job.2199>
- Bigliardi, B., & Filippelli, S. (2022). Sustainability and Open Innovation: Main Themes and Research Trajectories. *Sustainability*, 14(11), Article 11. <https://doi.org/10.3390/su14116763>
- Binowo, K., & Hidayanto, A. N. (2023). Discovering Success Factors in the Pioneering Stage of a Digital Startup. *Organizacija*, 56(1), 3–17. <https://doi.org/10.2478/orga-2023-0001>
- Blank, S. (2013). Why the Lean Start-Up Changes Everything: Harvard Business Review. *Harvard Business Review*, 91(5), 63–72.
- Bogers, M., Chesbrough, H., & Strand, R. (2020). Sustainable open innovation to address a grand challenge: Lessons from Carlsberg and the Green Fiber Bottle. *British Food Journal*, 122(5), 1505–1517. <https://doi.org/10.1108/BFJ-07-2019-0534>
- Boons, F., Montalvo, C., Quist, J., & Wagner, M. (2013). Sustainable innovation, business models and economic performance: An overview. *Journal of Cleaner Production*, 45, 1–8. <https://doi.org/10.1016/j.jclepro.2012.08.013>
- Bowen, H. R. (1953). *Social responsibilities of the businessman*; New York, Harper.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Brundtland, G. (1987). *Report of the World Commission on Environment and Development: Our Common Future*,. <https://www.are.admin.ch/are/en/home/medien-und-publikationen/publikationen/nachhaltige-entwicklung/brundtland-report.html>
- Burger, B., Kanbach, D. K., Kraus, S., Breier, M., & Corvello, V. (2023). On the use of AI-based tools like ChatGPT to support management research. *European*

- Journal of Innovation Management*, 26(7), 233–241.  
<https://doi.org/10.1108/EJIM-02-2023-0156>
- Cajaiba-Santana, G. (2014). Social innovation: Moving the field forward. A conceptual framework. *Technological Forecasting and Social Change*, 82, 42–51.  
<https://doi.org/10.1016/j.techfore.2013.05.008>
- Camilleri, M. A., Troise, C., Strazzullo, S., & Bresciani, S. (2023). Creating shared value through open innovation approaches: Opportunities and challenges for corporate sustainability. *Business Strategy and the Environment*, n/a(n/a).  
<https://doi.org/10.1002/bse.3377>
- Cappa, F., Oriani, R., Pinelli, M., & De Massis, A. (2019). When does crowdsourcing benefit firm stock market performance? *Research Policy*, 48(9), 103825.  
<https://doi.org/10.1016/j.respol.2019.103825>
- Carroll, A. B. (1979). A Three-Dimensional Conceptual Model of Corporate Performance. *The Academy of Management Review*, 4(4), 497–505.  
<https://doi.org/10.2307/257850>
- Carroll, A. B. (1999). Corporate social responsibility: Evolution of a definitional construct. *Business and Society*, 38(3), 268–295.
- Carroll, A. B. (2008). A History of Corporate Social Responsibility: Concepts and Practices. In A. Crane, D. Matten, A. McWilliams, J. Moon, & D. S. Siegel (Eds.), *The Oxford Handbook of Corporate Social Responsibility* (p. 0). Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780199211593.003.0002>
- Chesbrough, H. (2012). Open Innovation: Where We've Been and Where We're Going. *Research-Technology Management*, 55(4), 20–27.  
<https://doi.org/10.5437/08956308X5504085>
- Chesbrough, H. (2017). The Future of Open Innovation. *Research Technology Management*, 60(1), 35–38. <https://doi.org/10.1080/08956308.2017.1255054>
- Chesbrough, H., & Bogers, M. (2014). *Explicating Open Innovation: Clarifying an Emerging Paradigm for Understanding Innovation* (SSRN Scholarly Paper 2427233). <https://papers.ssrn.com/abstract=2427233>
- Chesbrough, H. W. (2003). The Era of Open Innovation. *MIT Sloan Management Review*, 44(3), 35–41.
- Cillo, V., Petruzzelli, A. M., Ardito, L., & Del Giudice, M. (2019). Understanding sustainable innovation: A systematic literature review. *Corporate Social Responsibility and Environmental Management*, 26(5), 1012–1025.  
<https://doi.org/10.1002/csr.1783>
- Clarke, V., & Braun, V. (2017). Thematic analysis. *The Journal of Positive Psychology*, 12(3), 297–298. <https://doi.org/10.1080/17439760.2016.1262613>
- Confino, J. (2012, April 24). Unilever's Paul Polman: Challenging the corporate status quo. *The Guardian*. <https://www.theguardian.com/sustainable-business/paul-polman-unilever-sustainable-living-plan>
- Crane, A., Palazzo, G., Spence, L. J., & Matten, D. (2014). Contesting the Value of 'Creating Shared Value'. *California Management Review*, 56(2), 130–153.  
<https://doi.org/10.1525/cmr.2014.56.2.130>
- Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed). Sage.

- Dahlander, L., & Gann, D. M. (2010). How open is innovation? *Research Policy*, 39(6), 699–709. <https://doi.org/10.1016/j.respol.2010.01.013>
- DiCicco-Bloom, B., & Crabtree, B. F. (2006). The qualitative research interview. *Medical Education*, 40(4), 314–321. <https://doi.org/10.1111/j.1365-2929.2006.02418.x>
- Eriksson, P., & Kovalainen, A. (2008). *Qualitative Methods in Business Research*. SAGE Publications Ltd. <https://doi.org/10.4135/9780857028044>
- Eriksson, P., & Kovalainen, A. (2016). *Qualitative methods in business research* (2nd edition). Sage Publications.
- Freeman, R. E. (Ed.). (2010). *Stakeholder theory: The state of the art*. Cambridge University Press.
- Freeman, R. E., & Reed, D. L. (1983). Stockholders and Stakeholders: A New Perspective on Corporate Governance. *California Management Review (Pre-1986)*, 25(000003), 88.
- Freeman, R., & Mcvea, J. (2001). A Stakeholder Approach to Strategic Management. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.263511>
- Gassmann, O., & Enkel, E. (2004). *Towards a Theory of Open Innovation: Three Core Process Archetypes*.
- Giglio, C., Corvello, V., Coniglio, I. M., Kraus, S., & Gast, J. (2023). Cooperation between large companies and start-ups: An overview of the current state of research. *European Management Journal*, S0263237323000919. <https://doi.org/10.1016/j.emj.2023.08.002>
- Gionfriddo, G., & Piccaluga, A. M. C. (2023). Creating shared value through open innovation: Insights from the case of Enel industrial plants. *Business Ethics, the Environment & Responsibility*, n/a(n/a). <https://doi.org/10.1111/beer.12611>
- Goto, A. (2000). Japan's national innovation system: Current status and problems. *Oxford Review of Economic Policy*, 16(2), 103–113. <https://doi.org/10.1093/oxrep/16.2.103>
- Grama-Vigouroux, S., Saidi, S., Berthinier-Poncet, A., Vanhaverbeke, W., & Madanamoothoo, A. (2020). From closed to open: A comparative stakeholder approach for developing open innovation activities in SMEs. *Journal of Business Research*, 119, 230–244. <https://doi.org/10.1016/j.jbusres.2019.08.016>
- Hagedoorn, J. (1993). Understanding the Rationale of Strategic Technology Partnering: Interorganizational Modes of Cooperation and Sectoral Differences. *Strategic Management Journal*, 14(5), 371–385.
- Haghirian, P. (2022). Japan's employment system and human resource management – coping with increasing adjustment pressures. *Contemporary Japan*, 34(1), 3–12. <https://doi.org/10.1080/18692729.2022.2031506>
- Hair, J. F., Wolfinbarger, M., Money, A. H., Samouel, P., & Page, M. J. (2015). *The essentials of business research methods* (Third edition). Routledge.
- Hall, J., & Vredenburg, H. (2003). The Challenges of Innovating for Sustainable Development. *MIT Sloan Management Review*. <https://sloanreview.mit.edu/article/the-challenges-of-innovating-for-sustainable-development/>



- Hermundsdottir, F., & Aspelund, A. (2021). Sustainability innovations and firm competitiveness: A review. *Journal of Cleaner Production*, 280, 124715. <https://doi.org/10.1016/j.jclepro.2020.124715>
- Hirasaka, M., Kusaka, Y., & Brogan, J. (2021). Japanese style management in eras of change: New management model. *SN Business & Economics*, 1(6), 85. <https://doi.org/10.1007/s43546-021-00087-0>
- Hong, P. C., Wang, K., Zhang, X., & Park, Y. (2017). Trend analysis of Global Fortune 500 firms: A comparative study of Chinese and Japanese firms. *Benchmarking: An International Journal*, 24(1), 50–61. <https://doi.org/10.1108/BIJ-12-2014-0110>
- Howaldt, J., & Schwarz, M. (2010). *Social Innovation: Concepts, research fields and international trends*. <https://www.semanticscholar.org/paper/Social-Innovation-%3A-Concepts-%2C-research-fields-and/73843671651b23a2bce86c29ff34214765866b53>
- Ikeda, K., Marshall, A., & Okamura, S. (2016). Four steps to re-ignite Japan's innovation leadership. *Strategy & Leadership*, 44(6), 35–45.
- Jesus, G. M. K., & Jugend, D. (2021). How can open innovation contribute to circular economy adoption? Insights from a literature review. *European Journal of Innovation Management*, 26(1), 65–98. <https://doi.org/10.1108/EJIM-01-2021-0022>
- Khurshid, H., & Snell, R. S. (2022). Examining distinctions and relationships between Creating Shared Value (CSV) and Corporate Social Responsibility (CSR) in Eight Asia-based Firms. *Asian Journal of Business Ethics*, 11(2), 327–357. <https://doi.org/10.1007/s13520-022-00153-2>
- Kimpimäki, J.-P., Malacina, I., & Lähdeaho, O. (2022). Open and sustainable: An emerging frontier in innovation management? *Technological Forecasting and Social Change*, 174, 121229. <https://doi.org/10.1016/j.techfore.2021.121229>
- Klewitz, J., & Hansen, E. G. (2014). Sustainability-oriented innovation of SMEs: A systematic review. *Journal of Cleaner Production*, 65, 57–75. <https://doi.org/10.1016/j.jclepro.2013.07.017>
- Kline, D. (2003). Sharing the Corporate Crown Jewels. *MIT Sloan Management Review*, 44(3), 89–93.
- Lantos, G. P. (2001). The boundaries of strategic corporate social responsibility. *Journal of Consumer Marketing*, 18(7), 595–632. <https://doi.org/10.1108/07363760110410281>
- Lantos, G. P. (2002). The ethicality of altruistic corporate social responsibility. *The Journal of Consumer Marketing*, 19(2/3), 205. <https://doi.org/10.1108/07363760210426049>
- Lee, S., Park, G., Yoon, B., & Park, J. (2010). Open innovation in SMEs – An inter-mediated network model. *Research Policy*, 39(2), 290–300. <https://doi.org/10.1016/j.respol.2009.12.009>
- Lichtenthaler, U., Ernst, H., & Hoegl, M. (2010). Not-Sold-Here: How Attitudes Influence External Knowledge Exploitation. *Organization Science*, 21(5), 1054–1071.
- Lincoln, J. R. (1989). Employee Work Attitudes and Management Practice in the U.S. and Japan: Evidence from a Large Comparative Survey: California

- Management Review. *California Management Review*, 32(1), 89–106. <https://doi.org/10.2307/41166736>
- Lin-Hi, N. (2010). The problem with a narrow - minded interpretation of CSR: Why CSR has nothing to do with philanthropy. *Ramon Llull Journal of Applied Ethics*, 1. <https://www.proquest.com/docview/1734739682/abstract/41DA0776B4CD475CPQ/1>
- Lippolis, S., Ruggieri, A., & Leopizzi, R. (2023). Open Innovation for sustainable transition: The case of Enel “Open Power”. *Business Strategy and the Environment*, n/a(n/a). <https://doi.org/10.1002/bse.3361>
- Madanaguli, A., Dhir, A., Talwar, S., Clauss, T., Kraus, S., & Kaur, P. (2023). Diving into the uncertainties of open innovation: A systematic review of risks to uncover pertinent typologies and unexplored horizons. *Technovation*, 119, 102582. <https://doi.org/10.1016/j.technovation.2022.102582>
- McGahan, A. M., Bogers, M. L. A. M., Chesbrough, H., & Holgersson, M. (2021). Tackling Societal Challenges with Open Innovation. *California Management Review*, 63(2), 49–61. <https://doi.org/10.1177/0008125620973713>
- Menghwar, P. S., & Daood, A. (2021). Creating shared value: A systematic review, synthesis and integrative perspective. *International Journal of Management Reviews : IJMR*, 23(4), 466–485. <https://doi.org/10.1111/ijmr.12252>
- Munro, V. (2020). Innovation, Entrepreneurship, and Solving Wicked Challenges through CSR and CSV. In *CSR for Purpose, Shared Value and Deep Transformation* (pp. 161–201). Emerald Publishing Limited. <https://doi.org/10.1108/978-1-80043-035-820200008>
- Narula, R. (2004). R&D collaboration by SMEs: New opportunities and limitations in the face of globalisation. *Technovation*, 24(2), 153–161. [https://doi.org/10.1016/S0166-4972\(02\)00045-7](https://doi.org/10.1016/S0166-4972(02)00045-7)
- Oeij, P. R. A., Van Der Torre, W., Vaas, F., & Dhondt, S. (2019). Understanding social innovation as an innovation process: Applying the innovation journey model. *Journal of Business Research*, 101, 243–254. <https://doi.org/10.1016/j.jbusres.2019.04.028>
- Ozuem, W., Willis, M., & Howell, K. (2022). Thematic analysis without paradox: Sensemaking and context. *Qualitative Market Research: An International Journal*, 25(1), 143–157. <https://doi.org/10.1108/QMR-07-2021-0092>
- Pfitzer, M., Bockstette, V., & Stamp, M. (2013). Innovating for Shared Value. *Harvard Business Review*, 91(9), 100–107.
- Phills, J., deiglmeier, K., & Miller, D. (2008). Rediscovering Social Innovation. *Stanford Soc. Innov. Rev.*, 6.
- Porter, M. E. (2021). *The Changing Role of Business in Society*.
- Porter, M. E., & Kramer, M. R. (2006). Strategy & Society: The Link Between Competitive Advantage and Corporate Social Responsibility. *Harvard Business Review*, 84(12), 78–92.
- Porter, M. E., & Kramer, M. R. (2011). Creating Shared Value. *Harvard Business Review*, 89(1/2), 62–77.
- Pudelko, M. (2006). The seniority principle in Japanese companies: A relic of the past? *Asia Pacific Journal of Human Resources*, 44(3), 276–294. <https://doi.org/10.1177/1038411106069412>

- Purba, A. S. (2020). Meaningful practice creating shared value as a contribute to sustainable development goals: Case study at Pt Pupuk Kaltim. *International Journal of Research in Business and Social Science*, 9(7), 222–232. <https://doi.org/10.20525/ijrbs.v9i7.934>
- Qu, S. Q., & Dumay, J. (2011). The qualitative research interview. *Qualitative Research in Accounting & Management*, 8(3), 238–264. <https://doi.org/10.1108/11766091111162070>
- Rauter, R., Globocnik, D., Perl-Vorbach, E., & Baumgartner, R. J. (2019). Open innovation and its effects on economic and sustainability innovation performance. *Journal of Innovation & Knowledge*, 4(4), 226–233. <https://doi.org/10.1016/j.jik.2018.03.004>
- Rodríguez-Ferradas, M. I., Bohemia, E., & Canik, Y. (2020). Startups' open innovation journeys with large companies: A multiple case study. *UCJC Business and Society Review*, 67, 52–79. <https://doi.org/10.3232/UBR.2020.V17.N3.02>
- Roszkowska-Menkes, M. T. (2018). Integrating strategic CSR and open innovation. Towards a conceptual framework. *Social Responsibility Journal*, 14(4), 950–966. <https://doi.org/10.1108/SRJ-07-2017-0127>
- Sağ, S., Sezen, B., & Güzel, M. (2016). Factors That Motivate or Prevent Adoption of Open Innovation by SMEs in Developing Countries and Policy Suggestions. *Procedia - Social and Behavioral Sciences*, 235, 756–763. <https://doi.org/10.1016/j.sbspro.2016.11.077>
- Sandberg, B., & Aarikka-Stenroos, L. (2014). What makes it so difficult? A systematic review on barriers to radical innovation. *Industrial Marketing Management*, 43(8), 1293–1305. <https://doi.org/10.1016/j.indmarman.2014.08.003>
- Sanjari, M., Bahramnezhad, F., Fomani, F. K., Shoghi, M., & Cheraghi, M. A. (2014). Ethical challenges of researchers in qualitative studies: The necessity to develop a specific guideline. *Journal of Medical Ethics and History of Medicine*, 7, 1–6.
- Spender, J.-C., Corvello, V., Grimaldi, M., & Ripa, P. (2017). Startups and open innovation: A review of the literature. *European Journal of Innovation Management*, 20(1), 4–30. <https://doi.org/10.1108/EJIM-12-2015-0131>
- Spithoven, A., Vanhaverbeke, W., & Roijackers, N. (2013). Open innovation practices in SMEs and large enterprises. *Small Business Economics*, 41(3), 537–562. <https://doi.org/10.1007/s11187-012-9453-9>
- Steg, L., Bolderdijk, J. W., Keizer, K., & Perlaviciute, G. (2014). An Integrated Framework for Encouraging Pro-environmental Behaviour: The role of values, situational factors and goals. *Journal of Environmental Psychology*, 38, 104–115. <https://doi.org/10.1016/j.jenvp.2014.01.002>
- The Japan Institute of Labour (n.d.). *Guide to Human Resource Management -Comparative HRM between Japan and the US-*. Retrieved 12 March 2024, from [https://www.jil.go.jp/english/archives/library/documents/hrm\\_jp.pdf](https://www.jil.go.jp/english/archives/library/documents/hrm_jp.pdf)

- Usman, M., & Vanhaverbeke, W. (2017). How start-ups successfully organize and manage open innovation with large companies. *European Journal of Innovation Management*, 20(1), 171–186. <https://doi.org/10.1108/EJIM-07-2016-0066>
- Varadarajan, R. (2017). Innovating for sustainability: A framework for sustainable innovations and a model of sustainable innovations orientation. *Journal of the Academy of Marketing Science*, 45(1), 14–36. <https://doi.org/10.1007/s11747-015-0461-6>
- Vermeir, I., & Verbeke, W. (2006). Sustainable Food Consumption: Exploring the Consumer “Attitude – Behavioral Intention” Gap. *Journal of Agricultural and Environmental Ethics*, 19(2), 169–194. <https://doi.org/10.1007/s10806-005-5485-3>
- Vollenbroek, F. A. (2002). Sustainable development and the challenge of innovation. *Journal of Cleaner Production*, 10(3), 215–223. [https://doi.org/10.1016/S0959-6526\(01\)00048-8](https://doi.org/10.1016/S0959-6526(01)00048-8)
- Weiblen, T., & Chesbrough, H. W. (2015). Engaging with Startups to Enhance Corporate Innovation. *California Management Review*, 57(2), 66–90. <https://doi.org/10.1525/cmr.2015.57.2.66>
- Welch, C., & Piekkari, R. (2006). Crossing language boundaries: Qualitative interviewing in international business. *Management International Review*, 46(4), 417–437. <https://doi.org/10.1007/s11575-006-0099-1>
- West, J., & Gallagher, S. (2006). Challenges of open innovation: The paradox of firm investment in open-source software. *R&D Management*, 36(3), 319–331. <https://doi.org/10.1111/j.1467-9310.2006.00436.x>
- Yamamoto, K., & Lloyd, R. A. (2019). Ethical Considerations of Japanese Business Culture. *The Journal of Business Diversity*, 19(2), 113–122.
- Yang, T.-K. (2020). The Corporate Shared Value for Sustainable Development: An Ecosystem Perspective. *Sustainability (Basel, Switzerland)*, 12(6), 2348–. <https://doi.org/10.3390/su12062348>
- Yilmaz, K. (2013). Comparison of Quantitative and Qualitative Research Traditions: Epistemological, theoretical, and methodological differences. *European Journal of Education*, 48(2), 311–325. <https://doi.org/10.1111/ejed.12014>

## APPENDICES

### Appendix I: (1) interview questions with experts

#### Level 1: Background information

- 1) Could you tell me your name?
- 2) Which company do you work for?
- 3) What is your current position in the company?
- 4) How do you facilitate open innovation in your role?

#### Level2: Sustainable open innovation

- 5) Why open innovation is important in today's business?
- 6) How have grand sustainability challenges like climate change influenced open innovation landscape? (e.g., the number increased)
- 7) What emerging trends do you see in open innovation? (e.g., collaboration between startups and larger firms, NGOs, university)
- 8) Do you find open innovation as an effective strategy for addressing sustainability challenges? Yes? or No? Why?
- 9) What do you think is the common challenge Japanese companies face when engaging in open innovation?
  - a. What negative perceptions prevent practitioners from engaging in open innovation?
  - b. What do you think is the solution for them?
- 10) Are there any situations where companies decided not to apply open innovation? If so, why?
- 11) Are there any differences in challenges when sustainability is involved? (e.g., different perceptions on sustainability, keeping costs under control)
- 12) What opportunities do you see in the adoption of open innovation for addressing sustainability challenges?

#### Level3: Shared Value

- 13) What do you know about CSV? (if the interviewee does not what it means, ask them what they think it means and help them understand the concept)
- 14) In your view, how does open innovation add value to the business as well as to society?

## Appendix I: (2) interview questions with firms

### Level 1: Background information

- 1) Could you tell me your name?
- 2) Which company do you work for?
- 3) What is your current position in the company?
- 4) How do you engage in open innovation in your role?

### Level2: Sustainable open innovation

- 5) How do you perceive open innovation?
- 6) Do you think open innovation is essential to tackle sustainability challenges? Yes or No. Why?
- 7) Could you give me the details of open innovation activities you have engaged or are engaging in?
- 8) What challenges did you face in the process?
- 9) Are there any different challenges when sustainability is addressed?
- 10) What opportunities do you see in the adoption of open innovation for addressing sustainability challenges?

### Level3: Shared Value

- 11) What do you know about CSV? (if the interviewee does not what it means, ask them what they think it means and help them understand the concept)
- 12) In your view, how does open innovation add value to the business as well as to society?

## Appendix II

### Confidentiality Agreement

Hi, my name is Akari, and I am doing my Master's degree in Corporate Environmental Management at the University of Jyväskylä.

I am studying the role of open innovation for creating shared value for my Master's thesis research and conducting interviews as part of it.

I thank you for your willingness to participate in this research project. Just before we start the interview, please take note of the following:

- 1) Your participation in this interview is entirely voluntary.
- 2) You are free to refuse to answer any question at any time.
- 3) You are free to withdraw from the interview at any time.
- 4) This interview will be treated with the upmost confidentiality and will not be shared with any organization.
- 5) Excerpts from this interview may be incorporated into the final research project. However, under no circumstances will your name or identifying characteristics be included in the report.

By signing below, you acknowledge that you have read and understood the terms outlined above.

**Participant's signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_