OpenForests:
How to scale a social business hybrid to support sustainable landscape projects?

Marwin Müller

Dissertation written under the supervision of professor Tommaso Ramus

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Abstract

This thesis explores what strategies social business hybrids should adopt to overcome challenges in scaling their business. To answer this question, I selected the social business hybrid OpenForests, a startup that supports sustainable landscape projects, for an inductive case study and gathered information by conducting interviews and collecting external data. The results revealed that OpenForests faces three major challenges in human resources, external funding, and performance management. Based on research on social enterprises and hybrid organizations, I developed the following proposed solutions: OpenForests should adopt different hiring approaches depending on the job role and its relationship to the organization's dual goals, seek an impact investor for external funding based on matching profit and impact aspirations, and adopt new commercial and impact KPIs to streamline and monitor its financial and environmental performance. The findings contribute to a better and deeper understanding of the challenges social business hybrids face in scaling their business and propose possible solutions.

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Author: Marwin Müller

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Resumo

Esta dissertação explora quais as estratégias que os negócios sociais híbridos devem adotar para fazer face aos desafios provenientes do crescimento organizacional. Para responder a esta questão, a start-up OpenForests que apoia o desenvolvimento de projetos paisagísticos sustentáveis e que é reconhecida como pelo seu negócio social híbrido, foi selecionada para um estudo de caso que se rege ao método indutivo. Para suportar esta análise, os dados recolhidos através de entrevistas e dados externos. Os resultados revelam que a OpenForests enfrenta três grandes desafios que abrangem os recursos humanos, financiamento externo e gestão de desempenho. Tendo em conta a investigação sobre empresas sociais e organizações híbridas, a OpenForests deverá adotar as seguintes soluções: diferentes abordagens de contratação em função do cargo do trabalhor e da relação com o duplo propósito da organização; procurar um investidor de impacto para financiamento externo baseado na combinação de aspirações de lucro e impacto; e a adoção de novos KPI do processo comercial e de impacto para racionalizar e monitorizar os resultados financeiros e ambientais. As conclusões contribuem para uma melhor e mais profunda compreensão dos desafios que os negócios sociais híbridos enfrentam na otimização do seu desempenho e a recomendação de possíveis soluções.

Título: OpenForests: Como otimizar o desempenho de organizações híbridas no apoio ao desenvolvimento de projetos paisagísticos sustentáveis?

Autor: Marwin Müller

Palavras-Chave: Negócio Social Híbrido, Empresa Social, Organização Híbrida, Empreendedorismo Social, Inovação Social, Empreendedorismo, Sustentabilidade, Ambiente, Reflorestação, Imagens Aéreas, Dados de Satélite, Transparência

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1. Introduction

"Forests are increasingly recognized for their role as a nature-based solution to many sustainable development challenges [...]. We must build on this momentum to catalyse bold actions to prevent, halt and reverse the loss of forests and their biodiversity, for the benefit of current and future generations." – Food and Agriculture Organization of the United Nations, 2020, p.28

Forests cover 31 percent of the global land area, store hundreds of gigatons of carbon, and harbor most of the Earth's terrestrial biodiversity (European Commission, 2019). However, deforestation continues to occur at alarming rates: Since 1990, an estimated 420 million hectares of forest have been lost to conversion to other land uses. At the same time, new forests are being established through natural expansion or deliberate efforts in other areas. Nevertheless, in absolute terms, the global forest area decreased by 178 million hectares between 1990 and 2020, an area equivalent to Libya. As a result, the world is not on track to meet the United Nations Strategic Plan for Forests to increase forest area by 3 percent by 2030 (Food and Agriculture Organization of the United Nations, 2020).

In 2019, the Crowther Lab of ETH Zurich published a study in the journal Science that revealed that restoring trees is one of the most effective strategies for mitigating climate change. The researchers found room for an additional 900 million hectares of canopy cover, which could store 205 gigatons of carbon in areas that would naturally support forests (Bastin et al., 2019). Various initiatives such as the Bonn Challenge (2021) and the United Nations New York Declaration on Forests (2021) set global targets for the reforestation of 150 million hectares and 350 million hectares of degraded land by 2020 and 2030, respectively. However, according to the Food and Agriculture Organization of the United Nations (2020), progress to date has been slow.

One of the main reasons for the insufficient number of reforestation projects is the lack of funding. To meet the goals of the Bonn Challenge and the New York Declaration on Forests, 359 billion dollars and 837 billion dollars (36 billion and 49 billion per year) are needed (Food and Agriculture Organization of the United Nations, 2015). In 2016, Credit Suisse and McKinsey estimated that only 52 billion dollars per year, the majority of which is public funding, has been committed to all global biodiversity projects, of which those for forests are only one component (Huwyler et al., 2016). Besides global initiatives, private and institutional investors are also engaged in forestry projects, but only at a low level, which is one reason for the funding shortage. According to a World Bank report, the challenges of investing in forestry are significant.

Forestry is a complex, specialized asset class, and the lack of data raises concerns among investors (Binkley et al., 2021). In the past, this lack of data and transparency facilitated scandals such as in the Netherlands, when several hundred million euros were invested in teak funds that went bankrupt in the 1990s (Dohms, 2014), or in Switzerland, where investors lost approximately 60 million Swiss francs in 2006 (Schilliger, 2006). Another threat to reforestation is illegal deforestation. Studies showed that the vast majority of logging in Brazil was illegal carried out by ranchers, loggers, and land grabbers seeking to profit from exploiting public forest lands (Escobar, 2020).

In summary, the importance of reforestation projects must increase in the future to achieve international reforestation goals and thus counteract climate change. However, reforestation projects currently face the challenge of heavy illegal logging and insufficient funding, partly due to their complexity and lack of data.

This thesis examines the social business hybrid (SBH) OpenForests, which was founded in 2011 and aims to make a significant contribution towards more transparent, effective, and sustainable reforestation projects. OpenForests' main product is explorer.land, a map-based presentation platform that enables forestry projects to transparently communicate their progress to stakeholders using satellite and drone data. Through these aerial images, investors and donors can track how successful their contributions are in helping to restore bare land. Ultimately, explorer.land strives to empower forestry projects with this new level of visibility and transparency to improve market access, accelerate networking and help build trusting relationships with stakeholders. In recent months, the number of interested parties and customers of explorer.land has increased significantly. In addition to numerous small projects, OpenForests acquired large organizations such as WeForest and WWF as new customers. Currently, OpenForests faces challenges in meeting this increasing demand with its limited resources while at the same time leveraging the existing growth opportunities.

This master thesis addresses the following research question: What strategies should a social business hybrid adopt to scale up its business? To answer this research question, I focus on four teaching questions:

1. To which type of social business hybrid model does explorer.land belong?
2. Which approaches should OpenForests adopt to hire new employees?
3. Which funding source is most suitable for OpenForests?
4. What additional performance measures should OpenForests implement?

The structure of the work is as follows: the second chapter presents the case study, the third contains the literature review, and the fourth describes the teaching note. Finally, a conclusion, as well as limitations and further research opportunities, are presented.

The literature review provides an introduction to the definitions, characteristics, and general challenges of SBH. Based on this, specific challenges of hybrid organizations in human resources, external funding, and performance management and approaches to overcome them are described. In order to identify the most suitable solutions for OpenForests, a typology of hybrid models and practices for managing these different types of organizations are outlined.

The teaching note is designed for a class discussion in which students analyze the research and teaching questions to develop customized solutions for OpenForests. Recommendations include hiring two employees for the business areas with the greatest need and appropriate hiring approaches, focusing on impact investors when seeking external capital, and introducing new commercial and impact KPIs.

The conclusion summarizes the main challenges and the related proposed solutions for OpenForests and addresses limitations and further research opportunities.

In terms of a theoretical sampling strategy to develop the case study, I elected to focus on OpenForests as a SBH in the startup stage with challenges in scaling its business. I collected primary data through open-ended and semi-structured interviews with Dr. Patrick Ribeiro, co-founder and CEO of OpenForests, and internal and publicly available secondary data. In total, I conducted eight in-person interviews and video calls with Ribeiro between December 2020 and May 2021, which lasted between one and two hours. I gathered data using a three-step recursive strategy (Ramus et al., 2017). In the first phase, I completed the first three interviews with Ribeiro to gain a basic understanding through general questions about the organization's functioning, challenges, and opportunities (Patton, 2002). Namely, I asked questions about the organization's history, mission, services, and future goals. During this phase, I collected additional data from public sources such as reports, articles, and websites about OpenForests and its partners and tested the explorer.land platform to gain an external perspective on the organization. These data were helpful in triangulating the information gathered through interviews and mitigating the effect of possible recall bias (Alvesson, 2003). In the second phase, during the three interviews that followed, I explored the challenges posed by OpenForests' increased growth more specifically. In doing so, I identified key challenges in human resources, external funding, and performance management. In the third step, I collected new data in the last two

interviews that focused on potential solutions to address these challenges, and we analyzed internal quantitative data together. Table 1 illustrates the primary and secondary data research for the case study.

Table 1 - Primary and secondary data of the case study

Data collected	
Interviews with OpenForests	8
Internal sources of Open Forests	3
Publicly available sources about OpenForests	11
Publicly available sources about partners of OpenForests	17
Publicly available sources about reforestation projects	14

I divided the data analysis into three phases, moving iteratively between the data and the relevant literature (Miles & Huberman, 1994). In the first phase, I conducted an inductive analysis of the data to understand the overall challenges OpenForests faces. In this way, I identified three main challenges in human resources, external funding, and performance management. In the second step, I compared OpenForests' challenges with research on social enterprises and hybrid organizations (Battilana et al., 2012; Pache & Santos, 2013; Saebi et al., 2019; Santos et al., 2015). In doing so, I found that other hybrid organizations faced similar challenges and that these are related to some underlying tensions of the hybrid structure (Battilana & Dorado, 2010; Ebrahim & Rangan, 2014; Santos et al., 2015). In the final step, I abductively reanalyzed the information to gain a deeper theoretical understanding of the data. Based on this, I developed the teaching note to provide a reasoned solution to the identified challenges.

2. Case Study

2.1. Introduction

The year 2021 seems promising for Patrick Ribeiro: The social business hybrid he co-founded in 2011, OpenForests, should finally take off after years of research, adaption, and pivoting. OpenForests' main product is explorer.land, a presentation platform that allows forestry projects to transparently communicate their progress to their stakeholders using high-resolution maps. In June 2021, WWF, one of the world's largest environmental organizations, will make the impact of reforestation projects of its Forests Forward campaign publicly available on explorer.land (WWF, 2020). In addition, the organization WeForest, which has already planted over 32 million trees for clients such as Nike, Accenture, and DHL, has been migrating its projects to explorer.land since January 2021 (WeForest, 2021). Besides these key accounts, the number of smaller customers as well as interested parties of the explorer.land platform has been rising steadily for months.

Based on these recent developments, Ribeiro could be satisfied with the situation of OpenForests. However, he still feels kind of tense: The OpenForests team consists of only five full-time employees, including Ribeiro and his two co-founders, and the company's financial resources are still limited. Is OpenForests able to capitalize on this momentum to succeed in the coming months and grow even stronger in the future?

2.2. Background

Before founding OpenForests in 2011, the three founders Patrick Ribeiro, Alexander Watson, and Stefan Haas, had different backgrounds. Ribeiro grew up in Portugal and moved to Germany in 1996 to study physics in Aachen, followed by a Ph.D. in Dresden, which began in 2003. Watson also moved to Dresden in 2003 to study forestry science in Tharandt near Dresden. The two met in 2004 through playing music together and have been friends ever since.

After completing his Ph.D. in 2008, Ribeiro worked as a research assistant in Dresden. Nevertheless, he could not see his direct positive impact in fundamental physics research and ended that career. Instead, he dedicated himself entirely to his passion for sustainability and founded the Umundu Festival in Dresden in 2009 to educate people about living more sustainably. Thirteen years later, the festival was awarded by the German government and attracts thousands of visitors every year (Umundu-Team, 2021). Ribeiro even brought the Umundu concept to

Lisbon (Festival Umundu Lx, 2020). Soon as the festival was up and running, Ribeiro wanted to channel his enthusiasm into supporting vulnerable rural areas and grassroots initiatives. However, he lacked the right idea on how to get started.

After graduating, Watson moved to Bonn in late 2007 to start working for a forestry investment company. Haas studied geoecology in Karlsruhe and started working for the same employer in January 2010. Their task was to conduct forest inventories, evaluate forestry projects and establish forest information management systems in Central America and Southeast Asia. They began full of optimism and were motivated by the idea of reforesting degraded land with mixed forest systems. But the simplicity of this idea collided with the complex reality. They quickly experienced what can go wrong with foreign investment in developing countries. For example, there is so-called green leakage, where farmers sell their land for reforestation and use the proceeds to buy and clear another piece of rainforest. They then sell the cleared land back to green investors for reforestation. In addition, Watson and Haas witnessed mismanagement and fraud when funded tree planting did not occur or poor management practices resulted in high tree mortality. Ultimately, they were frustrated with how investor-financed reforestation could lead to negative social and environmental impacts (Watson et al., 2020).

In 2010, in a tiny kitchen late at night, Watson, Haas, and Ribeiro discussed their concerns about the unique and fragile ecosystem being harmed by such forestry practices and deforestation in general. Scientific figures showed that forests covered 31 percent of the global land area (European Commission, 2019), but this area decreased by 130 million hectares between 1990 and 2010, an area equivalent to three times the size of Switzerland (Food and Agriculture Organization of the United Nations, 2020; The World Bank Group, 2018). Usually, after such discussions, they swallowed their idealism with a cup of coffee the following day and went back to business as usual. This time it was different: none of them wanted to return to their old lives. Ribeiro ended his engagement at the Umundu Festival, and Watson and Haas quit their regular jobs. They wanted to start their own business with true environmental sustainability at its core. In the beginning, they had no business plan, no startup experience, and no investors. All they had was a shared belief that they needed to challenge the status quo. The founders remembered, "We understood and agreed that forests are a key to a future worth living in. And we wanted this future for us, our friends, family, and for generations to come! We wanted to do it better and leverage our positive impact!" (Watson et al., 2020).

2.3. Environmental Mission

The three founders started OpenForests in early 2011 as a social business hybrid of like-minded friends. They planned to use their professional and academic experiences to create a forestry consulting company to have a long-lasting impact on the environment. Their goal is to empower people to connect with nature and make more biodiverse, sustainable, social, and resilient forest projects. The founders wanted to create radical transparency for all stakeholders. Almost ten years later, they have written down in their manifesto how they envision this better future:

> *"We believe that another world is possible. A world where human and nonhuman beings flourish alongside each other. A world where people are not masters of but part of what we call nature. For this to happen, we need a collective change of consciousness and to rebuild connectedness with the diversity of all life. […] Trees will not just provide an ecosystem service or be just a carbon credit in an imbalanced and destructive capitalist system. Trees will be giving life both literally and metaphorically. […] We also need to change how forest investment, restoration, and conservation organizations do 'business.'. […] A first step towards this is full disclosure and transparency of nature interventions and open communication with all groups involved."* – OpenForests, 2020

To make this vision become a reality, the founders wanted to collaborate with existing projects to increase their impact instead of starting own reforestation projects. They were convinced that they would have greater leverage if they utilized their expertise to make forestry projects more sustainable by using innovative and efficient technologies.

In the last decade, the importance of OpenForests' environmental mission is increasingly reflected in scientific figures and global initiatives. In 2019, scientists at ETH Zurich found that reforestation is one of the most effective ways to combat climate change (Bastin et al., 2019), and initiatives such as the Bonn Challenge (2021) and the United Nations New York Declaration (2021) committed to reforesting in total 500 million hectares of forest.

2.4. Early Years

In the beginning, the founders experimented with a variety of services and products in a trial-and-error process. At the time, the very first drones were coming onto the market as niche DIY products. The founders had the idea to use this new technology for aerial photography and to sell this service to forestry projects. Through the combined use of satellite and drone data, OpenForests enabled forestry projects to illustrate their progress to their stakeholders in a very

transparent and visually appealing way (see Figure 1). Moreover, the forestry projects could use aerial imagery internally for more accurate and cost-effective monitoring of their lands. In addition, the founders realized that many forestry projects lacked visibility, which hindered them in communicating with key stakeholders or attracting new investors. By implementing and integrating drone footage and web maps on clients' websites, OpenForests helped forestry projects to improve their reach and presence.

Figure 1 - Time series satellite imagery of a forestry project (Watson, 2021)

Over the years, OpenForests has developed a portfolio of services and software products covering the entire information chain, consisting of data collection, analysis, and visualization of projects, primarily through drone and satellite data. These services sought to make forestry projects more sustainable and efficient by enhancing transparency, monitoring, and visibility. OpenForests has always had clients of varying sizes – mostly small NGOs, grassroots initiatives, and a few large organizations. Watson explained, "What inspired us to start OpenForests was the idea that by building and providing efficient tools to those 'smaller' actors, we could contribute in a substantial way to improve the sustainability performance and competitiveness of these projects. Taking into consideration that the fraction of the world population living in rural areas still amounts to 45 percent, we see a big need and potential to contribute" (2018). All these consulting projects were very specific, staff-intensive, and therefore hardly scalable. The team recalled, "The impact of our work appeared marginal. We understood that we needed and wanted to scale our approach to address systemic destruction and to enable more people to make better forest projects" (Watson et al., 2020).

From a financial perspective, running OpenForests was a challenge for the three first-time founders. OpenForests is a for-profit company, and the three founders had to make a living from their new full-time jobs. The initial funding was a few thousand euros of equity from the

founders without any investor. The primary source of income was providing consulting services, and they were usually paid on an hourly basis. Hence, the business model depended on the number of projects and the clients' willingness to pay. Watson noted, "Our goal is to support and work with small to medium-sized forestry and conservation projects which have a severe need for more professional information solutions. At the same time, these projects often run on a little budget. It has been a big challenge to overcome this financial bottleneck" (2018). Ribeiro added, "In our ten-year history, we have been close to bankruptcy several times. Once we did not even have enough money to pay our small salaries, which is why two of us had to declare ourselves unemployed temporarily".

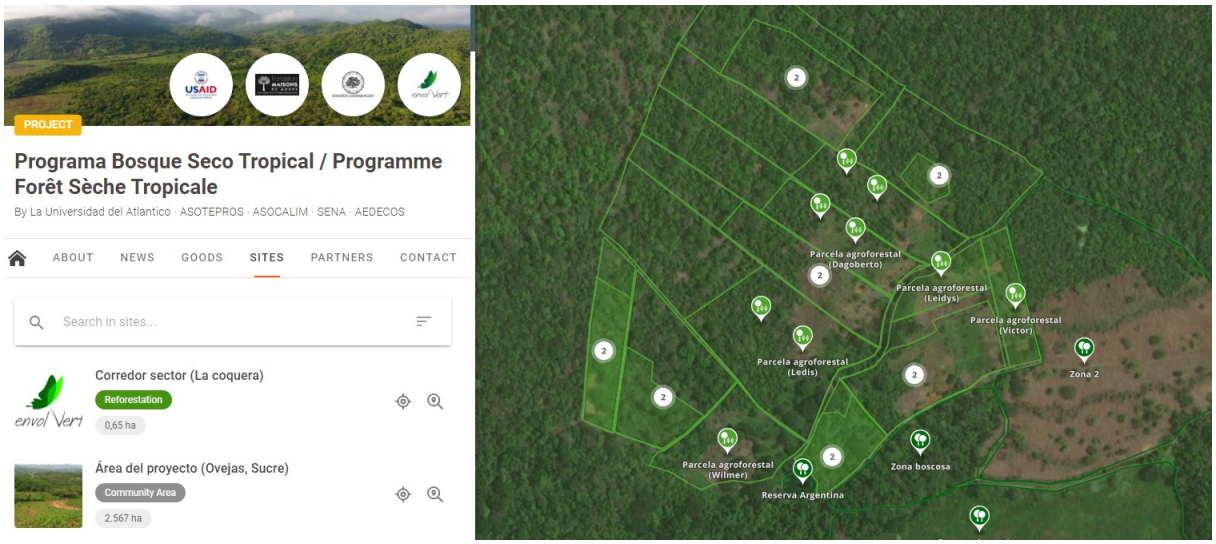
To achieve better financial stability and more significant impact, the founders intended to transform OpenForests' business model from a project-specific business to a scalable platform model. Watson explained, "A solution to this challenge has been the development of standardized information solutions which our clients can use at an affordable cost" (2018). Instead of offering consulting services with hourly compensation, they wanted to develop software that thousands of projects worldwide could use after programming. Creating a platform should ultimately lead to a win-win-win situation, which promises higher impact, higher profits, and lower costs for the clients. The founders already had this idea at the beginning of OpenForests, but they lacked the resources to invest the initial effort. In 2018, when OpenForests built up a financial cushion through several profitable projects, the founders decided to take the next step to develop a platform. They were even more motivated when their former partner Fairventures Worldwide (2021) won the audience award of the Google Impact Challenge 2018, where OpenForests helped to develop the awarded tree tracking solution (Google.org, 2018). This was a strong signal of the market's need and interest in aerial image-based solutions for forestry projects. OpenForests hired two software developers to create a new platform: explorer.land.

2.5. explorer.land

explorer.land is an online platform for presenting sustainable forest and landscape projects. It is built around an interactive web map that integrates high-resolution and up-to-date satellite and drone imagery and georeferenced news posts (see Figure 2). It allows members to communicate the story of landscape projects transparently and build trust with stakeholders. explorer.land aims to democratize access to mapping, monitoring, and storytelling tools at a low cost to any forestry project. Historical satellite imagery can be used, for example, to document and display the growth of forest areas over time (see Figure 1). In summary, a large part of

OpenForests existing services has been bundled and combined in a novel way on explorer.land enabling users to self-administer their projects via online tools. After the platform's release, the United Nations Knowledge Hub featured explorer.land in an article, which was the first acknowledgment of their new strategy (UNCCD Knowledge Hub, 2018).

Figure 2 - Map-based project presentation on explorer.land (2021)



To use explorer.land, forestry projects pay a monthly fee through a subscription model. There are four membership models, depending on size and need (see Appendix 1). There is a free version with a limited range of functions, a starter and standard version with more functions for 50 and 250 euros per month respectively, and a premium package with individual prices for large customers. In addition, there are also several custom arrangements for special customers. Ribeiro commented, "We also receive requests from forestry projects that cannot currently afford our services. If we believe in their ecological added value, we find individual solutions. For some projects, we postpone payment until they can manage it. One project paid our annual fee in the form of sustainably produced hammocks produced on the area presented".

As of February 2021, explorer.land had 365 users from 126 organizations who have created 236 projects. Within the last twelve months, explorer.land had doubled users, organizations, and projects (see Appendix 2). The substantial increase in the number of customers was also apparent in the revenue figures. explorer.land generated a turnover of 24,000 euros in 2019. In the following year, 2020, explorer.land was able to earn a revenue of 52,000 euros (see Appendix 3). Despite the strong increase, explorer.land's revenue only accounted for about a quarter of OpenForests' total revenue of 195,000 euros in 2020. The founders' consulting services are still the main source of income for OpenForests (see Appendix 4). For January and February

2021, the acquisition of additional customers, especially the large customers WWF and WeForest, significantly increased the monthly revenue of the explorer.land platform to over 7000 euros (see Appendix 2). This solid quantitative performance is also reflected in the qualitative feedback. Alongside the positive resonance from customers, the number of interested parties and initial inquiries is continuously increasing. Furthermore, OpenForests is in dialogue with other large organizations like the UN and companies like Commonland that would like to integrate their forestry projects on explorer.land (Commonland, 2021; United Nations, 2021). Due to the scalable platform model, OpenForests is theoretically able to serve a high number of customers.

2.6. Growth Plans

OpenForests' primary short-term goal is to attract more customers to the current version of explorer.land and convert prospects and free users to paying customers while providing them with a high-quality service. This includes the acquisition of small NGOs and large customers such as companies or umbrella organizations. The additional revenue will be used to implement more features to improve the platform and enable further product innovations. Ribeiro explained, "An important new feature would be additional independent thematic map layers, such as deforestation or biodiversity layers, just to mention two, which can be applied to assess changes in forest cover due to human intervention. Even if this costs us money and may even scare off potential customers, these layers serve as an additional monitoring tool and create the highest possible level of transparency".

The medium-term goal is to transform explorer.land into a multi-sided platform that integrates sustainable investors and allows them to find and invest in new projects through explorer.land. Increasing demand for sustainable investments drives the motivation for such a model. Ribeiro noted, "We know that explorer.land works for our clients. They get contacted by companies such as Carbon Credit Brokers and larger organizations who want to offset their emissions or who want to conduct impact investments in nature-based solutions". Through a multi-sided platform, forestry projects would benefit through easy and direct access to investors, as it is often difficult to find suitable funding.

The long-term goal of the founders is to lead a paradigm shift in the domain of forestry projects. This ambition is based on two assumptions: through the tamper-proof satellite images, only legitimate and transparent projects will be present on explorer.land. Projects that use greenwashing or fraudulent practices will avoid explorer.land, because otherwise, their flaws would

be disclosed. Ribeiro explained, "In the long run, if more and more stakeholders of forestry projects realize the benefits of explorer.land and demand exactly this level of transparency, explorer.land could establish itself as the new de facto standard for the presentation and monitoring of forestry projects. […] Thus, explorer.land could serve as a catalyst to reward high-quality projects by making it easier for them to find investors and to incentivize projects to improve sustainable practices and enhance transparency". Ultimately, explorer.land could facilitate a high level of transparency across the industry, and all sustainable and transparent forestry projects could benefit from it.

2.7. Scaling Challenges

To realize these objectives, OpenForests still has several challenges to overcome. Currently, the core team only consists of three founders and two full-time software developers. Moreover, there are three freelancers for customer acquisition and communications, who work for OpenForests on a small scale, most of them a few days a month. With this lean setup, the organization is increasingly reaching its limits to perform its day-to-day business. For example, there has already been a short outage of the explorer.land platform due to increased traffic. Ribeiro remembered, "We postponed necessary software refactoring due to more pressing issues and orders, increasing the probability of server problems". This failure was discovered by pure chance, as an alarm system was also not in place at this time. Furthermore, the number of requests from prospects and customers is increasing strongly. These include answering inquiries from potential customers, advising existing customers, and providing support in the case of problems. Since the founders perform these tasks in addition to their other duties, some requests have remained unprocessed for months.

Besides the operational challenges arising from growth, there is more potential for optimization in customer acquisition. This includes retargeting registered customers who are currently using the free model and contacting hundreds of potential customers collected over the years in a long spreadsheet. Although there are many potential paying customers, it is difficult for OpenForests to reach them due to staff shortages. On top of that, there is little performance measurement in customer acquisition. Ribeiro noted, "We do not currently know how much it costs us to acquire a customer, how profitable a customer is, nor which channel is most effective". A similar phenomenon can be observed when approaching potential customers through the three freelancers. Ribeiro added, "Our freelancer Eva works for us only four days a month, but still establishes promising contacts with multinational organizations almost weekly, such as the Dutch Green

Business Group and Global Forests Generation most recently. However, we are not yet in a position to evaluate how exactly the costs are distributed among the potential customers and whether this is ultimately profitable".

Several of these challenges could be solved with more workforce. The company's financial situation is not the only reason why the hiring options are limited. The search for suitable personnel is also difficult. Ribeiro explained, "When looking for new staff, it is important to us that, for example, in software development, they already have the right skillset and need little initial training, which we can hardly provide as a small company. At the same time, it is also fundamental for us that everyone in our small, family-like team shares the same values. This combination is tough to find – regardless of our budget".

Although OpenForests has generated solid revenue over the past two years to pay salaries reliably and build a small liquidity buffer, there is little capital available to achieve fast growth. Therefore, the founders are considering seeking external funding. In the past, OpenForests has already attempted to acquire funding from various sources. They have twice tried to obtain financial support – with no equity taken – through initiatives of the EIT Climate-KIC. EIT Climate-KIC is a knowledge and innovation community funded by the European Union, working to accelerate the transition to a climate-resilient society (EIT Climate-KIC, 2021). Unfortunately, it did not work out both times, although OpenForests came in second place once. Ribeiro recalled, "This was an important confirmation of our general approach and relevance. However, at the end of the day, the process was time-consuming and did not bring us any money". He also spoke with a well-known business angel as part of a workshop organized by EXIST, a program of the German Federal Ministry for Economic Affairs and Energy (2021). The workshop was about developing and improving the business plan. After Ribeiro presented OpenForests, he initially received poor feedback and was ignored for the rest of the afternoon. Ribeiro concluded, "The business angel was only interested in classic commercial business models – our sustainable startup was just something about planting trees for him". Even though the workshop was not about acquiring funding, the disinterest and skepticism of the prominent investor shook the founders.

Although OpenForests has not attempted to acquire capital after these setbacks, the founders are now willing to try again. They are eager to raise funding to unleash the unexploited growth opportunities. Ribeiro explained, "It is essential for us that we find a funder or funders who support our long-term vision and give us enough flexibility to execute the activities we believe will have the greatest impact". However, the founders do not yet know what type of funding

they should address first. The challenge is that different sources require different documentation and processes. Ribeiro noted, "Investors like this business angel were not interested in our environmental mission. They just wanted to know how much profit we will generate in the future". In contrast, funding programs were primarily interested in the impact generated by the platform and its projects, such as how much land was reforested. Ribeiro added, "We do not have these numbers and forecasts right now, and preparing these documents, each with a specific focus, is time and resource consuming. We need an efficient and effective way to find a suitable investor, but we do not know where to start".

2.8. Outlook

Started as a specialized forestry consultancy, OpenForests now offers the explorer.land platform, which provides access to presentation and monitoring tools for small to large forestry projects. explorer.land is perceived with great interest, and there is a strongly growing customer demand that pushes the organization to its limits. To fully unleash explorer.land's potential, growth challenges need to be overcome. In particular, this demands additional staff, which is difficult to obtain due to the profile of requirements and the financial situation. Furthermore, additional capital is needed to finance this growth, but the time-consuming search for the right funding source is challenging due to different requirements, processes, and cultural fit.

3. Literature Review

3.1. Social Enterprises as Hybrid Organizations

In the last decades, social enterprises have increasingly gained the interest of researchers (Dacin et al., 2011; Dees, 2012; Doherty et al., 2014; Pache & Santos, 2013; Saebi et al., 2019) and practitioners (Porter & Kramer, 2011). Social enterprises promise to address complex social and environmental problems through innovative business models (Zahra et al., 2009). These ventures adopt a market-based organizational form to drive positive change in society (Miller et al., 2012; Smith et al., 2013), putting them at the interface between traditional "business" and "charity" models (Battilana & Lee, 2014). Social enterprises seek to capture the best of both worlds: generating value for society and simultaneously developing financially sustainable activities that capitalize on commercial contracts and enable the achievement of scale (Santos et al., 2015). Thus, these organizations combine two competing institutional logics – the market logic and social welfare logic – and are classified as hybrid organizations (Pache & Santos, 2013). In general, institutional logics are self-evident social prescriptions that guide the behavior of actors in fields of action (Friedland & Alford, 1991; Ocasio, 1997; Suddaby & Greenwood, 2005; Thornton, 2004). Given their competing social and market logic, social enterprises might adapt different goals and means to achieve their mission (Pache & Santos, 2010). Santos and colleagues (2015, p. 37) define "social businesses hybrids, often also called social enterprises" as "organizations that run commercial operations with the goal of addressing a societal problem, thus adopting a social or environmental mission".

Given their characteristics, SBHs can be highly successful because they combine the efficiency of commercial business models with the sense of mission of charity (Austin et al., 2006; Smith et al., 2013). However, SBHs are also vulnerable organizations that must maintain a balance between achieving their social mission and market discipline (Santos et al., 2015). Specifically, SBHs that prioritize market performance may jeopardize their commitment to fulfilling their social mission and expose these organizations to mission drift (Battilana et al., 2012; Mair et al., 2012; Ramus & Vaccaro, 2017). Alternatively, SBHs that focus primarily on social performance may struggle to survive to build a business model that ensures the organization's financial viability, leading to potentially harmful outcomes for beneficiaries (Pache & Santos, 2013). Management research has begun to investigate the challenges associated with managing hybrid organizations and has identified some strategies to best address these issues (Battilana & Lee, 2014; Santos et al., 2015).

The following sections present three specific challenges of SBHs and approaches to address them. First, challenges related to human resources and possible solutions are presented, focusing on hiring processes. After that, the challenge of raising capital as well as different types of funding are described. Finally, the challenges of performance management and best practices in SBHs are discussed.

3.2. Management Challenges in Social Business Hybrids

3.2.1. Human Resources

Dealing with multiple institutional logics is challenging for organizations because it may create internal tensions that may result in conflict among organizational members (Glynn, 2000; Heimer, 1999; Zilber, 2002). This is in particular challenging for new types of hybrid organizations because, unlike organizations that embody existing organizational archetypes, new hybrid forms can rely neither on an existing pattern for dealing with the tension between the logics nor on a pool of applicants with experience in doing so (Battilana & Dorado, 2010). In contrast, both businesses and charities can draw on a wide range of candidates with training and experience in either type of organization. The challenge for hybrid organizations is that they usually cannot expect to hire people whose professional backgrounds fit perfectly with their hybrid work context (Ebrahim et al., 2014). Research has shown that tensions and conflicts between logics may decrease as one logic gains dominance over others (Selznick, 1946). These findings suggest that new hybrid organizations are highly unstable and less likely to maintain their hybrid character over time (Scott & Meyer, 1991). The findings of Battilana and Dorado (2010) suggest that a new type of hybrid organization needs to create a shared organizational identity that balances the logics that the organization combines. This kind of identity avoids the formation of subgroup identities within the company.

Moreover, Battilana and Dorado (2010) found that the crucial early levers for developing an organizational identity are hiring policies, which define who can become members of the organization, and socialization policies, which teach and reinforce desired behaviors in new hires. Hybrid organizations might adopt two different hiring approaches: a so-called "mix-and-match" approach and a "tabula rasa" approach. The mix-and-match approach primarily focuses on individual skills and leads to hiring individuals who are carriers of one logic that the organization is trying to combine (Battilana & Dorado, 2010). Although they are not familiar with hybrid work environments, their past work experiences will be relevant to managing some of the tasks

they will be dealing with within hybrids (Ebrahim et al., 2014). The tabula rasa approach, also called apprenticeship approach, emphasizes mainly socializability and prioritizes individuals who are not rooted in either of the combined logics. The mix-and-match approach may empower a new company to grow faster, but it may also create debilitating tensions among subgroups that define themselves in opposition to one another (Dukerich et al., 1998; Elsbach, 1999), and it is, therefore, likely to generate intractable identity conflicts (Fiol et al., 2009). The tabula rasa approach may enable the development of a common identity among organizational members, allowing them to balance the logics. However, it may require controlling growth, which can be problematic when demand is relatively high (Battilana & Dorado, 2010).

3.2.2. Financial Resources

SBHs aim to maximize social impact, just as traditional companies aim to maximize financial value creation. Compared to traditional companies, they face the challenge of reaching scale in a context of weaker prospects of financial sustainability (Santos et al., 2015). As social entrepreneurship has grown in recent years, a new parallel field of social finance has been emerging along with the development of new financing mechanisms (G8 Social Impact Investment Taskforce, 2014). The dual mission of SBHs opens up new opportunities in acquiring funding, as both commercial and philanthropic sources may be available (Chertok et al., 2008). Because most SBHs are neither purely commercial nor philanthropic, they theoretically can access capital at below-market rates and secure preferential terms from funders (Dees, 1998).

Given a wide range of options for funding of SBHs, the following section focuses on four specific resources proposed by Santos and colleagues (2015) for different types of SBHs. One feasible financing mechanism for SBHs is impact investing, which is a type of venture capital. This investment approach aims to intentionally create social or environmental benefits while also providing a financial return by investing capital in exchange for debt or equity in impact-oriented businesses (Brest & Born, 2013). Another source of funding for SBHs is so-called venture philanthropy. Venture philanthropists provide unrestricted funding as a long-term capacity-building grant to a SBH (Grossman et al., 2013). While these investors have little or no expectation of financial return, they have a strong expectation of impact measurement and return (Santos et al., 2015). Furthermore, there are outcome-based contracts such as social impact bonds, which align payments with the achievement of concrete outcomes. These funders support SBHs with grant-based income. However, they are only effective if there is a comparability of outcomes and consensus on how to measure outcomes (Santos et al., 2015). In addition to

these specific funding sources for SBHs, "traditional" financing methods are also available. Financing could be provided through fixed-income instruments such as bank loans or traditional bonds (Santos et al., 2015).

3.2.3. Performance Management

SBHs are committed to both a social or environmental mission and generating profits. Due to their hybrid nature, they need thus to achieve both social and financial performance. Traditional businesses and charities track performance in one of these areas. However, SBHs face a particular challenge because their definition of success encompasses both dimensions. These dual objectives are often not aligned and sometimes conflicting, thereby frequently creating a risk to the mission. While methods for evaluating financial performance are already well established, social performance evaluation tends to lack standardization and comparability (Dimaggio, 2002; Ebrahim et al., 2014; Ebrahim & Rangan, 2010; Paton, 2003).

The primary focus of traditional businesses is to generate value for their owners. Although they may consider non-financial aspects, business leaders are expected to maximize shareholder wealth (Aguilera & Jackson, 2010; Brakman Reiser, 2010). Companies commonly use several measures of financial performance, such as accounting measures (e.g., sales, profits) and market measures (e.g., market value, stock price), which together provide an overall picture of performance (Meyer & Gupta, 1994). These metrics are typically well established, with standardized definitions and valuation methods allowing comparability over time and with other companies. Regardless of the specific type of hybrid organization, the financial health of a SBH can be assessed using similar methods and metrics (Ebrahim et al., 2014).

In evaluating social performance, however, organizations cannot rely on a common set of principles because the results involve a variety of activities – for example, education, health, and the environment – for which there are limited common benchmarks (Ebrahim et al., 2014). A commonly used approach for performance evaluation is a "logical model" in which organizational *inputs* (e.g., knowledge and financial assets) are used to support *activities* or *processes* for the production of goods and services (e.g., food, education) that in turn lead to the delivery of *outputs* to a target beneficiary community (typically measured in terms of the number of people reached and the immediate benefits to them). Over time, these short-term outcomes are expected to lead to enhanced outcomes in the lives of beneficiaries, usually measured through long-term benefits (e.g., increased income, health) (Bickman, 1987; Chen & Rossi, 1983; Donaldson, 2007; Ebrahim & Rangan, 2014; Liket et al., 2014; Weiss, 1972). Organizational

activities and outcomes are typically easier to measure than outcomes, but the latter shows progress toward the social mission (Ebrahim et al., 2014).

Another performance monitoring challenge for SBHs is how to monitor agent performance. Agency theory identifies two primary mechanisms: monitoring management and staff behavior (how social and economic activities are carried out); and monitoring outcomes (social and financial results) (Eisenhardt, 1989; Jensen & Meckling, 1976). Indeed, most organizations are likely to use both, but with greater emphasis on one or the other mechanism (Patil et al., 2014).

3.3. Typology of Social Business Hybrid Models

SBHs have to balance competing expectations for systemically achieving profit and impact rather than focusing on the needs of one dominant stakeholder (Santos, 2012). To understand how hybrid organizations work, the analysis of the business model is of central importance (Santos et al., 2015). The business model – defined as the combination of resources and activities that enable an organization to generate, deliver, and capture value (Zott et al., 2011) – is how hybrid organizations can innovate to enhance coherence between these competing goals (Santos et al., 2015). Santos and colleagues (2015) developed a typology to categorize business models of SBHs based on their transaction characteristics. The two key dimensions *level of contingent value spillovers* and *degree of overlap between clients and beneficiaries* are the basis for this classification.

First, the dimension level of contingent value spillovers is reviewed. In general, all enterprises, whether social or commercial, create value spillovers for society from their activities beyond the core value delivered to clients. SBHs tend to operate in sectors with strong potential value spillovers, particularly where markets are expected to fail in achieving societal benefits due to perceived lower profitability. In domains where positive value spillovers happen automatically just by providing the product or service, profit is strongly aligned with impact, and the business model can be closer to commercial models. However, in other situations, value spillovers are contingent on developing additional interventions because they are not a direct result of commercial activities. Yet, they add cost and complexity to the organization. This distinction between *automatic* and *contingent* value spillovers is critical for the societal effectiveness of commercial models (Santos et al., 2015).

The second dimension addresses the degree of overlap between clients (those who pay for the product or service) and beneficiaries (those who benefit according to the social mission). The

effectiveness of commercial models relies on clients being able and being willing to pay a price for the product that generates a surplus. SBHs often operate in environments of disadvantaged populations who would benefit from using new products, but they may be unable to pay, unable to access the offering, or do not value it enough to intend to buy it. By implementing business model innovations, SBHs try to fulfill their social mission while transacting with their target beneficiaries as clients. However, there are situations in which it is not possible to reach the beneficiary as a client. While commercial enterprises would not serve these clients, SBHs are attracted by the value spillovers. One potential solution is to build business models where there is a client segment that is able and willing to pay, which is different from the intended beneficiaries. Serving this paying client allows serving the beneficiaries through cross-segment subsidies where the margin is used to subsidize the client segment that cannot afford to pay. In cases where clients and beneficiaries are different groups, SBHs need to address both groups, which leads to more complex business models and may be associated with a greater danger of mission drift (Santos et al., 2015). Ebrahim and colleagues (2014) also take the overlap between clients and beneficiaries into account regarding the performance management of SBHs.

By mapping these two key dimensions into a matrix, a typology of four SBH models is derived, which will be referred to as Market Hybrids, Blending Hybrids, Bridging Hybrids, and Coupling Hybrids (see Table 2). Market Hybrids and Blending Hybrids serve paying clients who are also the beneficiaries of their societal mission. While Market Hybrids automatically generate value spillovers, Blending Hybrids require blending commercial offerings with additional interventions upon which positive societal spillovers are contingent. Bridging Hybrids and Coupling Hybrids serve clients and beneficiaries who come from distinct groups and therefore need to bridge the needs and resources of both groups. The challenge for Bridging Hybrids is that the business model needs to connect clients and beneficiaries into the same intervention. In contrast, the social impact of Coupling Hybrids also depends on additional interventions that are not included in their core commercial activity (Santos et al., 2015).

Table 2 - Typology of Social Business Hybrid Models (Santos et al., 2015)

Dimensions	**Clients = Beneficiaries**	**Clients ≠ Beneficiaries**
Automatic Value Spillovers	Market Hybrid	Bridging Hybrid
Contingent Value Spillovers	Blending Hybrid	Coupling Hybrid

3.4. Managing Challenges in Different Hybrid Models

In the following, these four SBH models and their specific challenges and practices to address them are reviewed in more detail.

As organizations whose social impact is derived directly from commercial activities with beneficiaries, Market Hybrids simultaneously improve their social performance by focusing on commercial performance. Therefore, they are the least challenging hybrids to manage. In Market Hybrids, hiring preference should be given to employees with existing business skills. Since the social mission is fulfilled by delivering commercial products or services, it is essential to strive for the highest level of business expertise, leading to higher social performance. One advantage of this hiring pattern is that it enables a more homogeneous culture, thereby reducing internal tensions. Due to the strong alignment between profits and social impact, Market Hybrids are ideally funded through impact investments. With a business model closer to traditional commercial models, Market Hybrids are able to create both financial returns and positive social or environmental impact for impact investors. These investors expect to receive payback on their investment through dividend payments, royalties, or the sale of equity shares. Given the alignment between social and commercial operations, performance monitoring in Market Hybrids requires strong operational (commercial) performance indicators tracking both the efficiency of commercial operations and the profile of clients served to anticipate and prevent the risk of mission drift (Santos et al., 2015). A challenge for Market Hybrids is ensuring that the commercial operation leads to social change – whether it is finding an affordable price point for the target market or producing the right set of products to achieve the desired social outcomes – and that they stay aligned over time. In doing so, performance measurement must also monitor whether revenue-generating activities produce the intended social outcomes (Ebrahim et al., 2014).

Blending Hybrids need to develop two types of competencies to fulfill their mission: the operational expertise to execute their commercial activity and the skills to make the necessary interventions to achieve societal impact. To achieve this balance, Blending Hybrids can choose between either a mix-and-match approach or a tabula rasa approach when hiring new employees. It is essential to consider that the benefits of a mix-and-match approach may be outweighed by the increase in internal conflicts between these two groups. Because Blending Hybrids do not have a strong alignment between profit and impact, investors seeking financial returns are not a good fit for funding these business models as investor incentives would increase the risk of mission drift. Therefore, the company's financing can be provided, for example, through

fixed-interest instruments like bank loans. Performance monitoring of Blending Hybrids requires a mix of operational and impact KPIs. Since operational KPIs alone are not sufficient, impact KPIs are needed to monitor the achievement of the social mission. Dedicated staff should develop and supervise the impact measurement system separately from the financial accounting system. This is important to continually track and enhance the management of social interventions (Santos et al., 2015).

A key challenge for Bridging Hybrid organizations is establishing appropriate rules to ensure that beneficiaries are well served to achieve social impact, given the risk of prioritizing the needs of commercial clients over beneficiaries based on resource dependency patterns. In terms of human resources, Bridging Hybrids needs to hire staff with evident expertise in delivering the service or product they are selling. Staff should also have learning skills, as they will need to adapt to the different needs of clients and beneficiaries. While Bridging Hybrids should aim to have financially sustainable business models, they are more likely to incorporate as nonprofits and use philanthropic funds such as venture philanthropy as financing mechanisms. Performance management processes should focus primarily on operational KPIs, as commercial operations are the source of social impact. However, to monitor the risks of mission drift, it will be essential for Bridging Hybrids to oversee the proportion of clients and beneficiaries served and the quality of service received (Santos et al., 2015).

As with Bridging Hybrids, the Coupling Hybrids need to ensure that beneficiaries are not neglected in favor of clients. For Coupling Hybrids to work, a structural differentiation should be established so that the organization builds an internal capacity to execute both commercial and impact operations with the highest level of competency. This structural differentiation requires that Coupling Hybrids recruit personnel with expertise in commercial or social impact areas and thus adopt a mix-and-match approach. Coupling Hybrids can finance their business through a combination of revenues from commercial activities with grant-based income from engaged stakeholders through, for example, outcome-based contracts. These bonds allow payments to be aligned with the company's results, enabling them to scale their solution. Performance management systems should monitor both operational KPIs and impact KPIs to avoid mission drift and ensure maximum performance on both activities (Santos et al., 2015).

4. Teaching Note

4.1. Case Overview

This case study focuses on OpenForests, a SBH founded in 2011 as a for-profit forestry consultancy. The goal of OpenForests is to empower forestry projects to become more sustainable and social in order to have a positive, long-lasting impact on the environment. In the early years, OpenForests mainly provided consulting services where they supported forestry projects to enhance their transparency, monitoring, and visibility through aerial photography. In 2018, OpenForests launched explorer.land, an online platform that allows forestry projects to transparently communicate their progress to their stakeholders through a map-based approach using aerial imagery. explorer.land has a continuously growing number of paying customers, users, and prospects and is OpenForests' most important product. Currently, OpenForests is facing growth challenges in human resources, external funding, and performance management.

4.2. Learning Objectives

The case study discusses challenges of scaling SBHs and potential solutions using the example of OpenForests and its explorer.land platform. First, the business model of the explorer.land platform is categorized using the typology of SBH models by Santos and colleagues (2015). Based on the theoretical concepts proposed in chapter 3, solutions are developed for OpenForests' challenges in human resources, growth financing, and performance management.

At the end of the case analysis, students should be able to identify:

- The social business hybrid model that explorer.land belongs to,
- Potential approaches OpenForests could adopt when hiring new employees,
- Potential funding sources and their suitability for OpenForests,
- Operational and impact performance measures that OpenForests could implement.

This teaching case study is designed for a Bachelor's or Master's course in social innovation, social entrepreneurship, or entrepreneurship. For a social innovation course, the focus would be on the novel way OpenForests bundles its services on the explorer.land platform to help sustainable forestry projects. A course about social entrepreneurship would highlight the tensions and challenges OpenForests faces due to the conflict between its environmental and commercial goals. An entrepreneurship course would emphasize OpenForests' challenges in developing a unique value proposition and achieving financial stability.

4.3. Assignment Questions

The assignment questions are meant to encourage students to discuss viable solutions that could be applied to solve OpenForests' challenges.

Following, the assignment questions are:

1. To which type of social business hybrid model does explorer.land belong?
2. Which approaches should OpenForests adopt to hire new employees?
3. Which funding source is most suitable for OpenForests?
4. What additional performance measures should OpenForests implement?

4.4. Class Discussion

4.4.1. Structure

The following teaching plan is designed for a 120-minute class. The questions should guide the class discussion and connect the related subtopics. A suggested time allocation would be a 15-minute introduction, followed by assignment question 1 (30 minutes), question 2 (25 minutes), question 3 (20 minutes), question 4 (20 minutes), and a 10-minute conclusion.

4.4.2. Introduction

At the beginning of the class, the instructor should present the key facts from chapter 1 to illustrate the importance of forestry projects as one of the most effective ways to combat climate change. The instructor should outline challenges forestry projects face, namely illegal logging and lack of funding due to the projects' high complexity and low transparency. Afterward, the instructor should ask the students if they think that OpenForests can help solve these problems with its platform explorer.land. Students should recognize that explorer.land enables forestry projects to create more transparency to their stakeholders through aerial imagery. Moreover, explorer.land reduces the complexity of communicating and presenting project progress. Overall, students should conclude that OpenForests and its explorer.land platform can contribute to more sustainable forestry projects, ultimately leading to a positive environmental impact.

To achieve this, explorer.land needs to reach more forestry projects. The instructor should briefly highlight the challenges in scaling OpenForests' business, outlined at the end of the case study. In addition, the instructor should remind the class of the importance of discussing concrete solutions to achieve a final management proposal that OpenForests could implement to address the challenges.

4.4.3. To which type of social business hybrid model does explorer.land belong?

To address OpenForests' challenges, students need to have a better understanding of the organization. Therefore, in the first question, the instructor should introduce the typology of SBH models presented in chapter 3.3. The typology focuses on two key dimensions, contingent value spillovers and the degree of overlap between clients and beneficiaries. Based on these two dimensions, four SBH models – Market Hybrids, Blending Hybrids, Bridging Hybrids, and Coupling Hybrids – emerge, each with specific characteristics and challenges.

Following the theoretical introduction, the instructor should initiate an open discussion with students to analyze explorer.land regarding these two key dimensions. Within the discussion, students should be encouraged to present arguments for both options of the two dimensions. The following summarizes the possible arguments of students about each of these options.

Automatic Value Spillovers: The explorer.land platform automatically generates various positive spillovers for forest projects and their stakeholders. Through the online platform and radical transparency of aerial imagery, projects can showcase their latest progress, and investors and donors can track advancements directly. In this way, legitimate projects can differentiate themselves from dubious projects and potentially attract new investors. By monitoring their forest areas, projects can manage their land more efficiently. In the long run, transparency and efficiency should lead to more sustainable forestry projects that positively impact the environment. These benefits are generated without additional input from OpenForests.

Contingent Value Spillovers: Simply providing a transparent presentation platform and software tools does not directly make forestry projects more sustainable or efficient. Additional training by OpenForests' experts on how to use the explorer.land platform effectively and how to manage forests more sustainably would generate value spillovers for forestry projects.

Clients = Beneficiaries: OpenForests receives a monthly fee from forestry projects for using explorer.land, making them paying clients. Through the explorer.land platform, forest projects benefit from sharing their progress online cost-effectively and engagingly with their stakeholder. Through increased transparency and visibility, projects can better access funding, build a more extensive network, and prove themselves as legitimate projects. Projects can also monitor their reforestation areas more effectively and efficiently.

Clients ≠ Beneficiaries: Besides the forestry projects, their various stakeholders also benefit. Investors, sponsors, and donors can better track the project due to the increased transparency.

In addition, the environment benefits, as more transparency and monitoring should lead to more sustainable forestry practices and more forestry projects in the long run.

Based on the discussion, the instructor should conclude that all of the above arguments make sense. However, for the categorization of explorer.land, it is necessary to select one option for each of the two dimensions. Given these arguments, the participants should recognize that the explorer.land platform generates significantly more automatic than contingent value spillovers. While project stakeholders also benefit through the explorer.land platform, the forestry projects are the main beneficiaries, as OpenForests explicitly targets them and creates strong added values for them. Consequently, students should then classify explorer.land as a Market Hybrid in the topology of SBH models.

Finally, the instructor should outline the management practices for addressing challenges in the four SBH models presented in Chapter 3.4. The instructor should also point out that with this theoretical knowledge in mind, course participants should develop solutions to the challenges of OpenForests in the following three questions.

4.4.4. Which approaches should OpenForests adopt to hire new employees?

Next, the instructor should discuss OpenForests' human resource challenges with the students. Based on the information in the case, students should understand that OpenForests has staff shortages, which is problematic because it hinders OpenForests from reaching its full growth potential and negatively impacts operational quality. Moreover, students should recognize that OpenForests is a small team with limited resources to hire new personnel.

Afterward, the students should identify the task areas in which OpenForests most urgently needs new staff. Since financial resources are tight, the two most important areas should be selected at the end of the discussion. Students need to recognize that new personnel is needed for software development and customer acquisition and support. The following is a summary of the reasons.

Software development: explorer.land as an online platform must function stably and without downtime, which in turn requires clean code and control mechanisms to prevent further outages. In addition, the development of new functions that increase the added value of the platform and thus the willingness of customers to pay is resource-intensive. For this reason, an additional employee in software development is essential for OpenForests.

Customer acquisition and support: explorer.land has seen a sharp increase in new users and interested parties on the platform in recent months. The organization cannot process these requests fast enough with the given capacity. This could harm growth, as prospects who have already made an inquiry could be deterred from becoming customers by long response times. If response times to customer problems increase due to more requests, service quality and customer satisfaction could also suffer. To achieve further growth with high operational quality, OpenForests needs an additional employee in the area of customer acquisition and support.

After identifying and understanding the two areas of greatest workforce need, the instructor should provide a brief theoretical introduction to different hiring approaches of hybrid organizations presented in chapter 3.2.1. The underlying idea of these hiring techniques is the assumption that the dual goals of hybrid organizations influence the requirements profile since candidates should ideally carry both logics of the company. Since too few applicants already combine these dual logics, alternative hiring approaches are needed. However, the extent to which the dual goals of a hybrid organization influence the requirements profile may vary widely depending on the task area. Therefore, the instructor should ask the students whether the hybridity of OpenForests impacts the requirements profile for the positions in software development and customer acquisition and support. Students should argue that working in software development is a very technical job with little potential for conflicting hybrid goals. The main task is to develop software, and the founders define the specifications. In contrast, the position in customer acquisition and support involves a lot of customer contact, which makes conflicts between logics more likely to arise. In customer acquisition, for example, employees need to sell subscriptions to as many projects as possible to generate revenue. At the same time, the environmental impact would be most significant if a maximum number of projects, including those that cannot afford the fee, could use and benefit from explorer.land.

Based on this discussion, the instructor should introduce two practical hiring approaches OpenForests as a hybrid organization could adopt. One is a competence-focused approach, where candidates already have expertise in the relevant task area or experience working in an environmental NGO. The other is an apprenticeship approach, where employees have no prior experience from either field and are therefore unbiased, making it easier to become familiar with the hybrid logic. Students are asked to evaluate which approach OpenForests should adopt when hiring employees for software development and customer acquisition and support. In doing so, students should assess the advantages and disadvantages of each hiring approach for both positions. Possible arguments are summarized in the table below.

Table 3 - Arguments for potential hiring approaches that OpenForests could adopt

Approach / Area	Competence-focused approach	Apprenticeship approach
Software development	An advantage of hiring an experienced software developer is that he can directly contribute value without time-consuming training. The risk of a conflict with the dual goals of OpenForests is low due to the technical activities and the lack of customer contact. Hiring an employee without programming skills but with experience in environmental NGOs would have no advantages because there is no touchpoint with environmental tasks.	Hiring an inexperienced employee requires a long training period since software development is a complex field that demands many hard skills. This is especially problematic because the team is small, and challenges need to be solved urgently. The potential advantage of better familiarizing the hybrid character is marginal since, in the role of the software developer, the dual logics barely conflict.
Customer acquisition and support	An employee with experience in customer support or sales may serve more customers and bring new knowledge. In contrast, there is a risk of under-prioritizing ecological goals due to prior experience. This could lead to projects being considered purely in terms of profit, ignoring their impact. A former NGO employee could bring experience in dealing with other NGOs. However, he could over-prioritize environmental goals, jeopardizing profitability if, for example, all high-impact projects receive services without payment.	Hiring an employee with no prior experience requires training in customer interaction, but this onboarding should occur relatively quickly. The absence of bias allows the employee to be educated about the hybrid organization in the spirit of the founders. This is especially important in a role with customer contact to balance profit and environmental goals, such as finding unique solutions with alternative payment methods for projects with large environmental impacts but low financial resources.

After this discussion, the instructor should conclude that OpenForests should take different hiring approaches for each of the two positions. Based on the arguments, it should become clear

that OpenForests should adopt a competence-focused approach for software development and an apprenticeship approach for customer acquisition and support.

4.4.5. Which funding source is most suitable for OpenForests?

As part of this question, the instructor works with the students on how OpenForests should solve the challenge of limited financial resources. To do this, the instructor should present the potential funding sources reviewed in chapter 3.2.2 and the investors' objectives. Afterward, a discussion should determine which funding sources seem to be the most suitable for OpenForests. The table below summarizes potential arguments.

Table 4 - Arguments for potential funding sources that OpenForests could acquire

Investor type	Investor goals	Organization analysis
Bank loans	Low risk and fixed return	As a young company with no collateral and tight finances, OpenForests is unlikely to get a bank loan due to credit guidelines. Moreover, the strict payment modality would lead to less flexibility in the future, which is essential to the founders.
For-profit investors	High return	Since for-profit investors aim for maximum profit, they would not value OpenForests' environmental focus. They would seek to impose the highest possible prices, regardless of whether this results in lower impact because smaller projects can no longer afford it. Also, practices like giving access to explorer.land for high-impact projects at reduced fees are not appropriate for for-profit investors. Thus, they do not fit with OpenForests.
Impact investors	Impact and return	Impact investors would have the opportunity to make a positive contribution to the environment and receive a financial return. Since Open-Forests is already a financially balanced company, there is a good chance that long-term profits could be realized through scaling. If an impact investor shares the vision and a flexible investment horizon, they would be a good fit for OpenForests. Furthermore, an impact investor could contribute expertise and a network that could benefit OpenForests' business.

Outcome-based contracts	Measurable environmental outcomes	This form of funding is difficult to apply to OpenForests, as clear outcome-based measures are not in place. Since explorer.land is a platform, project-level metrics would be outside of OpenForests' control. It would be conceivable to subsidize explorer.land to generally offer lower prices. This would allow more projects to use explorer.land, resulting in greater impact.
Venture philanthropy	High environmental impact	Funding from venture philanthropy could help strengthen explorer.land with a long-term capacity-building grant. For example, scientific map layers could be implemented to increase transparency and monitoring. Overall, the quality of the platform would increase, attracting more projects and thus achieving a higher impact. However, it could be problematic that investors do not want to give grants to a for-profit organization.

Based on these arguments, OpenForests should first focus on impact investors. Due to the high alignment of interests, this scenario promises the highest likelihood of acquiring external funding for OpenForests and long-term shared success. The literature also suggests impact investors as the preferred source of financing for a Market Hybrid such as OpenForests. Besides, it would also be imaginable to approach venture philanthropists or outcome-based contracts. The advantage of these is that the funding would not have to be repaid or without returns. However, acquiring grants is less likely for a for-profit company like OpenForests.

4.4.6. What additional performance measures should OpenForests implement?

For the last question, the instructor should provide a brief theoretical introduction to performance management in hybrid organizations described in chapter 3.2.3 and 3.4. Students must understand that a hybrid organization needs both operational and impact key performance indicators (KPIs). In addition, the instructor should elaborate on the importance of KPIs and how they can help overcome challenges in hybrid organizations more effectively. Afterward, the instructor should ask the course what additional operational KPIs could be helpful for OpenForests. Students could give the following answers:

Potential operational KPIs: Average speed to answer, bounce-rate, conversion rate, cost per contact, customer acquisition costs, customer lifetime value, net promoter score, page impressions, return on advertising spending, revenue per customer.

Based on these answers, the instructor should work with the students to agree on the following three operational KPIs for OpenForests:

Customer lifetime value: The customer lifetime value describes the profit a company can expect from a client for the time the company stays a customer. For OpenForests, this KPI would aggregate the monthly subscription fee a customer pays to use explorer.land multiplied by the expected average subscription duration. This KPI is useful for OpenForests in several ways. On the one hand, OpenForests can use the customer lifetime value to compare different customers to find out which clients are more profitable than others. Based on this, OpenForests can segment the customer base to work more effectively. On the other hand, this KPI indicates the maximum amount OpenForests could spend on acquiring a new client to act economically. Thus, the customer lifetime value can be a critical quantitative KPI besides environmental aspects, whether it makes sense to acquire specific customers or not (Gallo, 2014).

Customer acquisition costs: Customer acquisition costs are the costs of winning one paying customer to buy a product or service. For explorer.land, this would primarily include the wage costs for employees working in customer acquisition and support. This involves calculating how much time employees needed to acquire a paying customer for explorer.land. In addition to the time spent on an acquired customer, OpenForests must also account for the time spent on customers who only opted for the free version or prospects who never became customers. OpenForests should determine this KPI to check its customer acquisition efficiency and make better forecasts for the costs of further scaling. Venture capital firms consider customer acquisition costs and the customer lifetime value also as important comparative key figures before investing in startups (Ang & Buttle, 2006; Livne et al., 2011).

Net promoter score: The net promoter score is a commonly used market research metric that measures the willingness of customers to recommend a company, product, or service to a friend. Although OpenForests already receives feedback from its customers, conducting a net promoter score survey on a regular basis would be very useful. It is an efficient tool as it is easy to implement and perform. According to research, there is a strong correlation between business growth and the net promoter score. With this standardized feedback, OpenForests gets insights on how customers rate its services and how this may affect growth (Reichheld, 2003).

Next, the instructor should apply the same approach to identify additional impact KPIs for OpenForests. First, students should name all impact KPIs they can think of. Possible answers could be:

Potential impact KPIs: Average forest area per project, average trees per hectare, local income generated, local people reached, number of trees planned, number of trees planted, number of tree species, number of thematic layers, tons of CO_2 captured, total reforestation area.

Next, the three most crucial impact KPIs for explorer.land should be selected:

Total reforestation area: The total reforestation area indicates how many square kilometers have been or will be reforested across all projects using explorer.land. Since explorer.land relies on a map-based approach, this data should be readily available. This metric provides a way to measure the overall impact of explorer.land as a platform.

Tons of CO_2 captured: The amount of CO_2 stored is one of the critical metrics related to climate change and at the public debate center. Since reforestation projects store a large amount of CO_2, a cumulative statistic of the total amount across all projects could be another critical KPI to illustrate the overall impact of the explorer.land platform to combat climate change.

Number of trees planted: The number of trees planted is a very descriptive and easy-to-communicate KPI that other organizations also use, such as the United Nations with its Billion Tree Campaign or WeForests. Although the number of trees does not give information about whether a project is biodiverse or how much CO_2 is stored, this KPI would be a helpful visualization of the impact of explorer.land, which can be used for public relations.

In summary, the introduction of the commercial performance metrics can help both optimize operational excellence to acquire additional customers more efficiently and attract external funding. These environmental KPIs are needed to internally track OpenForests' progress towards its environmental mission on an organizational level and to externally communicate its impact to stakeholders, such as prospective investors.

4.4.7. Conclusion

By the end of the class, the instructor and the students should have identified that explorer.land is classified as a Market Hybrid, having mainly automatic value spillovers and clients as primary beneficiaries. OpenForests should hire an experienced software developer adopting a competence-focused approach while choosing an apprenticeship approach to hire an inexperienced employee for customer acquisition and support. OpenForests should focus on searching for an impact investor and introduce new commercial and impact KPIs.

5. Conclusion

The detailed analysis of the SBH OpenForests indicates that the company has the opportunity to make a significant contribution to increasing sustainability in forestry projects with its explorer.land platform. By applying innovative and scalable technologies, explorer.land is a cost-efficient presentation platform for forestry projects providing radical transparency through aerial photography. In the long term, explorer.land will strengthen reforestation as one of the most effective means to address climate change and thus positively impact the environment.

To further succeed in the future, OpenForests needs to overcome various challenges in scaling its platform. The three main challenges of the SBH were identified in human resources, external funding, and performance management. As part of this work, relevant theoretical concepts were explained on how other social enterprises and hybrid organizations dealt with similar challenges. Based on this, concrete recommendations for action for OpenForests were developed. To scale further, OpenForests should hire two new employees adopting different hiring strategies for these two positions. First, OpenForests should hire an experienced software developer with a competence-focused approach given the highly technical tasks that are unlikely to conflict with the organization's dual goals. Second, additional staff is needed for customer acquisition and support. In this regard, an employee with no prior experience should be recruited using an apprenticeship approach to balance commercial and environmental goals. Moreover, the founders should focus on impact investors when seeking external funding. Compared to other funding sources, commercial and impact expectations of both parties are most aligned, making successful collaboration more likely. To further professionalize operations, OpenForests should introduce additional commercial KPIs to acquire customers more efficiently, which will positively affect both the financial and environmental performance. In addition, OpenForests should introduce impact KPIs to visualize and track its positive contribution towards its environmental mission at an organizational level. Both types of KPIs, commercial and impact, are also helpful and frequently required to attract external funders such as impact investors.

The results of this work contribute to a richer and deeper understanding of the specific challenges SBHs face in scaling their business due to their hybrid nature. Furthermore, the specific recommendations for OpenForests could be helpful to and applied by other hybrid organizations facing similar challenges.

It would be oversimplified to conclude from these results that these challenges arise whenever SBHs scale their business and that these scaling strategies are effectively applicable to all hybrid

organizations. It would be interesting to observe Open Forests to determine whether these scaling strategies support the organization to grow while maintaining hybridity over the long term. Further research may focus on analyzing a more significant number of SBHs, for example, using a comparative longitudinal case study, to generate comparisons and explore the extent to which these findings apply to other hybrid organizations.

Similarly, there is a need for research that explores the generalizability of the identified challenges and proposed strategies to more mature and complex SBHs. This could include studying SBHs with a different legal form, such as nonprofits or benefit corporations, and SBHs with a more complex organizational structure and more employees. Overall, further comparative studies are needed to gain a more detailed understanding of the influence of organizational and environmental factors on the scaling of SBHs.

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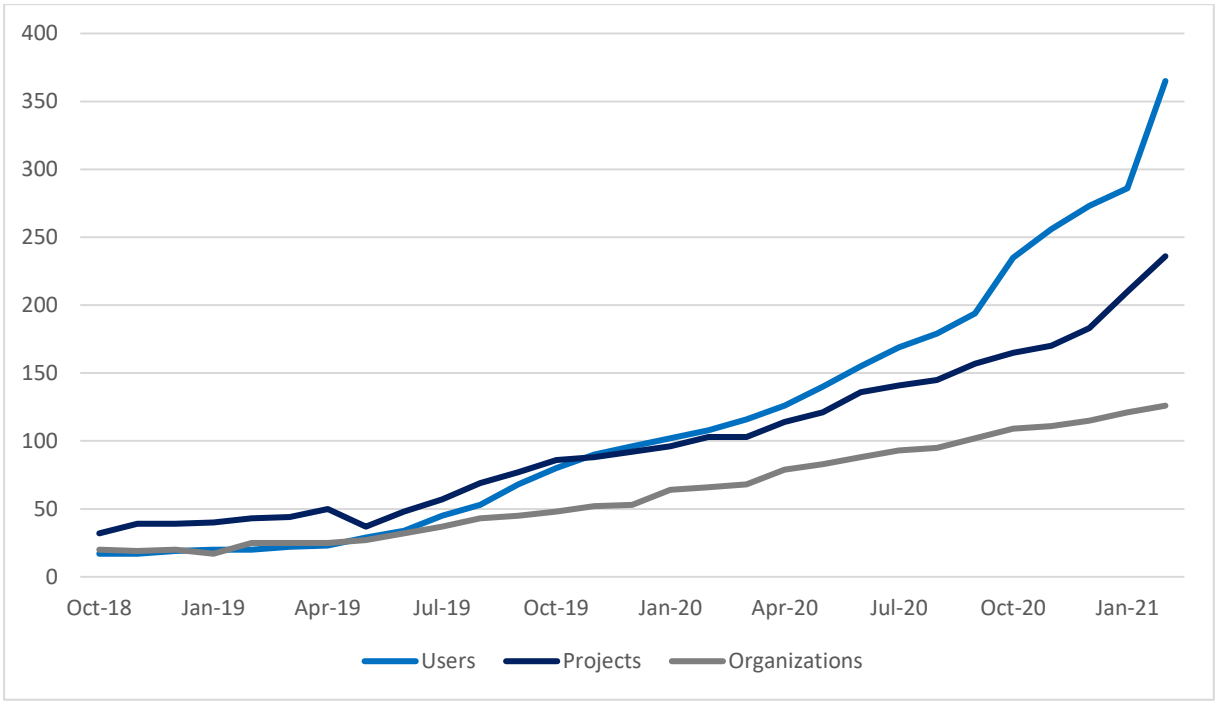
Appendices

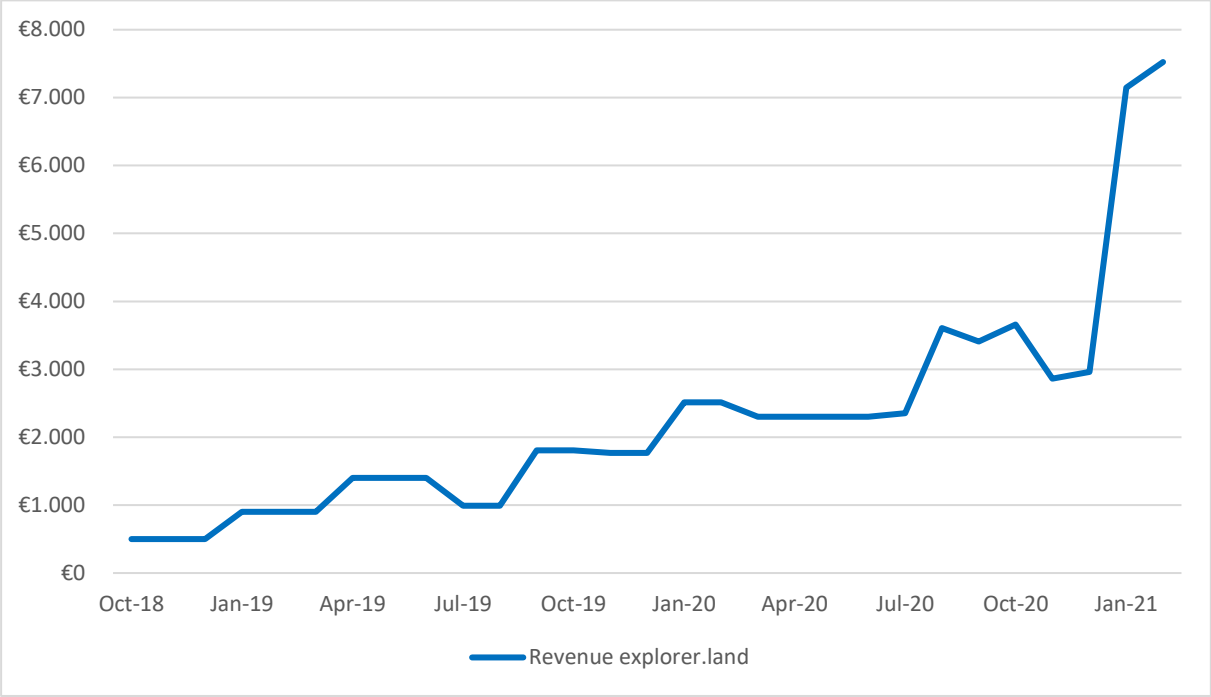
Appendix 1: explorer.land plans (OpenForests, 2021)

	Free	Starter	Standard	Premium
PLAN	Create beautiful project web maps and share them with your internal team and during presentations.	Publish and share your web-maps with everyone. Must-have features for impressive project presentations and transparent storytelling.	Power-users, and growing teams that need unlimited space for story posts and geolocations.	Professional project communication that needs structured reporting and storytelling for corporate sponsors.
TOP FEATURES	– Interactive maps – Geo-located news posts – Mobile Story Mapping App – Internal Preview **NEW** – Listing of partners – Satellite base-maps	**Everything in Free, plus:** – Publishing and sharing – Listing on explorer.land – 1 high-resolution map integration – Support – Embedding **NEW**	**Everything in Starter, plus:** – 10 users – 5 organizations – 10 high-resolution maps – Unlimited geolocations – Training & data import **NEW**	**Everything in Standard, plus:** – Unlimited users – Unlimited organizations – Integration of sponsor landing pages – Priority support **NEW**

Appendix 2: Number of users, projects, and organizations on explorer.land (internal data)



Appendix 3: Monthly revenue of the explorer.land platform (internal data)



Appendix 4: Yearly revenue of OpenForests, explorer.land and its share (internal data)

Year	Revenue total	Revenue explorer.land	Share of explorer.land
2018	175,500 €	3,900 €	2 %
2019	238,000 €	24,000 €	10 %
2020	195,000 €	52,000 €	27 %
2021 (estimate)	260,000 €	159,000 €	61 %