Management for Professionals

Alexander Ruthemeier
Seda Röder
Kathleen Schröter
Philipp Plugmann *Editors*

The Global Impact of Social Innovation

Disrupting Old Models and Patterns

Springer

Management for Professionals

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Kathleen Schröter • Philipp Plugmann
Editors

The Global Impact of Social Innovation

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Editors
Alexander Ruthemeier
Steinbeis Institute for Global
Entrepreneurship and Innovation
Berlin, Germany

Seda Röder
Founder at The Sonophilia Foundation
Managing Partner at The Mindshift. Global
Salzburg, Austria

Kathleen Schröter
Co-Founder and CEO
ootiboo GmbH
Berlin, Germany

Philipp Plugmann
SRH University of Applied Health Sciences
Leverkusen, Germany

ISSN 2192-8096 ISSN 2192-810X (electronic)
Management for Professionals
ISBN 978-3-031-03848-8 ISBN 978-3-031-03849-5 (eBook)
https://doi.org/10.1007/978-3-031-03849-5

This Springer imprint is published by the registered company Springer Nature Switzerland AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

Foreword

> Social innovation is the process of developing and deploying effective solutions to challenging and often systemic social and environmental issues in support of social progress. Social innovation is not the prerogative or privilege of any organizational form or legal structure. Solutions often require the active collaboration of constituents across government, business, and the nonprofit world.
>
> —Sarah A. Soule, Neil Malhotra, Bernadette Clavier / Stanford Graduate School of Business

The last few years have made it clear for us, once again, that we are living in a constantly changing world where new challenges continue to crop up. Time has also shown us that the gap between rich and poor is always growing.

Charity, sympathy, and empathy, as well as creativity and innovation, are more necessary than ever. To truly be able to solve the global challenges in such areas as energy, water, education, health, poverty, and human rights, we need to cooperate – globally.

Unfortunately, creativity, innovation, charity, sympathy, and empathy on their own cannot solve global injustices, although they make a good ground on which to sow the seeds for ideas of possible solutions – in my opinion *There aren't any problems, just hidden solutions*.

Cooperation between the different organizations, i.e., non-profits, government, and the corporate sector, is the key to success regarding social innovation.

As changes and development in different areas of our society evolve, we can also see strong and very positive development in the world of innovative social entrepreneurship. Here, we do not just want to emphasize innovative and creative thinking and acting, but also the strong professionalism and perspective of viewing a non-profit organization as a corporate entity. Professional and successful companies need competent staff that must be remunerated accordingly. Here, too, we see a positive trend whereby a new group of leaders comes to the forefront – social entrepreneurs, like global visionaries, empathy innovators, and professionals looking into deep collaborations.

Non-Profit Sector

Still, for most of us, organizations that fulfill a charitable goal are either an association registered as a non-profit, like “eingetragener Verein” in Germany or “Förening” in Sweden, where like-minded people come together for that purpose. This form of legal entity is dependent on its members and is often used as a vehicle within charitable areas like sports, art, and music. They can be seen as clubs for charitable like-minded persons, wanting to bring to fruition a good cause.

Another form of legal entity is the charitable foundation. Foundations are independent assets that do not have an owner. The will of the founder is realized with the help of income generated from the foundation’s management of its assets and, if necessary, donations through fundraising.

Additional forms are, for example, corporate entities that have been given the charitable status, like “gemeinnützige GmbH” in Germany.

Government

It is gratifying to see new innovative social projects already underway around the world. Both developing countries and industrialized countries have recognized the importance of this endeavor. The roles of governments are diverse, and they are not limited to tax relief and financial support. Many governments take on tasks such as:

– Being a collaborating partner, who gives credibility to the project and reduces potential technical, commercial, and financial risks associated with the innovation.
– Setting up standards/using standards to encourage and to regulate innovation.
– Buying innovation as a lead customer.

Overall, it can also be said that the governments are challenged, as we have all seen through the global COVID-19 pandemic, to support social innovation.

Corporate Sector

Entrepreneurial thinking is indispensable for success. Non-profit organizations are irreplaceable as reliable partners to this end. Governments stand by as strong partners through the tasks mentioned above, but entrepreneurial thinking is essential for the expected success.

Up until now, investors have been primarily concerned with *evaluation*, i.e., how do I rate success, which lies in either *avoiding* or *solving problems*? For an investor, this entrepreneurial question is key.

From the corners of this triangle, we move between solving the problems within the limits of what is possible and allowed with the help of investors who are willing to take the risk - to be able to solve the problems.

The interesting and admirable reports in this book are proof that once a problem has been identified and clearly defined, and once the goals are realistically formulated and the right partners are ready with conviction and courage, we can move worlds.

The question is: is the change a *disruption* or *a normal development* in a constantly changing world?

The book that you hold in your hands is not only important in terms of content but also serves as a very good motivator. Perhaps, this book can help with some questions that may cause doubtfulness or hesitation.

Global efforts, supported by innovative thinking, can achieve more than we might believe.

> There are no problems, only hidden solutions. — Towa von Bismark, Executive Director UBS

Executive Director, UBS Towa von Bismark
Zurich, Germany

Introduction

Social innovation and social impact are not simply buzzwords, but they are a global opportunity that can provide new resources and pave the way for a better life out of poverty and scarcity for millions of people. Everyday NGOs, philanthropic organizations, and individuals around the globe tackle and solve problems that governments or corporations fail to address. In this book, you will find many of those success stories and best practices.

The book is divided into three main sections: The Role of Community, Platforms, and Creativity and Leadership in the process of creating social impact. The aim of this book is to give the reader concepts and experiences that illuminate the heterogeneous field of social innovation from different perspectives while also addressing some of the challenges in the future.

As we, the editorial team, were preparing the content of this book, we came to realize that an important gap remains between on-site efforts and impact measurement. In many cases, quantifying social innovation and impact is extremely difficult, which makes the field feel like homeopathy: the medicine seems to help but no one is quite sure why, how, and for how long. This is mainly due to the fact that organizations below a certain size cannot afford to commission research studies that measure the short- and long-term impact of their efforts. However, this fact should not prevent the reader from being invested in social impact ventures, NGOs, or other philanthropic, non-profit undertakings. The strategies and best-practice examples in this book will suffice to convince how much positive change even the smallest projects can bring into the lives of communities and individuals.

Contents

How Creativity Projects Can Lead to a Social Enterprise, Enabling Cross-Generation and Cross-Milieu Communication: The Way to "ootiboo", a Case Study

Kathleen Schröter and Angus Cameron

1 Introduction

The more the world is leaving the industrial age behind, the more the **v**olatile, **u**ncertain, **c**omplex and **a**mbiguous world (the VUCA world) is shaping lives and job opportunities. In the twenty-first century, the existing standard school system no longer adequately prepares future generations to cope with the problems of the world.

Nearly half of the jobs in OECD countries are likely to be automated over the next 10–15 years. It is estimated that 65% of today's schoolchildren will work in professions that do not currently exist. Although school education around the globe lasts longer and results in more qualifications than any preceding generation, many young people struggle to find good jobs that reflect their skills and interest (OECD, 2020).

With all advances of the digital society in the twenty-first century, we need to ask how we can complement—not substitute—artificial intelligence and encourage cultures that foster lifelong learning, curiosity and well-being.

Creativity is what makes us human, and it's something that computers and technology can't replicate with the same ability (Amabile, 2020). Creativity is ranked as one of the top five job-related future skills, alongside problem-solving, critical thinking, leadership and resilience (World Economic Forum, 2020).

Moreover, being creative in childhood has a positive spillover effect on emotional and cognitive development and mental health: arts interventions in childhood mid-age groups have been shown to strengthen children's social skills, emotional skills and creativity (Hoffmann et al., 2021). In addition, reading for pleasure positively affects school performance as well as mental well-being (Farshore, 2020).

K. Schröter (✉) · A. Cameron
ootiboo GmbH, Berlin, Germany

A. Ruthemeier et al. (eds.), *The Global Impact of Social Innovation*, Management for Professionals, https://doi.org/10.1007/978-3-031-03849-5_1

The relationship between creativity and well-being remains understudied in children: most studies on this age group focus on the relationship between creativity and academic achievement (Kaufman et al., 2016).

ootiboo will be the first enterprise to capture nuanced relationships between creativity and other variables linked to successful outcomes across child development, working with an unprecedentedly large sample of children. Additionally, our research seeks to inform the continued development of ootiboo via ongoing assessment of creativity and well-being.

Focusing on primary school children aged 5–11, ootiboo creates projects that expose children to a wide range of creative expression. These projects are supported by professional creatives, authors and the scientific research community such as neuroscientists and behavioural scientists.

In the process of working with the ootiboo crew, involved adults experience the benefits of such collaborations first-hand—ootiboo is aiming to awaken the childlike explorer mindset in everyone, no matter the age.

2 Community-Engaging, Large-Scale Creative Projects: Proof of Concept, Proof of Value

To understand what ootiboo does, we should go back to the beginning and tell the story of how it all began. Contently's editor-in-chief Joe Lazauskas and his co-author Shane Snow translated the neuroscience around storytelling and explained why stories matter: "(. . .) when we hear a good story as human beings our brain lights up. It illuminates the city of our minds (. . .). It makes us care. It builds relationships. And that's why storytelling has been such a fundamental part of being human since early times" (Lazauskas and Snow, 2018).

Storytelling is a significant part of ootiboo, so here is the story of how we came to be.

2.1 "Lasting Memories" - an Opportunity to Light-Heartedly Learn About Local History for the Community and Younger Generations

The idea for "Lasting Memories" came in July 2018 when two local artists from East Cliff Creatives (ECC), Angus Cameron and Ben Braudy, worked together on a series of beach installations in Kent, UK. On 1 design 16 volunteers came to help, inspiring them to envision a much larger collaborative beach art project involving poppies constructed from thousands of pebbles. The poppy is the enduring symbol of remembrance of the First World War, strongly linked with Armistice Day (November 11th,1918). The team originally planned for Armistice 2018, prepared a budget and reached out to the local community. However, after some research, they decided instead to mark the true end of WW1, when the Treaty of Versailles was signed on June 28th, 1919.

Given the historical significance of the project, the team had the support of Darrienne Price who headed up the First World War heritage projects for local culture development organisation Screen South.

2.1.1 Evolution of an Idea

An idea is shaped over time. It evolves, adapts and responds to various factors including time, budget and other decisions made along the way.

The number and size of the poppies went through several iterations, eventually becoming seven poppies to represent the 7 months from Armistice to Peace.

Initially the pebbles were to be painted in flat colours, red for the petals, black for the centre and edging and green for the stalks. However, an additional darker red colour meant each of the petal stones could have its own unique design.

This turned the pebble painting into a much more engaging and personalised experience.

2.1.2 Historical Research

Behind each of the seven poppies was a story from the 7 months between the Armistice in 1918 and eventual peace with the signing of the Treaty of Versailles in June 1919. These revealed the impact of the aftermath of war on the local community of Folkestone, more than 100 years ago.

A group of volunteers worked closely with Screen South to research the seven stories for the project, and the team held an outreach event at Folkestone Museum to further engage with the community and strengthen the historical research.

2.1.3 Funding

By the end of 2018 the team had reworked their proposal, carried out a survey to gauge local interest and prepared and submitted an (ultimately successful) application to the National Lottery Heritage Fund for nearly £12 k. Screen South partnered up with the ECC to help get the funding.

On January 25th, 2019, the team found out the application was successful.

2.1.4 The Practicalities of Collecting Tonnes of Pebbles and Painting Them

The team identified an ideal location, a location for the poppies on Folkestone's pebble beach near the harbour, and obtained permission to remove the pebbles to paint them on the proviso they would be returned.

In all, there were 14 group collections by ECC members and youth groups. On one outing alone, 9000 pebbles were collected.

A big purchase for the project was for the containers (trugs) to collect and store pebbles. By the end of the project, the team had amassed 200!

Trugs laden with pebbles were transported from the beach in cars to a couple of storage areas, and by doing that, the limits of the private vehicles were tested.

The Right Type of Paint and the Painting Workshops

Due to a beach location, the project needed an eco-friendly solution to colour the pebbles. After testing a variety of different natural dyes with limited success, Ben came across Lakeland Paints, a company who specialise in non-toxic, eco-friendly temporary paint.

Being a specialist paint, it came with the special price of around £75 per 5 L tin (to give an idea, a basic decorating paint comes in at approximately £28 per 5 L tin)—and the team ended up buying 16 of them. This was a key element that had been budgeted for.

The first workshop was held at Folkestone Library. Working in a relatively confined space, managing paint and pebbles with lots of children was a big learning curve. The workshop gained plenty of interest and was busy. One lesson quickly learned was to keep different colours on separate tables to avoid mixing—and to minimise the amount of paint a 5-year-old can get their hands on!

However, by the end of the first round of workshops near the end of May, only 4500 pebbles were painted—not nearly enough.

2.1.5 Where to Find More Volunteers? Gallery 66: The Opportunity to Be Inclusive and to Involve any Passers-by

Earlier in the year, ECC had held a pop-up shop at Gallery 66 on Folkestone's cobbled old high street. Its owner offered Gallery 66 as a community art space so that the pebbles could be painted there. At no cost! A hugely generous offer... and a massive relief!

With space to store and paint pebbles and a chance to be really visible to the community, the team filled the window space with decorated pebbles to attract attention. It worked. Over the coming weeks, a steady stream of locals and visitors from around the UK and beyond popped in to paint pebbles. It was also a chance for members of ECC to get involved, get to know each other better and engage with the community.

Local business showed their support with surrounding shops promoting the project and also painting pebbles. A local cafe even provided free pizza for painters, during some of the evening sessions.

From the 1000 or so people who came into Gallery 66 to paint, there were many nationalities, diverse backgrounds, able-bodied and disabled, and even three dogs helped with the painting.

Gallery 66 was just one part of the painting puzzle. Schools and youth groups played a key role in generating the number of painted pebbles needed. In one school alone, 400 children took part in a giant painting session in their school hall. In total over 1200 school children across eight schools took part.

It became a really inclusive community project. You did not have to be an artist to paint a pebble, but everyone's effort, young or old, contributed to a larger artwork.

2.1.6 All Painted, Now Lay It Down

With growing community support and participation, the project crept ahead of projections, and amazingly the last pebble was painted 2 days early!

Nearly 49,000 red, black and green pebbles—including almost 40,000 petal pebbles with unique designs—were the result. The designs were as diverse as the volunteers that painted them.

A Special Poppy for Belgium Refugees – Reflecting the Close Ties Between Belgium and Folkestone During the War

One of the research themes focused on the Belgian refugees who passed through Folkestone and the relief effort to rebuild Belgian towns after the war. Darrienne from Screen South had connections with Wallonia Belgium Tourism and contacted them to develop a European angle to the project. The seed for the eighth poppy was planted: a half-sized version of the poppy design, one half in Folkestone, the other in Belgium. The idea was greeted positively, and the team was invited to lay the poppy at the Mons Memorial Museum.

With kind support from Folkestone Vehicle Rentals for use of one of their vans, Le Shuttle for the channel crossing and Wallonia Belgium Tourism for their hospitality, the team were all set and arrived in Mons on Thursday afternoon and finished by mid-Friday. The team got straight to work, a chance to put all the testing into practice using a bespoke wooden grid to accurately lay the pebbles to recreate the poppy paper design. By midday Friday the Poppy was complete, with pride of place in the large entrance hall of the museum.

Instead of designs, the smaller Belgian poppy contained mini pebbles with a single letter on each stone. In Folkestone there was a matching poppy with letters. In the museum, these letters represented the first names of some of the Belgian refugees, whilst in Folkestone these were the letters of their surnames.

The Pebble Poppy Weekend: Celebrating Treaty of Versailles, 28th June of 1819

Saturday morning at 6:30 am saw a team of 20 volunteers assemble—including Angus' 86-year-old father. They roped off the area, unloaded trugs of pebbles, built the first wooden grid and laid the outline to the central mini 2.5 m diameter Belgium Poppy that mirrored the one in Belgium. Once the outline was complete, volunteers followed behind filling the shapes with painted pebbles.

The system worked well. They soon moved on to the larger 5 m diameter poppies and one by one marked them out on the beach.

Darrienne from Screen South talked with passers-by about the project and the heritage represented by the poppies. The local history research behind each poppy was also displayed next to each design. Over the day there was a steady stream of curious onlookers and plenty of positive feedback.

Visual documentation of the construction was a key element of the project with drone photography and a documentary film crew capturing the event.

By the end of the day, four poppies were complete and work had been started on the fifth.

A little tired and achy, the team were back on the beach early Sunday morning with some fresh volunteers. The full design soon took shape and by midday construction was complete. This was particularly satisfying as everyone could sit back and enjoy the celebrations hosted by the local council to commemorate the end of the First World War, which included parachutists landing nearby on the beach, a Spitfire fly-by and finally the Red Arrows display.

"Lasting Memories" before the finish line: giant poppies next to the boardwalk at the beach

The team around "Lasting Memories" had achieved what they set out to do. It would not have been possible without the dedication from members of the East Cliff Creatives and support from volunteers, local community groups, schools, businesses and individuals.

> "For me personally, the project gave me the opportunity to connect with the community, evolve existing relationships and form new ones. It proved that we can bring the community together to create art projects that are truly inclusive, and the hope is to build upon this in the future. Oh, and I lost 5 kilos by the end of the project carrying all those pebbles; it even had health benefits!" Angus Cameron

2.2 What Lasting Memories Lead to: Paper Beach

ECC made its name for its imaginative, collaborative and purposeful artwork projects on the Kent coast. This led to a new opportunity, even in the middle of a pandemic.

> "What we get out of community as human beings is something that we've all been missing in the last year incredibly". Sarah Bates, Publishing Strategy Director of Farshore (formerly Egmont Books)

Living in Folkestone, Sarah had seen ECC's work with the pebbles on the beach, and it occurred to her that a collaboration might be possible. Farshore is home to some of the world's best-loved characters and brands, including Minecraft, Winnie-the-

Pooh, Tintin, Mr. Men and Little Miss and Thomas and Friends. The company was working on their rebrand but wanted a way to share their mission of making every child a proud reader—and also to address the challenges that we all faced throughout the pandemic. Sarah got in touch with the East Cliff Creatives; they put a proposal together, and the result was Paper Beach.

Paper Beach championed reading and the joy of books, no matter your age. It also marked a new chapter for Egmont Books as they celebrated the first anniversary of becoming part of HarperCollins Publishers—one of the world's largest book publishing companies.

The project unveiled a brand-new company name for Egmont Books: Farshore. This remained under wraps until the very final stage. The project aimed to prove that even whilst physically distanced from one another, people could still come together to create something wonderful; and whilst everyone was prevented from going out, travelling and meeting up with one another, they could still go on the most fantastic adventures within the pages of a book.

This was a community-style art project, with a connection to books, the shoreline and imagination.

2.2.1 The Task

The project asked a simple question: "Where does reading take you?". Taking part was simple; all anyone needed was an A4 sheet of paper and a black pen. They could draw, write or even type their entry, so long as they answered the question.

A new painting by a local artist provided the backdrop to the words and drawings of all the entries received over the course of the project.

2.2.2 Asking for Entries Digitally

The main challenge was bringing the impact that Lasting Memories had made into the digital realm:

1. ECC reached out through their social media channels and asked for participation worldwide.
2. ECC also reached out to the schools and youth groups who had been involved in the Lasting Memories project.
3. Farshore accompanied the project with six pre-recorded home-schooling sessions led by leading authors and illustrators to help kids create their own characters and worlds. These sessions are still available on Farshore's YouTube channel.
4. The project had three different competitions for schools based in the UK, kindly donated by Farshore. Prizes included book bundles worth up to £500 for the winner's school and a special author's masterclass.

The number of entries increased as soon as the project introduced a competitive element, rewarding schools for entering the most pages each week. This approach created an additional sense of purpose and inclusivity for the kids, teachers and parents. It also proved that people sometimes just want to join in and be part of something, regardless of their perceived talent or ability. Entries flooded in, and before the deadline, 2400 pages were delivered—showing all kinds of drawings, writing and other creative expressions, using just black ink on a white A4 page.

The collaboration between East Cliff Creatives and Farshore brought together the thoughts of thousands of participants to celebrate the magic of reading through the creation of a giant artwork. The youngest entrant was 2 and the oldest turned 100 just before the artwork was revealed. Entries came in from five different continents and 28 countries.

With a live-streaming event, people from all over the world could watch the team lay down the sheets of paper one by one, slowly forming the life-size image of a beach. Entire schools who participated in the competition watched the live streaming together, and a short documentary captured the journey.

This project was the first collaboration with a business enterprise; Farshore funded 100% of the project, worked closely with the ECC team and provided additional resources with their authors, design team and marketing.

Finished mosaic of 2400 A4 pages laid on the floor of a movie studio stage

2.3 Learnings

Those two projects, Lasting Memories and Paper Beach, cannot be compared in terms of content and goals, but they can be compared when it comes to the outcome:

1. **A sense of belonging** was created, as individuals contributed something bigger. Volunteers formed groups and started or solidified friendships. By contributing one piece to a bigger artwork, to the bigger picture, everyone felt invested in the end result.

2. **Teamwork** played an essential role in reaching the finishing line, either by painting and building the poppies or by competing to find out which school could submit the most entries.
3. Asking individuals to spend time on a specific topic in a **playful way brought joy** and created an experience which became a treasured memory and a story to share.
4. **Intergenerational communication** and quality time spent together as families and amongst strangers had a simple but very effective outcome. Elderly volunteers told children and other younger volunteers stories about the First World War, and during Paper Beach, kids talked about their favourite books with their parents, siblings and friends.
5. Inviting a wide audience with no specific targeting to join in—the passers-by in the shop painting poppies or those reached via social media to contribute to Paper Beach—created an **inclusive experience, irrespective of age, gender, nationality or any other perceived division**.
6. **Attention span increased** for participants, regardless of their age in both experiences.

Throughout the 2 years in which those projects were developed and executed, Angus Cameron together with all those connected to the projects shared their experiences with family, friends and their wider networks.

I was amongst them. Angus and I have been friends through previous work in the high-tech entertainment industry. When Paper Beach finished, I was already part of the Sonophilian Foundation. This foundation draws attention to the scientific proof of the positive effects of creative expression.

Introducing Angus to Sonophilia, and most importantly to the SfNC (the Society for the Neuroscience of Creativity—the main scientific partner in the foundation), was a gamechanger. The idea was born to develop creative projects with a systematic approach. With two other colleagues from my then-current job at the Berlin-based company J2C, Dr. Ina Filla and Hendrik Wantia, the four of us founded ootiboo GmbH in Berlin with the goal to prove a hypothesis:

> CREATIVITY can be used as a vehicle to strengthen MENTAL HEALTH and develop FUTURE SKILLS in our children!

3 Implications for a Systematic Change

What if we could combine the success of Lasting Memories and Paper Beach with scientific research and follow the creative process in a longitudinal study?

To do this we formed a new company—ootiboo—to reach out to European Union research labs and involve EU funding opportunities, we founded a GmbH in Germany, the home of three of the co-founders.

3.1 Why Mental Health and Future Skills?

3.1.1 Robust Mental Health in Children Is the Foundation to Grow, Learn and Thrive!

From birth throughout childhood and adolescence our brains critically form and shape neuronal connections. These are essential for acquiring the cognitive and emotional skills that shape lifelong health and healthy relationships, allowing us to make a meaningful contribution to our community and the world.

Being exposed to constant high-stress environments and early negative experiences, such as exposure to violence, discrimination or poverty in homes, schools or digital spaces, increases the risk of mental health conditions (UNICEF, 2021). Thirteen per cent of 10–19-year-olds live with a diagnosed mental disorder; anxiety and depression make up about 40%, alongside intellectual disabilities, ADD/ADHD and others (WHO 2020). An estimated 45,800 adolescents commit suicide each year. That's more than 1 child every 11 min, making suicide the fifth leading cause of death in 10–19-year-old boys and girls (WHO 2020). On top of that, psychosocial distress is more prominent than ever due to the COVID-19 pandemic.

All of this impairs the brain's ability to make those critical connections.

The economic burden for societies arising from mental health conditions in children aged 0–19 total US$387.2 billion each year worldwide (Department of Health Policy of the London School of Economics and Political Science, in UNICEF, 2021).

Despite the extreme costs in human lives, on families, communities and the economy, only 2% of government health budgets are spent on mental health globally (UNICEF, 2021).

ootiboo takes up the challenge: mental health in childhood must be addressed by giving children the tools and skills they need to be able to form the neuronal connections essential to their cognitive and emotional development.

3.1.2 Future Skills Are Highly Connected to Creativity, the Skill Least Achievable by Artificial Intelligence

As stated in the introduction, the careers of the future look set to change dramatically from those of today. Nearly half of the jobs in OECD countries look set to become automated over the next 10–15 years, and an estimated 65% of today's schoolchildren will work in professions that do not currently exist.

Consequently, they will need an entirely different set of skills to enjoy successful careers.

Within the trends of globalisation and growing autonomy, future skills in self-management such as active learning, resilience, stress tolerance and flexibility are needed to maintain mental health.

3.2 Methodology: The Research Approach

Epigenetic research shows that the conditions we create and the experiences we provide for young children affect not just the developing brain but also lifelong health and educational achievements.

ootiboo's scientific research, in collaboration with some of the most renowned science labs in the world, focuses on:

- The effect of free, safe, creative expression on cognitive and emotional development and mental health
- How creativity is organised and develops in the brain
- How creativity/creative skills can be fostered

The creatives and scientists dive into the real world of the children:

- In the classroom—ootiboo is inspired by scientific insights that reading, crafting, making music and other creative activities have huge positive impacts on a child's well-being, relationships, development and future life chances. Creative projects are designed accordingly and measure the real time effects of these activities on the children directly in the classroom—by means of questionnaires and physiological measures of stress and relaxation.
- In the laboratory—inspired by the real-world experiences of the children during the projects, ootiboo dives deeper and studies the neurological processes of the effects by means of brain imaging methods in the laboratory.
- On ootiboo.com—ootiboo's digital platform enables to conduct standardised and (for the children and families) highly secured research by means of digital creativity games, giving unique insights into how to quantify and best foster creativity in children, independently of language or culture barriers.

3.3 Methodology: The Practical Work

The practical work with children directly informs new research, filling pressing knowledge gaps on how we can best strengthen mental health and foster future skills through creativity to enable children to thrive. Together with teachers, ootiboo creates safe spaces in primary schools encouraging 5–11-year-old children to discover and explore their innate creativity, deal with the most pressing challenges of the twenty-first century (e.g. climate change) and experience how it feels to achieve a common purpose in collaboration with other kids—in an inclusive, equitable, cross-cultural, digital approach.

With the help of creative professionals from diverse artistic domains, such as writers, painters, sculptors, graphic designers, artistic techies and many more, ootiboo plans and conducts concise projects tackling distinct topics and inspiring diverse artistic forms of expressions, to build a culture of inspiration, trust and agency. Ootiboo is already in partnership with schools in the UK and in conversations with schools in Germany, and **because there is no cost to schools, ootiboo is able to help in some of the most socially deprived areas. The projects inspire inclusivity, collaboration and free exploration, without fear of failure or the pressure to perform and with the allowance to make a mess!**

ootiboo has already introduced so far the following:

After-School Clubs (ASC) ASCs are held at primary schools, run by in-house teaching staff and consist of six projects that take place over an entire school year. In groups of up to 20, children draw their interpretation of an ootiboo from their imagination, create 3D models of themselves, explore their own powers and talents with the help of an avatar and use mind maps and storytelling to explore "what creativity actually is". Each project runs for 4–6 weeks per term and is supported by downloadable digital resources including lessons plans and short films.

Big Projects Open to anyone who wants to join in, big projects run for several weeks and conclude with an eye-catching event to celebrate the achievements of all the participants. Lasting Memories and Paper Beach would be considered big projects, and after their success stories, May 2022 will see the launch of Propa Happy, the first official ootiboo big project and the second project in collaboration with Farshore.

Ant and Dec with the Cover of Propa Happy

Award-winning UK TV hosts Ant McPartlin and Declan Donnelly are set to release their debut children's book in May 2022 to raise vital funds for the NSPCC (the National Society for the Prevention of Cruelty to Children) ahead of its annual fundraiser, Childhood Day, on June 10th, 2022.

Published by Farshore, Propa Happy is a fun-filled guide to feeling good for children packed with games, jokes, anecdotes, challenges and quizzes to make kids smile. Created in consultation with child psychology experts and with guidance from the NSPCC, Propa Happy includes mental health advice and activities so that children can nurture their emotional well-being every day.

ootiboo will be working closely with Farshore and schools across the nation to create a fun, big project to celebrate the launch of the book and to help raise awareness of the NSPCC's annual fundraiser Childhood Day on June 10th, 2022. Ant and Dec are donating all their author proceeds to the NSPCC's Childhood Day campaign, which encourages kids and grown-ups across the UK to come together to fundraise so that the NSPCC and Childline can continue their work to support children. As Ant himself says, "Every child deserves a happy childhood—and the NSPCC rely on fundraising to ensure they can continue to be here for children and families" (PR announcement Propa Happy).

One Day Pop-Up Engaging School Days Within big projects we have school pop-up events to engage an entire primary school for 1 day, encouraging children from all classes to creatively explore a special topic via three 30-min creative activities.

In summer 2022 the first pop-up event launches with our World Builder project. This is designed to promote the awareness of STEAM in younger children and helps them realise that each skill is connected; rather than working separately or even in opposition to other skills, creativity works hand-in-hand with science and technology. Held in collaboration with Egmont Publishing and their STEAM (science, technology, arts and mathematics)-focused *LEGO Explorer* magazine, the children create their own planet and alien creature or plant.

Digital Platform Beyond the work with schools, ootiboo also has a dedicated, secure digital platform, ootiboo.com. Here users find much more content and activities to continue inspiring children, educators and families around the globe to explore creativity. The platform also enables standardised research to be conducted, reaching out to millions of school children, circumventing language or culture barriers. The digital platform is open to anyone who wants to join in; it's accompanied by scientific research and contributes to a 10-year longitudinal study conducted by our researchers.

4 Conclusion

This is just the beginning of the ootiboo story. We have shown that we can engage and guide children and grown-ups, family and friends alike by using creativity as a vehicle to build knowledge, problem-solving and social skills, to find a sense of accomplishment and to establish meaningful relationships.

Scientific research is showing indications that ootiboo's hypothesis can be proven. But it needs more data and longer studies.

The ootiboo team decided to establish a for-profit company due to the simple conviction that creativity should not be treated as a nice-to-have; it needs to be valued, so we pay our team and contractors a fair wage rather than expect them to give their expertise for free. This reinforces consistency and dedication within the team and lets them know that they're appreciated—to ensure the initiative is a success. By practicing what we preach, children can learn how important creative expression is because they see us treating it as a full subject and a legitimate profession.

To end with one example, in today's tech-driven entertainment sector, computer gaming is one of the biggest industries, with game engines becoming an important part in movie and TV production. Developers are constantly releasing new games, but to do so, they need people who can build the game: people who can conceptualise the story, people who can digitally draw the backgrounds and characters—basically they need creators who can bring the game, its world and the characters that inhabit it to life. These virtual worlds create a higher demand for skilled creatives—including coders, writers, 3D artists and actors—who can harness their vivid imaginations.

> Our vision is to create awareness and opportunity for kids, independent of their origin, family background and experiences. Enabling access to technology through a wide range of creative exploration enhances multidisciplinary thinking, awareness, complex problem-solving and collaboration.
>
> Our mission is to break the silence around mental health conditions, raise mental health literacy and open up the conversation on how to best support our children and equip them for their future, so that they can deal with the challenges of the twenty-first century.
>
> We will dive into the children's reality, give them a voice and enable them to trust in their potential.
>
> With top-class scientific collaborations around the globe and a digital platform that reaches millions of kids around the globe, we are dedicated to taking their creative education to the next level.

Picture Credits

A Propa Happy book for kids – News – Ant & Dec (antanddec.com)
http://www.eastcliffcreatives.com

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Kathleen Schröter has a background in business administration and focused 11 years in marketing and business development for applied sciences working at the Fraunhofer-Gesellschaft. In 2018, Kathleen was named as 1 of 13 impactful women in tech honoured by the Advanced Imaging Society with their distinguished leadership awards. As a public speaker, her insights into deep and high tech allow audiences to contextualise tech trends, deepen their understanding of R & D processes and explore sci-fi scenarios that could soon become a reality. Immersive technologies make her heart beat faster, but over the years she investigated into mother earth's techniques and became a permaculture designer and a yoga teacher to balance her technology-driven life and so developed a very holistic knowledge base. Her research starts with the question of what humans are capable of and what AI can't replace. She joined J2C GmbH in April 2020 to become their technologist and alchemist. In November 2021 she co-founded ootiboo GmbH where she serves as the managing director and focuses on that role full-time since February 2022.

Angus Cameron (Angus "Goose" Cameron) has always surrounded himself with creativity. As a child he explored painting, photography and film-making, which provided the foundation for a 30-year career in the film industry. He worked as an artist and supervisor on over 50 visual effects movies, as a stereographer for 3D films and as a project manager on virtual reality experiences. Since 2018, Angus has stepped back from the challenges of the industry to explore his own creative ventures. This led to the formation of the East Cliff Creatives, an artisan community in his hometown of Folkestone. Through the group, he developed a series of projects engaging with the local community through creativity. These projects in turn sparked the creation of ootiboo in 2021, an international initiative to inspire primary school children through creativity to improve personal development, mental health and future work opportunities.

Cultural Diversity Drives Social Innovation in Germany's Digital Economy

A Study to Substantiate that People with Migrant or Immigrant Backgrounds Are Innovators and Foster Aspects of Social Innovation in Correspondence to the UN's Sustainable Development Goals (SDGs)

Alexander Ruthemeier

1 Introduction

Social innovation—as this book chapter will discuss it from various perspectives—is considered to be among one of the more promising solutions to society's contemporary challenges (Rennings, 2000; Díaz-García et al., 2015). By utilizing the innovative power of often young enterprises and of entrepreneurs, thought leaders in the field try to address challenges regarding sustainability and other societal trials (Fichter et al., 2016). Notable examples within this specific ecosystem include start-ups such as nebenan.de—*connecting neighbors and by that creating a micro-ecosystem* (Businessinsider.de, 2021)—and Enpal, *making renewable energy accessible to everyone and thereby revolutionizing the solar energy sector* (Centurion Plus, 2021). The present work includes an empirical study in close collaboration with the *2hearts community:* "2hearts is a diverse community of people with immigration backgrounds in Europe's tech industry. [They] provide mentorship for young talent and support each other to overcome cultural challenges and succeed in our professions" (2hearts, 2021). Accordingly, 2hearts—as it will be appraised throughout this book chapter—is a group strongly focusing on migrants within the high-tech ecosystem—where the focus of *tech* is mostly on *Internet technologies*. Thus, while the empirical work lies its focus on individuals with migration background in the particular niche of Internet technologies, the remaining aspects of the book chapter do include other high-tech start-ups that are not particularly Internet start-ups. In a similar vein, the individuals making up the 2hearts community are founders (entrepreneurs) as well as employees (intrapreneurs) in these high-tech companies with some form of migrant background. Thus, while the empirical part

A. Ruthemeier (✉)
Steinbeis Institute for Global Entrepreneurship and Innovation, Berlin, Germany
e-mail: alex@steinbeis-igei.com

A. Ruthemeier et al. (eds.), *The Global Impact of Social Innovation*, Management for Professionals, https://doi.org/10.1007/978-3-031-03849-5_2

assesses both the role of first- and second-generation migrants as a leading force behind innovation in high-tech start-ups, the selection of relevant literature throughout this book chapter does not continuously reflect both groups.

The examples above showcase the leading role start-ups can play in tackling society's most pressing problems by applying their innovative prowess. Increasingly, recent studies from various countries and, thus, ecosystems indicate that start-up success is also driven by expatriates, or in general by team diversity, as Vance et al. (2016) describe in their seminal work on expat-preneurs, the overlapping ecosystem of entrepreneurs and expatriates, as described by Ruthemeier (2021). In a similar vein, authors such as Horwitz and Horwitz (2007) or Kwapisz et al. (2014) argue this for the relevance of team diversity in general: More diverse teams benefit from higher chances of innovation and increased decision-making competencies.

This work aims to showcase how individuals with various migration backgrounds, working in the tech industry – with their typical personality traits, as they will be critically discussed within Sect. 2—can support social and eco-innovation (as one of the central aspects of contemporary social innovation) in their respective ecosystems. The author argues that this group of individuals—who tend to be very familiar with a wide variety of personal and societal challenges on the one hand and who are quite open to taking risks when it comes to innovation on the other hand (Beckers & Blumberg, 2013)—might be among the leading forces behind social innovation by applying both their innovative prowess and their traits. While there are entrepreneurs and intrapreneurs within the 2hearts community, the focus of this book chapter is solely on entrepreneurs.

2 Innovators with Migrant Background: Openness, Innovativeness, and Risk-Taking

This section aims to showcase *typical* personality traits of founders with migration backgrounds from different generations of migration. The differentiation is usually made on the timing of the migration and whether it is an own migration experience or attached to, e.g., (a part of) the parents. The first generation in this book chapter can be described as expat-preneurs (Ruthemeier, 2021). While the individuals with migration background, as they are discussed throughout this work, do not necessarily belong to this ecosystem, they consistently appear to be related to it, thus making research on the topic relevant for the research problem described here. At the same time, it can be noted that findings on second-generation migrants in general tend to produce less clear pictures, compared to those of the first-generation migrants themselves (Portes & Hao, 2002; Ziller & Berning, 2021).

Expat-preneurs are described by Ruthemeier (2021) as typically stemming from a background of high education, sharing expatriate and entrepreneurial traits. Thus, expat-preneurs are typically discussed as being on the intersection of the expatriate ecosystem and the entrepreneur ecosystem (Ruthemeier, 2021; Vance et al., 2016). As such, research streams on the topic typically also focus on these two distinct conceptual origins, which becomes evident in the seminal works on the topic (Vance et al., 2017; Vance & Bergin, 2019; Selmer et al., 2019), where often the expatriate focus is assessed. Such *self-initiated expatriates* (SIEs) are, for example, characterized: "The characteristic qualities of initiative, personal responsibility, and self-management of career among SIEs can exist in individuals who are self-supporting and/or self-employed [. . .] as much as it might also exist among those employed in a multinational firm [. . .] or those employed from local markets as local foreign hires [. . .]" (Selmer et al., 2019, p. 9). Expat-preneurs—the study cited here shows—tend to go above and beyond these characteristics, as they "[are] older, had higher positions, had spent a longer time in their current job in the host location, had been expatriates longer, and had been in the host location for a longer time" (p. 17).

In general, research both on expatriates and on entrepreneurs reveals tendencies to particular personality structures or, rather, a prevalence of characteristic traits in both groups (Brandstätter, 1997; Baum et al., 2014; Fraboni & Saltstone, 1990; Peltokorpi & Froese, 2012; Johnson et al., 2003). Thus, characteristics such as openness or extraversion – as examples of the relevance of big five traits – stick out for both groups of individuals (Bhatti et al., 2014; Che Rose et al., 2010; Leutner et al., 2014). Alongside these *classic* variables of contemporary personality psychology, more narrow traits such as risk-taking are typically associated with both expatriate and entrepreneurial behavior (Zeffane, 2015; Chipeta & Surujlal, 2017; Albrecht et al., 2018).

3 Social and Eco-innovation: Challenges and Chances

Social innovation practices are increasingly demanded by the public and, subsequently, pursued by organizations and companies in general and start-ups in particular (Send-EV.de, 2021). This is—in a recent study—showcased by the Covid-19 crisis, where (tech) start-ups take on a leading role in fostering ways to address the resulting challenges. Such start-ups are characterized by a high level of diversity, innovative approaches, and a social consciousness (Send-EV.de, 2021; Yang et al., 2020). This goes in alignment with older findings regarding start-ups focused on issues such as sustainability and the related field of corporate social responsibility (CSR).

Weber (2008) states that within this context, finding the reasons for companies to apply strategies that help establish and implement sustainability; environmental, social, and government (ESG) criteria; and CSR is becoming more and more important (Hopkins, 2003; Kurucz et al., 2008). One possibility discussed is that the intention behind this is to fulfill one's own moral desires and live in line with one's own moral perspective—which is comprised by the philanthropic approach (Carroll & Shabana, 2010; Sasse & Trahan, 2007). Another possibility is that implementing business practices that are socially acceptable represents a business strategy – this assumption is getting more and more popular nowadays. Vogel (2005) argues that implementing such strategies can bring positive outcomes to companies. Therefore, there is a discrepancy between modern research on this topic (Rhou & Singal, 2020) and older points of view which emphasized that social and moral strategies are not compatible with businesses. Older standpoints, often representing a philanthropic approach, take the view that food is a compromise between success financially and socially when it comes to CSR strategies. For example, Babiak (2010) or Zollo (2004) stated that social responsibility is in opposition to the financial aim of businesses. While modern research admits the presence of such contradictions in earlier times, it seems to have changed up to today (Lii & Lee, 2012). This corporate change might be caused by the needs and wishes of today's customers – who demand businesses to pursue goals that are socially responsible. These changes in customers' demands are not least due to different media and political movements (Reilly & Hynan, 2014; Emerich, 2011). This is also related to the topic of legitimacy in companies (Thomas & Lamm, 2012). Because of the customers' demands for corporate legitimacy and the importance for businesses to establish stable and fine connections to their clients, it becomes essential for them to follow such principles (Schaltegger & Hörisch, 2017). An example for this is the diesel scandal of Volkswagen. This or many other scandals of different companies again and again spark the discussion about irresponsible acts of companies and whether those still seem legitimate or not (Czinkota et al., 2014). Unsurprisingly, examples that lead to debates are consistently ones of negative reputation. Therefore, such strategies and practices that are involved in companies' decisions become more and more criticized by society. As a result, the viewpoint gradually changes and people that belong to important companies start to question if, in the end, not showing socially accepted behavior because of the once assumed contradiction to financial success is still advantageous for their companies (Hummel & Schlick, 2016). Instead, people are focusing on the relations between those two constructs – which is significant when it comes to the topic of CSR. Nevertheless, it cannot be fully determined if other reasons like a philanthropic motive for the usage of socially accepted strategies are unimportant or not (Zheng et al., 2015; Wang et al., 2018).

Now that companies seem to accept and pursue strategies that are associated with morally correct behavior, the implementation and application of such practices are crucial tasks – which fall into the area of modern management (Von Werder, 2008). The problem with such an endeavor is that many stages and aspects must be considered—all of which are related to the company's constitution. Employees are urged to behave ethically and socially acceptable, which is helped by creating a company culture that shares suitable values. But not only soft strategies are needed for a successful implementation—changes in corporate governance must be made as well. Another necessary step is to ensure control: structures that affirm adherence to socially responsible behaviors and acts are indispensable.

Typical research results on the topic are summarized concerning ecological aspects of social innovation. This focus is clearly chosen in accordance with findings of Sinha et al. (2020) who argue that ecological challenges tend to be among the most pressing societal matters for developed nations, while at the same time requiring a strong innovation approach to approach not only the environmental impact of these challenges but also the closely related social consequences. According to the Eco-innovation Observatory (2013), eco-innovations are all those innovations that reduce the use of natural resources and are aimed at reducing the release of pollutants over the entire life cycle of a product (EIO, 2013). Eco-innovations are also those innovations that can be identified by the characteristic of providing solutions and for which environmental compatibility is higher than other relevant alternatives, even if the environmental component is not planned from the outset (Hojnik, 2017). Thus, eco-innovation can be seen as one of the central aspects of the overall concept of social innovation, where societal challenges are to be addressed by means of innovative strategies and approaches (Phills et al., 2008; Osburg & Schmidpeter, 2013).

The Eco-innovation Observatory distinguishes the following types of eco-innovation (EIO, 2013, p. 3):

- *Product eco-innovation:* such innovations include both goods and services and are already among the types of eco-innovation developed by the OECD. Eco-innovative products are produced in order to minimize the overall impact on the environment, and the term eco-design is one of the key words in this area.
- *Process eco-innovations:* this type of eco-innovation is already relevant according to the OECD criteria catalogue. The aim is to reduce material consumption during the manufacturing phase; this also reduces costs. Examples are the substitution of harmful inputs during the production process (Reid & Miedzinski, 2008).
- *Organizational innovation:* the introduction of organizational methods and management systems to address environmental issues in production and products (Kemp & Pearson, 2007). Organizational innovations include pollution prevention measures, the implementation of environmental management and audit systems, and supply chain management to prevent environmental damage throughout the value chain (Kemp & Pearson, 2007).
- *Marketing eco-innovations:* this type of innovation involves changes in product design, packaging, product placement, or pricing. The aim is to examine which marketing techniques people can use to buy, use, or implement eco-innovations. In marketing terms, the brand is the key to understanding the process of commercializing products or services (Horbach & Reif, 2018).
- *Social eco-innovations:* here, the human element must be seen as an integral part of the discussion on resource consumption. Social eco-innovations encompass the market-based dimensions of behavioral and lifestyle changes and the resulting demand for ecological goods and services. Some companies are experimenting with user-driven innovations (i.e., developing the functionality of new goods with stakeholders, thereby limiting and reducing the risk of unnecessary product features). The social dimension of eco-innovation also includes the creative potential of society with various examples of innovative green living concepts. This also includes the sharing economy (i.e., approaches that are geared to a lower consumption of resources).
- *Systemic eco-innovations:* these are a series of networked innovations that create completely new systems with specific functions and reduced overall environmental impact.

These different types of eco-innovations thus also reflect the entire spectrum of developments in society as a whole. Process and product innovations are an approach of eco-innovations.

Rennings pursues a completely different approach to the typification of eco-innovations. According to him, there are four explicitly distinguishable types of change toward sustainable development:

1. Technological
2. Social
3. Organizational
4. Institutional innovation

Even if these approaches are applied in the different types of eco-innovations of the Eco-innovation Observatory, according to Rennings, it is primarily the enrichment of the political aspects of institutional eco-innovation that have not been sufficiently appreciated by the Eco-innovation Observatory (Rennings, 2000; Rennings, 2005).

However, the Eco-innovation Observatory with its systemic eco-innovation has already taken up the network idea, which is of central importance, especially with regard to the development of socially relevant innovations. Fundamental ecological innovations always also require the support of individual political actors, be it through the creation of the corresponding standard systems, support with subsidies, or the introduction of environmental labels. The Eco-innovation Observatory does not find any real starting points for these political components. In the following, the typification of eco-innovations according to Rennings' approach will be examined primarily in relation to this political determinant of ecological innovations relevant to society.

Evolutionary approaches are useful to cope with radical technological change; in contrast to neoclassical economics, they pursue a broader approach by considering technological path dependencies (Rennings, 2000). Rennings proceeds from an evolutionary framework that leads to an ecological and socially determined irreversibility through which social and institutional innovations can be strengthened (Rennings, 2000).

Among the special features of eco-innovation are the problem of dual externality, the regulatory push/pull effect, and the increasing importance of social and institutional innovations (Rennings, 2000, pg. 319). Double externality can be assumed to the effect that although the necessity of a specific environmental policy in environmental economics is not doubted, an additional theoretical justification is also required for a coordinated environmental and innovation policy (Rennings, 2005, marginal no. 127).

Goals of social and ecological innovation are summarized within the framework of the *Sustainable Development Goals* (SDGs): therein, a total of 17 individual but mutually connected overall goals for human development are summarized in an effort undertaken by the United Nations. Introduced within the Post-2015 Development Agenda, these goals aim to shape economic and societal development over the next decade. At the same time, these goals form the foundation of the present empirical work: as they are shaping the overall economic and scientific take on social development, it seemed appropriate to also assess tech companies' social innovation approach on this overarching framework.

Contemporary research on the implementation of the SDGs points out that innovative approaches seem necessary to reach these goals (Sinha et al., 2020). While societal changes are described to be a necessary prerequisite to achieving sustainable change patterns, technological developments might be among the most influential ways to address these challenges. Thus, it can be argued that it is a necessity for the contemporary economic environment to innovate and research new approaches to address the individual development goals (Geibler et al., 2019). Especially collaborations with young firms, start-ups, and entrepreneurs are described to be among the possible solution for fostering growth in this area (Weforum, 2021).

4 Empirical Study Regarding the Role of Founders with a Migration Background on Social Innovation

4.1 Approach and Study Design

The present study seeks to address the role of founders with migrant backgrounds—and their distinct personality traits—in fostering eco-innovation, thus sustainability-oriented innovation projects. Therefore, a quantitative study was conducted to approach this overall goal.

A variety of individual scales were utilized in order to assess the research problem. As the introduction of this book chapter already indicated, the empirical work aimed to assess how far founders with migration backgrounds are able and willing to contribute to social and eco-innovation in their respective fields. Thus, the role of founders with migration background as innovators in this field was addressed utilizing a framework provided by the UN's SDGs. In order to assess this question, the present study aimed to give an overview on potential indicators of eco-innovation approaches within this ecosystem and tried to showcase how personality factors of founders with migration backgrounds might be connected to these approaches. The following section describes which scales (and items) formed the empirical study, thus allowing the reader to understand the statistical results more concisely.

In a first step, sociodemographic factors were recorded that describe the respondents in the context of the ecosystem – in addition to their educational background, gender, and age, their founding and migration experience was also considered, which was surveyed by means of corresponding items. A distinction was made as to whether the respondents are active as founders themselves or work as employees in a tech company. In a first step, a comparison regarding their key characteristics (see variable selection) utilizing a variance analysis was conducted to assess potential differences between the groups; however, it was shown that the two groups seem comparable regarding their personality structure and their approach toward innovation. Therefore, for the subsequent analyses, no distinction between the groups will be considered. It was also asked what type of migration experience they had, i.e., whether they themselves were first-, second-, or third-generation migrants and whether their migration was voluntary or forced due to external reasons.

Following this, several aspects of personality that seemed relevant were addressed in a further step. A conscious decision was made not to examine (only) the established traits such as those of the big five model but to focus primarily on those personality traits that researchers such as Lounsbury et al. (2009) also refer to as narrow personality characteristics and thus seem suitable for addressing the highly specific nature of the present research topic. In this regard, as Table 1 indicates, the concept of appreciation of creativity was addressed first: based on a questionnaire developed by Jauk et al. (2019), it was investigated to what extent the respondents show an appreciation of creative behaviors, thus following the assumption that such appreciation should be one of the necessary foundations of innovation. Eco-innovation, according to the assumption of this study, is thereby based both on innovation as such and on eco-thinking on the other hand, which is why also in the context of this empirical observation, not only the appreciation of creativity but also the appreciation of sustainability was addressed. Utilizing the scale developed by Carroll and Shabana (2010) to capture the appreciation of sustainability, this complex of topics was thus also addressed in an empirical manner.

On the basis of these specially developed questionnaires, it was investigated to what extent the respondents assume that their company (or the company in which they are also active as employees) is fundamentally dedicated to the issues of sustainability and social responsibility. In this regard, a total of three scales (see Table 2) were designed to examine the intensity with which the company addresses the topic, the extent to which different aspects of sustainable development are addressed, and the extent to which attention is paid to the individual goals of the United Nations sustainability goals.

To analyze the relationships between the scales presented here, the present study followed a correlative approach in particular, which is supported by several different analyses. On the one hand, it shows to what extent founders and employees within the high-tech industry with migration backgrounds differ from one another depending on selected sociodemographic characteristics and, on the other hand, to what extent the characteristics presented here in Tables 1 and 2 are correlated with one another. These approaches condition the statistical procedures presented below, guiding the analyses in Sects. 4.3 and 4.4.

4.2 Sample

As mentioned in this chapter's introduction, the sample was acquired with the esteemed help of the 2hearts community, a community of individuals with migration backgrounds (either first or second generation). With their focus on cultural diversity

Table 1 Appreciation of sustainability and creativity

Appreciation of sustainability	I would pay more to buy products from a socially responsible company	
	I consider the ethical reputation of businesses when I shop	
	I avoid buying products from companies that have engaged in immoral action	
	I would pay more to buy the products of a company that shows caring for the well-being of our society	
	If the price and quality of two products are the same, I would buy from the firm that has a socially responsible reputation	
Appreciation of creativity	1 – I stop often to photograph nature during long car rides, and therefore I am sometimes late	5 – When driving by car, I try to reach the destination asap with no time to admire the surrounding
	1 – My ideas are often considered "impractical" or even "wild"	5 – My suggestions are usually established ones, which have worked before
	1 – In school, I enjoyed physical education very much, because the rules were always explicit	5 – Art was one of my favorite subjects at school
	1 – I admire artists and writers the same amount as medical doctors and lawyers	5 – The work of medical doctors and lawyers is more important than that of artists and writers
	1 – I like to draw pictures only of real people and real objects	5 – I like to draw abstract pictures only
	1 – I am nice and calm but do not have so many ideas	5 – I am lively and full of ideas and therefore do often not do what others might expect
	1 – I usually do things in a widely accepted manner	5 – I normally try to find new ways to do things
	1 – I like to concern oneself with facts	5 – I like to concern oneself with ideas and theories
	1 – I am the kind of person who prefers solving everyday problems	5 – I am the kind of person who prefers to solve everyday problems in unconventional ways
	1 – I believe that the first idea when trying to solve a problem is almost always the right one	5 – I typically take some time to solve problems because I think about numerous different solutions
	1 – Before making a gift, I ask what the person actually needs for his/her birthday	5 – I like to give self-made birthday presents, even if the person does not need them
	1 – I buy practical furniture, the appearance of which is not so important	5 – I have a preference for unusual combinations of furniture, which sometimes makes others chuckle
	1 – I come up with jokes spontaneously which others might not find funny	5 – I like to tell established jokes

in the field of high tech, the community managers were able to strongly contribute to the success of this study, which was supported by the researcher's own professional network, where additional participants were recruited from. Thus, a total of $n = 231$

Table 2 Social innovation approaches

Start-up sustainability—intensity	My/our company. . .
	Actively tries to contribute to (at least) one of the UN's Sustainable Development Goals
	Seeks to address social issues within its business model
	Classifies itself as a sustainable company
	Addresses issues of climate change proactively
	Adheres to strict corporate social responsibility guidelines
	Uses social impact investments
	Follows in its financial decision-making the ESG criteria
Start-up sustainability—areas	To which extent does your company's business model actively address the following aspects of sustainability [1–5]:
	Supply chain management
	Circular economy
	Support for developing countries
	Sustainable engineering
	Construction and real estate
	Mobility and transportation
	Hospitality industry
	Energy
	Sustainable management approaches
	Sustainable innovation

participants could be acquired for the present study, from which a final sample of $n = 197$ participants was selected for the analyses (the remaining ones had to be removed from the sample due to incomplete or missing data). The distribution of founders and employees was close to equal, with 89 individuals describing themselves as founders and another 92 as employees (the remaining individuals described themselves as students). For the analyses, no further distinction was made between the groups, as the initial comparison showed that such a distinction cannot be rooted within the available data, as interindividual differences within the sub-samples outweigh differences between the groups. 71 female and 125 male participants took part in the study. Figure 1 showcases the migration background of the participants.

Thus, the data indicates that a majority of participants describe themselves as second-generation migrants, thus the children of first-generation immigrants (either one or both parents). Another 30% of the sample consists of actual first-generation immigrants, with another 5% being third-generation migrants. The nature of the (im-)migration was for the biggest part of the sample a voluntarily one, with only 16.8% of the overall sample describing the migration experience to be of a forced nature. Furthermore, it was revealed that most individuals within this sample group hold educational degrees equaling bachelor's or master's degrees, with master's degrees being the majority, being held by a total of 67% of individuals within this

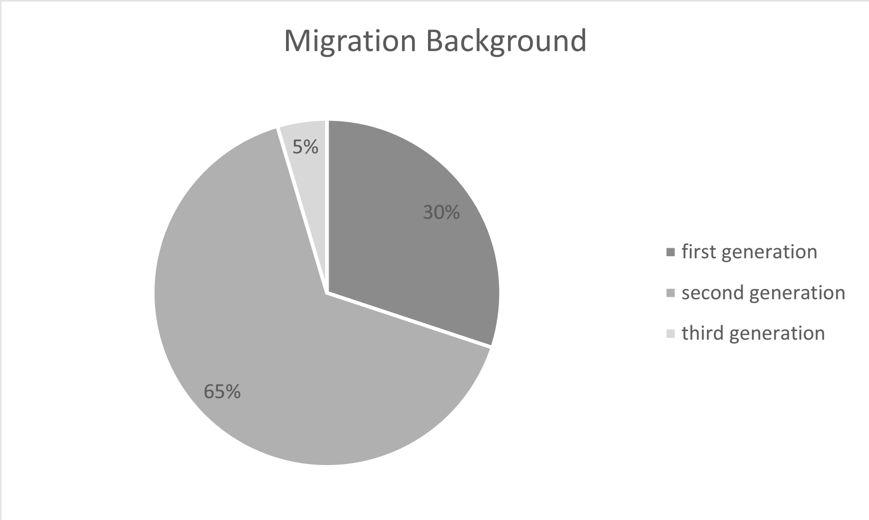

Fig. 1 Migration backgrounds of participants

Table 3 Reliability own developments

	Alpha	No. of Items
Start-up sustainability – intensity	0.806	6
Start-up sustainability – areas	0.907	10
Sustainable Development Goals	0.930	17

sample. The average age of the individuals within the sample was $M = 33.64$ years, with a range spanning from 21 to 53 years.

4.3 Descriptive Results: An Overview

In order to assess whether—and in how far—companies actually aim to achieve societal goals, three distinct scales were developed; the following table showcases their respective psychometric quality indicated by the computation of Cronbach's alpha values. As Tavakol and Dennick (2011) explain, this value is considered to be an indicator of item-scale fit; thus it analyzes the overall relationship of the individual items forming one scale.

As Table 3 showcases, alpha indicators within the very high range were observed for all three scales, indicating high intercorrelations between the individual items. Thus, it seems appropriate to summarize these individual items to the respective scales. At the same time, this indicates a surprising result for the second scale, which is concerned with the individual aspects of sustainable development. The overall research theme of these ten items was "To which extend does your company's business model actively address the following aspects of sustainability?" with the individual items addressing subjects like supply chain management, circular economy, or energy consumption, therefore mostly independent areas in which sustainable innovation might be implied. The high reliability indicator alpha = 0.907, however, indicates that these individual subjects seem highly correlated, implying that social innovation focused start-ups tend to apply a broad focus to the topic, not limiting their innovative work to individual aspects of sustainability.

This seems to apply to the contribution to the UN's Sustainable Development Goals to an even stronger extent. Utilizing a total of 17 items, the entrepreneurs were asked to indicate how far their respective companies aim to address these individual goals. The computation of the reliability index for these 17 items indicates that here—as well—a strong overlap seems to be given: an alpha = 0.930 implies that these individual items with their respective associated sustainability goals can be treated as one universal scale, indicating that companies who tend to focus on one sustainability goal, just as much seem to focus on the other ones.

4.4 How Individuals with a Migrant Background Can Shape and Foster Eco-innovation

Referring to the explanations regarding the structure of the questionnaire, the scales for openness to creativity and attitude toward sustainability will be discussed below. On the one hand, the corresponding distribution of the respective values is presented below before their relationship to each other is shown. Table 4 shows the descriptive statistics for these scales—both of them being five-point Likert-type scales.

The gaze toward the respective means of both scales indicates a generally favorable attitude both toward sustainability ($M = 4.327$) and toward creativity ($M = 3.572$), which lie significantly above the theoretical mean for both scales, which would be—based on the 1–5 Likert scales—$M_{theo} = 3$. This indicates that the individuals with migrant backgrounds making up this sample tend to showcase above-averagely positive attitudes toward these two concepts: they seem to be more open toward creativity and more open toward sustainability than the average person. Also, a weak correlation between these two attitudes was observed within the data ($r = 0.158$, $p < 0.05$).

Furthermore, the relationship between the three variables regarding the entrepreneurial approaches toward sustainability (see Sects. 4.1 and 4.3) was assessed, with Table 5 showcasing the correlations between these three variables.

This depiction clearly shows that there are strong overlaps between these three scales that were utilized to assess the entrepreneurial approach toward sustainability,

Table 4 Descriptive statistics attitudes

	Minimum	Maximum	Mean	Std. deviation
Attitude toward sustainability	2.00	5.00	4.3265	0.67140
Appreciation of creativity	2.10	4.80	3.5720	0.51474

Table 5 Intercorrelations social innovation

	(1)	(2)	(3)
Start-up sustainability—intensity (1)	1	0.684**	0.647**
Start-up sustainability—areas (2)	0.684**	1	0.530**
Sustainable Development Goals (3)	0.647**	0.530**	1

**indicates significance at the 1% level

Table 6 Correlation attitudes * social innovation

	Attitude toward sustainability	Appreciation of creativity
Start-up sustainability—intensity	0.117	0.155*
Start-up sustainability—areas	0.058	0.108
Sustainable Development Goals	0.035	0.047

*Correlation is significant at the 0.05 level (2-tailed)

thus complementing the initial findings regarding these scales as they were described within the previous subsection of this book chapter.

The final question to be solved by this empirical study was how far founders' individual characteristics play a role in predicting their actual and factual approach toward sustainability. Thus, in a first step, a correlation analysis was conducted to assess how far the entrepreneurial personality (here operationalized as their attitude toward sustainability and their attitude toward creativity) is related to their actual sustainable actions. Table 6 shows the results of this analysis.

This depiction clarifies that only marginal relationships between these two clusters of variables could be observed: the general number of areas or goals to be addressed does not seem to be correlated to their overall attitudes. However, the intensity with which they follow their sustainability-related goals—and thus with which they pursue eco-innovation—seems to be correlated with their appreciation of creativity. Also, the attitude toward sustainability at least shows a trend toward a positive relationship to this variable as well, as the results indicate ($r = 0.117$, $p = 0.102$). The small effects identified here can partially be explained with a gaze toward the descriptive statistics, where at least for the attitude toward sustainability, a strong potential for a ceiling effect—and thus for a significant range restriction—could be observed. Authors such as Sackett and Yang (2000) argue that such a statistical effect can lead to the problem that existing effects tend to be undervalued to the restricted range of the variables.

Additionally, the present study allowed to assess differences in attitudes based on sociodemographic characteristics. This analysis was centered around the distinction between first- and second-generation individuals within the sample, whereas third-generation individuals were excluded from this particular analysis due to their comparatively smaller sample size. A set of t-tests was conducted for the individual scales used within this empirical study, with Table 7 showcasing the individual means for both subsamples for the regarding scales. Those scales, where significant differences were identified, are marked accordingly, with the detailed results of the t-tests being presented within the appendix.

Table 7 Descriptive comparison first and second generation

Type of migration background		N	Mean	Std. deviation
Start-up sustainability—intensity	First generation	59	30,904	124,041
	Second generation	128	32,396	116,126
Start-up sustainability—areas	First generation	59	25,831	154,932
	Second generation	128	29,832	121,517
Sustainable Development Goals	First generation	59	24,718	116,157
	Second generation	128	27,281	120,425
Attitude toward sustainability***	First generation	59	45,864	40,491
	Second generation	128	41,938	74,408
Appreciation of creativity	First generation	59	35,358	42,564
	Second generation	128	36,188	55,341

***Significant differences between first and second generation

While a tendency toward significance could also be identified for the areas of start-up sustainability ($p = 057$), an actually significant difference between first- and second-generation migrants could only be identified for the attitude toward sustainability, where first-generation migrants showed significantly higher values, thus expressed an even more positive attitude toward the idea.

5 Conclusion

This book chapter aimed to showcase—both from an empirical and a theoretical point of view – the important role individuals with a migration background can take on in fostering social innovation. The study described here showed this both for founders within the industry and for employees, as well as for the groups of first- and second-generation migrants. However, no further distinction between these groups was made within this study, indicating overall a strong level of homogeneity within the industry. Accordingly, future research might be advised to consider the specific contributions of both first and second migrants utilizing a more in-depth analysis of their respective personality profiles and developmental contributions. However, the relevant role this overall ecosystem takes on in tackling contemporary societal challenges could be clarified throughout this work.

This also becomes evident with a gaze toward developments in different countries, where business-oriented reports increasingly point out that the start-up ecosystem, which is undoubtedly among the driving forces when it comes to societal change and innovation, is increasingly shaped by the role of individuals with a migrant background. Cultural diversity, both the author of this chapter and a wide variety of other experts in the field (Shen & Kram, 2011; McNulty & Hutchings, 2016) argue, can and should not only be viewed through the lens of the potential challenges it might bring but also be discussed as an important contribution to a contemporary, modern society: the present work and the studies cited within clearly indicate how individuals with a migration background could benefit society by fostering innovation focused on social and ecological issues.

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Alexander Ruthemeier began his career in financial services before he moved from Singapore to Berlin working for Rocket Internet, wefox, and Element, among others. As a seasoned entrepreneur and founder of Expatrio and DEGIS, he is also pursuing his academic path as founding director of the Steinbeis Institute for Global Entrepreneurship and Innovation where he researches and teaches about migrant entrepreneurship.

Matters.Global: Aligning Crowd Creativity to Accelerate Progress for All

How Unleashing Swarm Creativity Can Help Collective Problem-Solving and Drive Social Change

Seda Röder

1 Introduction

At a cattle exhibition in 1906 in Plymouth, the British statistician and scientist Francis Galton came across a weight-judging competition (Galton, 1907), where a massive ox was placed on display and members of the crowd were asked to guess the weight of the beast. Approximately 800 visitors tried their luck and submitted their predictions in order to win a prize. Some of the contestants were butchers and farmers, "experts" which Galton expected to be relatively accurate in their estimations, whereas others were considered "average voters."

Galton was a firm believer in societal hierarchies and biological racism, proposing that empirical evidence exists to support or justify racial discrimination, inferiority, or superiority (Wikipedia, 2021). He was of the opinion that in order to keep societies prospering, power and control should remain with a privileged few. As a result, he saw in this contest a unique live experiment through which he sought to prove that the nonexperts were incapable of accuracy in their decision-making. His hope was then to make an analogy to the democratic voting process, showing that the mediocre voter was actually doing more harm than good and therefore should be excluded from the democratic process.

To prove his point, Galton requested to borrow the ballots and ordered and analyzed them according to statistical methods. He wanted to reveal that if the crowd was acting as "one," the median judgment would be very poor. However, contrary to his expectations, the crowd's guess was quite accurate. The collective median added up to 1197 pounds, whereas the real weight of the ox was 1196 pounds! Surprised with the remarkable precision of this outcome, he later wrote in

S. Röder (✉)
The Sonophilia Foundation, Munich, Germany

The Mindshift. Global, Salzburg, Austria

A. Ruthemeier et al. (eds.), *The Global Impact of Social Innovation*, Management for Professionals, https://doi.org/10.1007/978-3-031-03849-5_3

his memoirs: “The result seems more creditable to the trustworthiness of a democratic judgment than might have been expected” (Galton, 1908).

What surprised Francis Galton 115 years ago is what lies at the heart of this article. The concept of the *wisdom of the crowd* is not only relevant when it comes to making intelligent estimations but also in creative and collaborative problem-solving. Taking the notion of crowd intelligence to a new level, I argue that for better decision-making and faster progress, we can and should tap into the collective creativity of more people, rather than relying on the judgment of a few “experts.”

This article explores how people who are given the chance to utilize their creative confidence can help innovate and contribute to the solution of big problems against all odds. After the discussion of some best-practice cases, I highlight the *matters. global protocol*, an open-source, common good digital initiative to unleash and align collective intelligence and creativity to address global problems (matters.global, 2021).

2 The Gatekeepers of the Status Quo

We live in a world obsessed with not wasting resources, yet when it comes to human potential, we seem somewhat complacent.

According to the latest numbers compiled by the Austrian Statistics Agency, only 0.02% of the entire world population are recognized experts in any innovation and/or creativity-related field, including arts, research and development in agriculture, climate, medical or environmental sciences, as well as societal innovation (Statistik, 2018). Translated into real-world numbers, this ratio indicates that only 1 person out of 5000 is considered to be making a significant contribution toward solving humanity’s big problems or pushing forward innovations. In other words, only 0.02% are actively involved in shaping our future, thus holding our planet’s destiny in their hands. The rest are passive followers.

However, since there are more than seven billion people on the planet, this number seems, to put it mildly, ridiculously low. Considering the myriad emergencies our world faces, we must start allowing the amateurs, outsiders, and nonexperts to enter the future-shaping process. The gatekeeper attitude adopted by people who believe they’ve gained enough experience to know *how* certain things are to be done and *by whom* is too often flawed.

In their book *Superforecasting*, Philip Tetlock and his co-author Dan Gardner argue that the average expert is “as accurate as a dart-throwing chimpanzee” when it comes to making authoritative predictions about the future. Tetlock, a political scientist and professor of psychology at the University of Pennsylvania, came to form this opinion after having attended a committee on American-Soviet relations at the National Research Council. For 20 years—between 1984 and 2004—he observed how 284 highly renowned experts with an average experience of 12 years or more failed miserably in 82,361 forecasts about the future. The areas of specialty, academic degrees, or access to classified information had no effect whatsoever on the accuracy of the estimations; experts were nearly always off.

However, they almost never admitted a systemic flaw in their judgment. Even when they were confronted with the wrong results, experts believed in their "almost hit." "There's often a curiously inverse relationship between how well forecasters thought they were doing and how well they really did," Tetlock concluded (Tetlock & Gardner, 2016).

The situation is no different when it comes to scientific breakthroughs. The gatekeepers of almost any given domain make it nearly impossible to publish or disseminate research or opinions that come from outsiders or diverge from the current status quo of that field. This may make the situation a life or death battle for acceptance.

For example, in 2005, the Australian scientist Barry J. Marshall was awarded the Nobel Prize in medicine for his discovery of a stomach ulcer-causing bacteria, the *Helicobacter pylori*. However, this hypothesis was not accepted without a fight. Although Marshall was not entirely an outsider in the field of medicine, for 20 years, he was ridiculed by his scientific peers, including his own boss, while the entire establishment was convinced that bacteria couldn't live in the acidic environment of the stomach. In order to prove his point, Marshall swallowed a petri dish of *Helicobacter*, exposing himself to the dangerous pathogen, and exhibited that the bacteria could in fact infect a healthy person and cause gastritis. Later, Marshall developed less invasive treatments for the infection using antibiotics which made stomach surgery somewhat obsolete.

Seven years before his Nobel Prize nomination, he said in an interview:

> It was a campaign, everyone was against me. But I knew I was right, because I actually had done a couple of years' work at that point. I had a few backers. And when I was criticized by gastroenterologists, I knew that they were mostly making their living doing endoscopies on ulcer patients. So I'm going to show you guys. A few years from now you'll be saying, 'Hey! Where did all those endoscopies go?' And it will be because I was treating ulcers with antibiotics. (Hole, 1998).

Marshall's story is not a rare account. A third of all scientific breakthroughs, including Nobel-winning discoveries, have been rejected, ignored, or disregarded by the expert community the first time they were presented (Campanario & Acedo, 2007).

Similarly, contributions that come from nonprofessionals, amateurs, or outsiders often face firm resistance.

For instance, a few years ago, a retired German statistics professor, Thomas Royen, proved a long sought-after mathematical theorem, the Gaussian Correlation Inequality (GCI), using relatively elementary tools. However, he was a no-name in the field of statistics. Therefore his proof went largely unrecognized for 3 years and wasn't published in peer-reviewed journals. The scientific community only recognized the news after two up-and-coming Polish mathematicians came across an obscure, Indian journal where Royen's work had appeared and promoted his solution (Science Alert, 2017).

According to a recent compilation of facts by the renowned platform Valuer, only 20% of innovations have been created by a proven expert within the given field

(Bodniece, 2019). Although there's more than enough evidence speaking for a more inclusive innovation environment, our understanding of progress still seems to be stubbornly connected with the idolization of hyper-specialized expertise embodied by one genius person.

However, some very successful initiatives that align and leverage diverse crowd creativity may help us rethink how we conduct innovation projects, especially when it comes to social innovation.

3 Counting on the Citizens

In 2011, after having published the results of the aforementioned 20-year study, Tetlock and his wife Barbara Mellers, a Upenn psychology professor, received an invitation to participate in the Aggregative Contingent Estimation Program (ACE). This was a newly established US intelligence program under the umbrella of the Intelligence Advanced Research Projects Activity (IARPA), which aimed to dramatically enhance the accuracy, precision, and timeliness of intelligence forecasts for a broad range of event types (ACE-IARPA, 2010). The program was basically a contest in which five researcher-led teams competed for the best forecasting capabilities.

For the following 4 years, every day at 9 a.m., teams submitted their predictions to wicked questions in various fields ranging from economics, healthcare, and geopolitics. In contrast to other teams composed of decorated experts and academics, Tetlock's team, dubbed "The Good Judgment Project," comprised of volunteers drawn from the general public via open calls. In its second year, The Good Judgment Project was performing so undeniably well—the team even repeatedly beat the intelligence community's own analysts by a margin that remain classified—that IARPA decided to let the other university and expert-run teams go and continued the experiment exclusively with The Good Judgment Project (Tetlock et al., 2017).

The questions that were being asked in the ACE-IARPA experiment came from the so-called wicked domains with open outcomes and no right or wrong answers, and still the nonexperts did extremely well (R. M. Hogarth et al., 2015). In "kind" or "fixed domains" with questions that have a right or wrong answer, the crowd decision is even more precise. A great example is the TV game show *Who Wants to Be a Millionaire?*, where the audience polls hit the right answer approximately 95% of the time! (Millionaire Wiki, 2021).

Contestants on *Who Wants to Be a Millionaire?* aren't the only ones who count on collaboration with the general public and amateur scientists when they need answers. Well-established institutions, such as NASA, also regularly rely on collaboration with nonexperts when millions of different data points need to be scanned, evaluated, and analyzed. One such recent project, called *The Exoplanet Explorers*, led to the discovery of a system of at least five exoplanets in 2017. The project was launched on Zooniverse and attracted 27,219 volunteers who collaborated and evaluated the data sent to earth by the Kepler space telescope. This was the first multi-planet system discovered entirely through crowdsourcing (Dunford, 2021).

The abovementioned cases of crowd collaboration perform well because they're built upon the understanding that no single individual can have all the answers. Complex and unexpected innovations emerge when many individuals from diverse backgrounds join forces to put the different parts of the puzzle together. In the end, no single person or institution will take full credit or wholly own the result, but as long as the problem is solved, that's a step forward for humanity.

In fact, this kind of open approach may be the only way forward, especially when it comes to solving wicked problems involving intercultural collaboration in complex geopolitical and societal environments.

4 Crowdsourcing Social Change

Innovations and change, whether technological or societal, are rarely readily embraced. The "new" is never easy to establish, but it's even more difficult if it is introduced by external parties.

It is understandable that, due to countless disappointments and unpleasant experiences, underprivileged communities have a particularly skeptical view on products or services introduced by outsiders—especially when the specific needs or cultural norms of a community are rarely acknowledged. However this kind of ignorance torpedoes even the well-meant efforts, like in the following case described by Everett M. Rogers in his groundbreaking book *Diffusion of Innovations*.

An intensive 2-year campaign by public health services in Peru aimed at persuading 200 families to boil drinking water in the village of Los Molinos in order to avoid the incidence of typhoid and other waterborne diseases. At the end of the 2-year period however, the campaign was viewed largely as a failure, as it encouraged only about 5% of the population, 11 families, to adopt the innovation.

> Reasons for the relative failure of the diffusion campaign in Los Molinos can be traced partly to the cultural beliefs of the villagers. Local tradition links hot foods with illness. Boiling water makes it less 'cold,' and hence, appropriate only for the sick. But if a person is not ill, he is prohibited by village norms from drinking boiled water. [...] An important factor affecting the adoption rate of any innovation is its compatibility with the values, beliefs, and past experiences of the social system. [...] The public health agency should have understood the hot-cold belief system, as it is found throughout Peru. (Rogers, 1983)

Many social change efforts fail because the onboarding and alignment of the local forces fail. In fact, social change and innovation are most effectively introduced when communities who are meant to adopt the change are also the owners and coinventors of it.

Perhaps one of the most striking examples of community-driven change projects is the St. Lucia parrot conservation program.

The St. Lucia parrot is a beautiful, native bird found solely in the Caribbean island of St. Lucia. In 1977, there were only 100 parrots left on the island, endangering the species to extinction before the end of the century. Paul Butler, a fresh graduate, was offered a job as conservation adviser by the forestry department in St. Lucia but without any significant resources provided. Butler knew that he couldn't make the effort a success unless he sufficiently onboarded the inhabitants of the island, who occasionally hunted the birds or trapped them to keep them as pets.

Thus the initial kickoff was designed to appeal to St. Lucians' pride in the fact that they alone had this parrot, slowly causing St. Lucians to embrace their native bird. In the years following the kickoff, the community worked collectively to integrate the parrot as part of their identity; ministers cited Bible verses on stewardship, while volunteers dressed up as parrots in local schools and distributed t-shirts. Even the local telecoms company printed phone cards and stamps with the parrot depicted on them. The collective campaign caused a dramatic rise in public awareness and support, and exterminated parrot shootings altogether, helping the birds thrive on the island (C. and D. Heath, 2011).

In many countries around the world, citizens are increasingly producing innovative solutions to their collective problems which governments fail to address. Sometimes these solutions come from the most unexpected corners, as the following case illuminates:

Xóchitl Guadalupe Cruz López was merely 8 years old when, in 2018, she invented a solar-powered water heating device made entirely out of recycled materials for her community in Chiapas, Mexico. Her intention was to make a positive impact in the poorest region of Mexico, where the majority of people do not have reliable access to running water. In an interview with El Universal, she explained:

> These are low-income people who don't have the possibility to buy heaters, so what they do is cut the trees to get firewood, which affects the world through climate change. So, I made this heater, from recycled objects that don't hurt the environment. (El Universal, 2018)

López named the heater "warm bath," which will soon be made available to her community at a very affordable cost.

5 Aligning Collective Creativity

> *The future is already here — it's just not very evenly distributed.* US-Canadian Cyberpunk author William Gibson

What if most of the problems our world is facing were actually not problems of scarcity but rather of distribution? What if we could make progress much faster by aligning collective creativity and problem-solving skills in a more efficient way?

As Hans Rosling has demonstrated impressively in his 2018 book *Factfulness*, the current state of the world is considerably better than we might think (Rosling et al., 2018). The abovementioned cases are just bright spots of collective creativity and collaboration supporting this theory. In addition to communal efforts, governments, consulting agencies, and nonprofits make public calls and grant prizes to solve problems in many different areas. Thousands of people compete for those prizes and submit ideas for solutions, some of which win, while others get implemented.

Unfortunately, many submissions end up in a dustbin. The institutions that make these calls rarely publish different approaches of the "non-winners," nor do they strive for interdisciplinary collaboration. In doing so, they cause the solutions to remain in their respective silos, making it nearly impossible for the answers to be interlinked or solution pathways to be crossed. However, systematically exploring interdisciplinary dialogue and collaboration may be extremely beneficial when trying to solve multifaceted problems.

To inspect this hypothesis, the Sonophilia Foundation launched matters.global, a technology infrastructure experiment designed for aligning swarm intelligence and creativity to address complex, global issues.

At its core matters.global is an attempt to create a one-stop platform that systematizes and orders the fragmented approaches that have been discussed above—citizen science, collaborative problem-solving, crowdsourcing, and funding—and gives everyone who's interested the opportunity to contribute.

5.1 In the First Level, Matters.Global Creates a Problem Repository

Too often, people solve the wrong problems, wasting time and resources. Consider the following account:

> In 1999, the development organization WaterAid funded the construction of latrines in some villages in northern Bangladesh. In these villages, many people lacked toilets and defecated outdoors, a practice which leads to the mass spread of diseases. [...] The world's development organizations have been thinking about open defecation as a hardware problem: '*If we just distribute enough latrines, we will solve the problem*'. But it wasn't that simple. For some villagers, the latrines seemed like a solution to a problem that they hadn't asked to be solved. Sometimes the latrines would be disassembled, with their parts used for other purposes. In one village in Malawi, no one used their fancy latrines at all. Umelu Chiluzi, a development worker, said, *'If you ask them, why are you not using that latrine? They would tell you, 'Are you sure I should put shit in that structure . . . that is even better than my house?'* (C. & D. Heath, 2017)

With such cases in mind, matters.global task force developed a simple game called "99problems," where problems are submitted by individuals, as well as institutions. Problems can be stated on many different levels, ranging from personal issues to those faced by wider communities or entities; this enables different gradings in language when defining a problem. In this first step, there are no restrictions as to what can be submitted. The aim is to have the largest possible catalogue of problem definitions from the most diverse perspectives: which we call the "Quantum State", where many different definitions of the same problem can co-exist.

5.2 In the Second Level, Matters.Global Facilitates Problem Connection

At this stage, the problems that have been submitted are sorted and linked using similarity and sentiment analysis algorithms, as well as human judgment. The interlinking of problems is also crowdsourced, allowing even more people (including those who didn't submit problems) to contribute by connecting them. As a result, problem clusters start to emerge and can be visualized on a heat map. This way, resources can be allocated more efficiently, thereby enabling more urgent problems to get priority treatment.

5.3 In the Third Level, Matters.Global Incentivizes Solutions and Fosters Collaboration

Each problem, after having reached a certain threshold of acceptance by the crowd, can be attached to a blockchain wallet. Now teams can be formed while crowdfunding tools can be enabled to generate funds that go toward solving the problem.

5.4 As a Result

Matters.global is designed to be a decentralized and scalable ecosystem that attempts to make the world's problems computable. Simultaneously, matters.global is a barometer for the world's global state, which is called the "Matters.Global Problem State" (MGPS). At any given moment the MGPS knows two things: "What are all of the problems that still exist right now?" and "What are the problems that have been solved?" As new problems are added and more problems are solved, new global states emerge. The differences between these states can be expressed as the rate of progress in the world. Given that the power of identifying and solving problems comes from human creativity, we can also consider matters.global to be a machine that computes a metric for creativity in the world.

A computable database of the world's problems has immense potential for the common good and progress of humanity. Firstly, through the matters.global protocol, we can finally gain an objective understanding of the state of the world's problems as defined by the people at any given moment. Secondly, matters.global makes the problems and problem relatedness tangible, thus allowing more people to become potential contributors for locating solutions. This way, we can scale up the number of problem-solvers unleashing massive swarm intelligence, while also raising awareness around how certain behaviors or actions at one end of the world are connected with an outcome at the other end (S. & M. Röder, 2020).

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Seda Röder aka “the piano hacker” is an adventurous musician and entrepreneur devoted to unleashing and channeling creativity in society and organizations. In addition to her artistic work, she is a sought-after speaker, writer, and consultant to DAX listed companies with her company The Mindshift. Global. Furthermore she is the founder of the Munich-based Sonophilia Foundation, a nonprofit organization dedicated to advancing the scientific research of creativity and critical thinking.

Global Social Innovation Starts with European Digital Platforms

Philipp Plugmann

1 Developing Innovative Environments as a European Social Strategy

It is at the point of interaction between global social innovations and a regional perspective that European digital platforms will gain in significance in the first place. The new digital business models are changing the rules of the game that some company leaders have been following for the last 20 years. After a thorough analysis of competition and business models, it is important to look at our own field of activity to see whether it is vulnerable and, if so, to become "disruptive" ourselves rather than be overtaken by competitors in the next few years. The development of innovative environments and the resultant improvement in promoting innovation is also always a European strategy in the midst of global competition.

Alongside the development of innovative environments as a European social strategy in part 1 of this chapter, part 2 describes possible focal points for European social digital platforms.

1.1 Digital Platforms Open Up Opportunities for Social Advancement

Do you remember what things used to be like when you wanted to make a career in the tourism and hotel industry? After completing school, you applied for an apprenticeship. If you were among the lucky ones who were invited for an interview, you might have had to take tests, have discussions, and have to survive a trial period of several months, even after a contract had been signed. After 3 years of apprenticeship, many years working up through the hierarchy and maybe a few spells abroad,

P. Plugmann (✉)
SRH University of Applied Health Sciences, Leverkusen, Germany
e-mail: philipp.plugmann@srh.de

A. Ruthemeier et al. (eds.), *The Global Impact of Social Innovation*, Management for Professionals, https://doi.org/10.1007/978-3-031-03849-5_4

far away from the family, it was possible, with diligence and discipline, to become a deputy hotel manager and then, with a bit of luck, to manage a hotel, after 20 years in the industry, or even to establish one of your own.

Over 10 years ago, a number of Americans on the US West Coast set up the accommodation platform Airbnb. None of them had done a hotel apprenticeship, and none of them owned a hotel either. They did not have the many years of expertise in the industry, and the moral legitimation, we might say, and the concept of working one's way up "with diligence and discipline" by building up one's reputation over 20 years in the industry are missing too. Despite this, the company grew steadily, so that it is now worth several billion US dollars and still happily attacking the traditional hotel and accommodation market.

This means that a competitor does not necessarily have the level of industry expertise that might be expected (Gassmann & Sutter, 2016; Meier, 2018) nor does the new competitor necessarily need to have any material assets. The creation of digital marketplaces, the ability to handle large volumes of data ("big data"), and the striving for absolute market dominance can also be seen in companies such as Uber, Amazon, or Google and characterize digital platforms. The mutual networking of customers, price transparency, and influence of customer desires directly on production are only a few factors affecting the digital business models and presenting entrepreneurs with new challenges.

1.2 Customer Centricity and a Culture of Innovation as the Drivers of Social Transformation

The new digital marketplaces, digital platforms, and Internet-based applications (apps) are attacking competitors not only in terms of knowledge or skill but also as fair as business models are concert. A war on two or three fronts has broken out, resulting in higher costs for established companies as more people have to be employed and additional processes designed and implemented (Shah et al., 2006). Customers are being diverted, and with aggressive market strategies, this can become an existential threat for some companies. Uber, Netflix, and Amazon are classic textbook examples that have dramatically affected the passenger transport industry, the television and entertainment business, and the retail sector globally. And yet we cannot blame these new companies in the last 10 years, because they have used "customer centricity," i.e., focus on the customer, to invent excellent business models for the customer's benefit and combined this with sensationally good service. That also means, by implication, not only that the new technology-based companies have succeeded but also that the severely battered competitors have failed completely, including companies worth billions, such as Toys "R" Us, Blockbuster, AGFA, or Nokia's cellphone sector.

Matters do not always need to end up in insolvency; companies can also suffer such dramatic losses that they are taken over by competitors or financial investors, resulting in unforeseeable developments for the companies in question. This culture of taking over stricken companies and the number of international insolvencies could accelerate in the future, as innovation cycles are speeding up, the number of international competitors is rising, and the Internet has reached such an advanced stage of maturity in the past 10 years (knowledge, networking, communication, business models, customer behavior on smart phones) that the next 10 years will see even more companies sleepwalking toward oblivion. The cliché of "Germany's service desert" would be unhelpful if it was not true. In the future, we will be even more dependent on high potentials in companies who take innovation projects forward and bring interdisciplinary solution approaches to companies within an inviting culture of innovation (Capon & Senn, 2020).

It is always exciting to find out what makes high potentials leave Germany and to discover what they are looking for—and find—elsewhere. We can all learn from this. Experience abroad is a good idea, but when these talented up-and-coming entrepreneurs build up and help shape companies elsewhere, far away from home, either permanently or at least for many years, we must question if conditions could be improved here to keep people in Germany.

The following is a **guest comment, "Ideas for a better innovation culture in Germany,"** from Jannik Peters, mechanical engineer and co-founder of a start-up at the world-famous MIT in Cambridge, Boston (USA):

"Innovations are only made in an environment that enables people, promotes willingness and provides opportunities for innovative work. It is not just about the next world-changing start-up; it is more about any innovative change, however marginal it might seem to be. The willingness to make innovative contributions or even to create start-ups does exist in Germany. For this reason too, it is generally opportunities that are the focus in discussions about the innovation culture. But even the best financial and structural conditions will not lead to a success story if skills are neglected. Since 2011, according to the Federal Statistics Office, more than half of all young people have consistently been striving to achieve a higher qualification beyond a university degree. Surely this answers the question of skills? Unfortunately, however, our educational system focuses more on written exams than projects, more on the final qualification than on expertise and more on the prospects of a well paid job than on the ability to make independent innovations. No-one is blaming the students—it is more a criticism of a system that promotes this behavior.

The USA is a country that has produced some of the most innovative, successful companies in recent years. A direct comparison between countries often reveals the opportunity to innovate as a factor in this, which is more marked there because of the greater availability of risk capital. However, apprenticeship, especially at universities that produce a large number of innovative start-ups, also has another focus. The famous elite universities focus more on projects and interactions than on the pure passing on of knowledge. This also leads, for example, to topics for dissertations not being set by the institutions, as in Germany, but being developed by the students themselves. This actively promotes both the ability and the willingness to innovate, which is of major benefit to the US culture of innovation. This is also reflected, for example, in the falling average age of company founders from the Massachusetts Institute of Technology. In order to improve the culture of innovation in Germany permanently, we must be committed not only to 'opportunities' as a factor but also to skills training. Otherwise, we cannot be surprised if a competitive innovative environment fails to develop despite the best structures."

Source: university entrants: https://de.statista.com/statistik/daten/studie/72005/umfrage/entwicklung-der-studienanfaengerquote/
Source: MIT average age of start-up founders: https://de.statista.com/statistik/daten/studie/72005/umfrage/entwicklung-der-studienanfaengerquote/ (page 15)

1.3 Further Training for School Teachers as Part of Social Innovation Promotion

A number of our teachers could be made more aware of the need to encourage talented, motivated young people who want to be guided, within the context of creative thinking and ideas management, through projects aimed at training a problem-oriented way of thinking and developing the skill of independent learning. The further training of teachers itself thus offers enormous potential (Missal, 2019). This means the skills which allow competitors to dominate today and to continue to do so in the future. Phases such as the project week, which was around in my school days, or voluntary project requests by pupils for the long summer vacation would be possible times for this. In implementing new concepts in schools, pupils and head teachers are caught between programmatic traditional targets and everyday practice (Tulowitzki et al., 2019).

In the future, simple tasks will be dealt with by AI, robots, or standard programs, and the pure recitation of blocks of knowledge will increasingly become less important as a critical decision-making factor because knowledge is becoming more available globally, sometimes at no cost. The questions will be: what products and services will we make out of this knowledge and how will we bring it to the market reliably and quickly? In my opinion, the typical teachers of tomorrow should attend courses and training sessions themselves on subjects relating to business, research, and innovation. Nowadays, this can also be done online, as a webinar or video (possibly on YouTube). By enabling the teachers in this way, it can also be expected that they may develop a sensitivity (emotional intelligence), have discussions with each other at this new level, and thus not perceive their class as a uniform gray mass into which blocks of knowledge have to be dropped; instead, they must convey knowledge and have an attitude to pupils that is characterized by open-mindedness and a perception of the diversity of learning types, characters, and ideas in order also to provide pupils in the long term with the necessary self-confidence in themselves. This is an idea, and it undoubtedly makes sense, in a large community made up of pupils, parents, and teachers, actually to discuss for the first time what expectations there are. I am constantly impressed at what motivated young people can achieve, but we are inclined to distrust them because they are so young. We divide classes into good and bad learners and form an early judgment about the potential of our pupils and students.

Can we really only classify them as good and bad learners or could we move to a broader point of view? The subject of the quality of teaching remains a challenge, because there will be a need in the future for "knowledge and application orientation" in the context of interdisciplinary problems. Generating strategies during the learning process itself for developing and using ideas, trying out debating clubs based on the example of some English schools, and running projects in mixed groups are just a few ideas for helping pupils to enjoy learning and improving their learning experience.

1.4 The Lifelong Learning Society and New Social Networks

Lifelong learning in various scenarios is becoming a necessity if the goal of keeping up internationally is to be achieved (Lassnigg, 2019). The idea that, in current times, a single course of study, or first degree, will be enough to last forever is a great misconception. A second- or even third-degree course over a period of 20–30 years seems likely since, internationally, initial learning environments such as "fast-track learning" are developing. In July 2019, I was allowed to spend a few days with a Russian-Chinese start-up in Hong Kong (China) which was looking at a new concept. This concept picks up points such as global shifts in the scientific community, the solving of tasks in diverse teams, and self-teaching components. The world of knowledge in the future will be multidisciplinary, interdisciplinary, and transdisciplinary, and it will be assumed that people are able to self-learn.

At the Russian-Chinese fast-track learning start-up, a project is testing whether it is possible to combine, for example, two or three study courses in 7 years, such as medicine, computer science, and design. This might be irritating to start with, but we need to think about this: if a young person is taken "out of the system" and fully financed for 7 years, so that no temporary work alongside studies is required, if the holiday times (here in Germany totaling around 5 months of summer, Easter, autumn vacations and semester breaks) are reduced, and if what is taught is cut and compressed to the relevant blocks of knowledge and all of this mixed with gifted, highly motivated lecturers, might it be possible to achieve this goal? I was approached about this project by a Chinese fellow-student living in England who was also completing his part-time doctorate of business administration in London. He felt that, because of my three master's degrees in very different areas and the founding of companies in a range of industries (medtech, strategy consulting), I was well-qualified to provide some input.

However, the project within this start-up is still in an experimental phase and is designed to run over the long term. The outcome is completely unknown, but the approach is clear: testing whether gifted 20-year-olds can cope with gaining a triple qualification in 7 years. Against the background of international competition among gifted people or high potentials combined with progress in AI, this will exert an enormous pressure on German medium-sized companies that they currently cannot really imagine. Once I was back in Germany, I had a few discussions about this project, and interestingly, it was thought to be irrational, ridiculous, and impossible to implement. From my point of view, the bad thing is that chronically underestimating our international competitors and their long-term projects will blow up in our faces in the near future if we continue to behave as if we were the intellectual and entrepreneurial center of the earth.

1.5 Start-Ups as a Social Springboard

When younger people in particular establish start-ups, they depend on support in some form. This can mean risk capital, but attracting the right team members, building up skills, and tackling organizational matters are also challenges on a daily basis. Start-ups are newly established or young companies in their growth phase that challenge mid-sized companies by establishing new business models and often use transformation and the digital world to provide benefits to the customer (Kochhan et al., 2019). They serve as drivers of innovation, and, as a source of renewal, they are very important for our national economy. It is important to use the momentum of digital transformation and to maintain the motivation and keenness of their founders. Entrepreneurship and start-ups are the fuel needed for innovation (Plugmann, 2018).

Here is a guest comment from Marcel Engelmann about the significance of start-ups:

Innovation takes society forward and creates the jobs of the future. Only through innovative ideas can the prosperity of society be increased in the long term and people's quality of life improved. The establishment of new companies in particular helps establish technologies in the market, so that people are provided with added value by these innovations. Digitization and global competition in particular are increasing the pressure on existing companies to develop further and face up to the new competition. This development is further accelerated primarily by automation and the use of artificial intelligence in all areas of companies.

And the key German industries are looking at some far-reaching changes, especially due to the increasing competition from abroad but also because of the changes in the working demands of future employees. These changes, however, also open up many opportunities for entering a growing market and allowing new world market leaders to emerge from Germany. Start-up companies are the key here to a strong economy in the future.

Particularly the strong mid-sized company sector and the high level of education in Germany must be used to drive innovation forward and establish new companies. Cooperation between mid-sized firms and start-ups should therefore be expanded in any event. Support from the state must also be expanded in order to help start-up companies and thus improve the implementation of innovations in the market. In particular, the promotion of entrepreneurship activities at colleges and universities must be increased. Only when all these activities are interlinked can innovation be established and start-ups be used as drivers of innovation.

1.6 New Ideas for Grants to Support Students, Taking Account of Social and Other Factors

The "second row" is undervalued and is being sent the wrong signals. As stated at the beginning, our long-term hopes in the "20-year scenario" are resting on the young people who are going to school today and will be starting an apprenticeship or course of study shortly. They must be supported. One way of being supported is a grant system. There are grants from foundations of the political parties, the Stiftung des Deutschen Volkes foundation and, for example, the Deutschlandstipendium initiated by the Federal Ministry for Education and Research (Bauer, 2017; Tiefenbacher, 2018), where private sponsors or companies donate €1800 per year and the federal government matches it with the same sum. This means that the student receives €3600 per year. My wife and I have been donating regularly for over 10 years, including donations for the Deutschlandstipendium grants and innovation prizes. I question the assumption that supporting the students with the highest grades will advance the innovative strength of Germany more than if we were also to support "the second row." The origin of my idea of supporting the "first" and "second row" lies in the process of how an idea arises, is developed, and finally is taken to the market launch. In my understanding, an idea matures like a ball of modeling clay with various colors in it. A founding team works on an idea, modifies it, and, in parallel, adapts it to their interactions with each other and with people with whom they have discussed certain aspects, following the principle of the feedback loop. In this, individuals with different areas of expertise, creativity, and performance levels work with each other. Supporting an individual with very good grades, who stands out anyway because of their top grades, while simultaneously neglecting a good student who can make a decisive contribution in an innovation team would mean that innovation and entrepreneurship would be supported less efficiently by only supporting the top-grade students. Grades on their own are a poor basis for distributing funds. However, because I have heard many times that parents would actually complain if their children with very high grades were not considered when allocating grants, it is high time to adjust the basis for evaluations.

In the context of promoting innovation, we might consider a brief lecture, a presentation, or an essay about topics that connect the person's course of study with society and the general area of innovation. Potential applications would have to be supported in their search for the right grant query; there are plenty of examples of a similar type in Germany, such as the KIT (Karlsruhe Institute of Technology) (Paltian, 2019). Students should show how they intend to use their knowledge after the course and what they intend. Then points could be awarded based on a transparent system, such as grades 40%, essay 40%, and social commitment 20%. We need to pay more attention to those who are "good" and not be blinded by the "very good" grade. The ability to recite a poem does not justify any sensible grant. In addition to supporting the best, we also want to encourage creative minds and spend the necessary time on identifying these. For this, we must give these individuals the opportunity to present themselves and their ideas.

Another idea would be for teams to apply. If we assume teams of three, it could be established that one team member achieves good or very good grades and the other two team members could be defined by this one. This is reminiscent of the principle in industry of "employees recommending employees." These teams of three could apply for grants and would have to present a viable project, an idea, or a long-term solution. Admittedly, this is considerably more demanding and complex for both sides. I am open to suggestions and ideas as to how something like this could be structured. We know from the world of start-ups that when private equity funds or companies buy up these young companies, the focus is also always on ensuring contractually that the full start-up team stays on board. This shows the importance and relevance of thinking as a team. The structure of grant allocation should therefore also adapt, with the possible initiation of additional grant formats.

2 Focal Areas of European Social Digital Platforms

Education and health represent two central factors for guaranteeing prosperity, safety, and self-determination in Germany and Europe. The possibility of rising socially irrespective of age and background conditions combined with access to health-related information increases society's productivity in the long term and is also a step toward social innovation. Before we can start talking about global projects, it must be possible to initiate a pilot project at European level. The following looks at the two areas of education and health in the context of digital platforms.

2.1 Education

The European Commission (2021) is considering, in the area of education, "a wide range of possibilities for training and further education throughout Europe for students in all age groups, information about studying abroad, for vocational education, for the recognition of qualifications and skills."

In Europe, digital platforms provide opportunities in the area of education:

- Bridging language differences
- Balancing information inequalities
- Explanatory videos
- Tele-consulting
- Round-the-clock accessibility
- Feedback opportunities for European institutions to bring them closer to citizens
- Service tool

2.2 Health

The health system is a very large field, and I would therefore like to focus on one area as an example—mental health. The regional office for Europe of the World Health Organization (WHO) has recently published a paper entitled "WHO Europe brings mental health out of the shadows with new pan-European coalition" (WHO, 2021, 13.10.21) with the aim of closing gaps in services and taking the needs of those affected and their families into account.

Digital platforms have many different advantages:

– Those affected can obtain information around the clock.
– There is massive scope for expanding the amount of information available.
– Explanatory videos can be offered.
– Self-help groups can be organized.
– Emergency situations can be dealt with appropriately through tele-consulting.

2.3 Conclusion

In the digital era, the development of European social digital platforms is already an integral part of the major institutions such as the WHO and the European Commission. As always with digital projects, the services offered need to be constantly further developed. The digital platforms offer opportunities at national and European level to improve language barriers and social conditions and to interlock nations more closely with each other.

Improving the quality of health and education for citizens can be successful as a European model and would then, as a "proof of concept," be transferable to other regions of the world as a global social innovation. By developing social digital platforms, Europe can thus link innovation and social welfare for the benefit of all citizens.

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Philipp Plugmann has been doing multidisciplinary work for the last 22 years in parallel to practicing as a dentist and implantologist in his own clinic in Leverkusen, Germany. He is also full professor for interdisciplinary periodontology and prevention at SRH University of Applied Health Sciences. His first book on innovation in medical technology published in 2011 was reviewed by Cisco. His second book on innovation published with Springer in 2018 got more than 100,000 chapter downloads in its first 30 months. Previously, he held multiple adjunct faculty appointments and has won multiple teaching awards. Plugmann has given research talks in the field of innovation at conferences at Harvard Business School, Berkeley Haas School of Business, Max Planck Institute for Innovation and Competition, and Nanyang Tech University, Singapore. Plugmann is a serial entrepreneur and advisor to several companies.

The Role of Corporates in Creating a Better Everyday Life with Social Entrepreneurs

Åsa Skogström Feldt

1 Background/Introduction

When I left the corporate world to lead an NGO almost two decades ago, I could sense from the questions I got in my new environment that my experiences were not always seen as idealistic enough. On the other side, the corporates were questioning if the NGOs were professional enough. As I have been going back and forth between the two sectors over the last years, this gap fortunately seems to have been getting smaller. I have even seen a growing curiosity about working at the intersection between the two—an intersection where we can find interesting solutions to some of the greatest challenges of our time.

There is a trend of more impact-oriented start-up businesses. There are also many corporates moving towards a more development-oriented approach when it comes to social innovation. Moving from do-no-harm and compliance to supporting social innovation that can transform societal issues takes intrapreneurship and partnerships. This can seem new but was a priority already at the beginning of the industrialisation era. One early example is Nederlandsche Gist- en Spiritusfabriek (now DSM)[1] in the Netherlands, who early on in their 150 years contributed to a wide range of social innovations in partnership with their employees. Already at the end of 1800s, the founder worked on everything from profit sharing, pension funds and affordable housing for the employees.

Although the endgame of social innovation is often systems change—through new policies or new ways of working—one shouldn't underestimate the sometimes symbolic but also impact-generating actions along the way. These can contribute to

[1] https://www.dsm.com/corporate/news/news-archive/2019/39-19-dsm-celebrates-150-years-of-biotechnology-innovation.html

Å. S. Feldt (✉)
IKEA Social Entrepreneurship BV, Delft, Netherlands
e-mail: asa.skogstrom.feldt@inter.ikea.com

A. Ruthemeier et al. (eds.), *The Global Impact of Social Innovation*, Management for Professionals, https://doi.org/10.1007/978-3-031-03849-5_5

both insightful learnings for the future and value to customers, employees and other stakeholders. Purpose and meaning are two important values for not only young talent but also a growing part of your customers and investors. Are you ready for what comes after ESG (environmental, social and corporate governance)?

2 What Is Social Innovation?

"Social innovation is the process of developing and deploying effective solutions to challenging and often systemic social and environmental issues in support of social progress. Social innovation is not the prerogative or privilege of any organisational form or legal structure. Solutions often require the active collaboration of constituents across government, business, and the nonprofit world", according to Sarah A. Soule, Neil Malhotra and Bernadette Clavier[2].

Professor Filipe Santos[3] compares social entrepreneurship and social innovation. According to him, social *entrepreneurship* is a process of developing innovative and sustainable solutions to important but neglected societal problems, while social *innovation* is when the proposed solution is proven to generate impact and is more efficient and/or effective than established solutions.

When thinking of corporates and other larger organisations, institutions and governments, the equivalent of social entrepreneurs would be social *intrapreneurs*. They normally work in entrepreneurial ways and use the organisation as a vehicle to develop and scale social innovation.

For the solution to become a "social innovation", there needs to be validation of the model. Is it really a solution that can scale beyond its initial organisational stage and create deep and lasting social impact? Part of the validation process is to consider whether the change is significant and, compared with other or current solutions, is it truly adding value or only doing a bit of good?

Compared to traditional organisation building and entrepreneurship, the endgame doesn't have to be an organisation delivering sustained service. It can also be to open up a whole new type of market, to create replicable models or even open-source solutions. For many social challenges, the solution can be government adoption. An optimal exit would of course be if a mission is achieved, and the social challenge is no longer there. A good example of this would be if Specialisterne's[4] vision was fulfilled—that every company employs around 1% of people with autism—solving the challenge of people with autism not being able to provide for themselves through meaningful employment.

[2] Stanford Business School, https://www.gsb.stanford.edu/faculty-research/centers-initiatives/csi/defining-social-innovation-

[3] Professor Filipe Santos, Católica-Lisbon

[4] https://specialisterne.com/

3 Why Is It Important for Corporates to Work with Social Innovation?

In times where our world's common challenges require common solutions, across sectors and stakeholders, corporates consider not only technological innovations to tackle issues like climate change and unsustainable consumption but also social innovations to contribute to solutions that can de-escalate the growing inequalities. To further this point, partnership is highlighted as a necessary way forward in goal 17 of the UN Sustainable Development Goals. Corporations, large and small, are increasingly acknowledging the need of being part of new solutions and placing people and planet at the centre of sustainable development.

There are many dimensions of inequality. The one that most likely comes to mind is income- and poverty-related inequality. In times of the Covid-19 pandemic, we have again seen that people who are vulnerable are also the ones who get hit the hardest by lockdowns and other effects of trying to limit the spread of the virus. Measures that, for example, make it difficult for artisans in rural communities to travel to work, or even get materials to their homes to do home production, or measures that lower the demand for products and services that are making groups of workers redundant.

Of course, there are many other types of vulnerability, like displaced groups of people who have a hard time finding sources of income, people with different abilities, people with long-term unemployment, indigenous groups or women who are marginalised as well as youth having a hard time entering work life.

There are many reasons for businesses to be inclusive when it comes to workforce, supply chain and customers. Inclusivity brings diversity and creates openings to enable new talent, new perspectives and new business opportunities. Being an inclusive business is good but to a growing degree also expected – by employees, customers and society alike.

4 How Can Corporates Work with Social Innovation?

One way for corporates to work with social innovation is to engage with partners, like social entrepreneurs and/or NGOs, that are trying to develop scalable models to solve social challenges.

Understanding what the most challenging social situations, related to your business and the neighbourhoods where you are active, is useful insight. Looking into the value chain and the social challenges—internally, in the supply chain, for customers as well as other stakeholders—will identify vulnerable groups. How can a focus on "positive impact on people" include both long-term business and society as a whole? Are there human rights abuses or other negative impacts that need to be addressed? Are there vulnerable groups working in and around the materials used in your production or around the products or services you buy or sell? Are there even business needs whereby working on a social issue, you can meet both social and business-related needs?

When selecting one or several partners, most important is to share the same vision and values. For the vision, it helps to use a common framework for the change you want to see. Theory of change is a powerful and simple tool to use when identifying the social challenges you want to solve together. The tool helps you identify the assumptions you have made, as well as the pathways to change in the short and long term. When it comes to values, it will be equally important *how* you do things as *what* you want to accomplish.

Several corporates, like IKEA and Unilever, work with supporting social entrepreneurs by running accelerator programmes, either on their own or in partnership with NGOs. These programmes develop the capacities of a cohort of participating social enterprises during a limited time period. Corporate impact investors also work with impact investments that fit the different stages of development, all the way from grants to soft loans and equity investments.

For corporates, it is a chance to find and leverage opportunities that can be part of strategic movements for a planet-and-people-positive future. It is also a way to engage co-workers and customers in change and new ways of thinking and behaving. It could even be a way to find new business models.

The opportunity for impact is big. The World Economic Forum Covid Response Alliance for Social Entrepreneurs, through their members, in 2020 supported over 50,000 social entrepreneurs across the world. They estimate that they have a direct or indirect impact on the lives of nearly 1 billion people[5].

5 What Role Do Social Entrepreneurs Play?

Social entrepreneurs are often on the front line, providing access to employment, food, affordable energy and other critical services to those who are struggling. They can also inspire business to become more innovative and impactful. And, not least, they can innovate to solve social problems by using entrepreneurial approaches, challenging established systems to better address societal issues. You can see them as change makers using innovation for the common good[6]. It is a complex role, often combining worlds through hybrid models of for profit and not for profit. It is also not always easy for them to validate and prove their models and impact.

As social entrepreneur, your partnership choices are crucial. It is, as in any other business, important not to be dependent on a sole partner. It is also crucial to stay true to your mission, while the way of working might change dramatically along the way.

One way for corporates to partner is by doing business with social enterprises. There can be hurdles, as described in the recent study by Acumen[7], but with open communication and shared values they can be overcome.

[5] https://www.weforum.org/reports/covid-social-entrepreneurs-alliance

[6] Professor Filipe Santos, Católica-Lisbon

[7] https://acumen.org/corporate-ready/

For social entrepreneurs whose mission it is to create systems change, there are many advantages to partner with corporates. Gaining access to resources and competences, scaling mechanisms and reach, credibility and networks are important steps on the way to validate your model as a social innovation. By creating multi-stakeholder groups, social entrepreneurs can also be facilitators of change and even work towards getting the model to become a new practice or adopted by local or national government. Governments can also be great social innovators and facilitators at a local level, when they are close to the problem and remain agile.

As mentioned above, there are many ways to achieve the mission for a social entrepreneur, and like any entrepreneur, it can be hard to "let go" of your social innovation to make sure it reaches a systems-change level. Scaling innovation is important, and corporates and/or governments can play a crucial role here.

6 In It for the Long Run

All innovation is challenging, social innovation even more so. Defining the social challenge you want to help solve is not easy. Many solutions can alleviate the symptoms of a social challenge, but does it really address the root cause? Also, we can ask ourselves, does it have to? Is it perhaps good enough to focus on the symptoms?

As mentioned above, it is useful to clarify the impact you want to contribute to. Impact is not a quick fix but part of long-term development. In the theory of change model, you describe expected pathways of change and summarise it in a simple diagram. Based on that work, you can build a results framework and identify indicators to track at the different levels of change, both short and long term.

Many social challenges, if you go to the core, end up in mindsets and behaviours that have been persistent over a long time and might even be part of cultures and traditions. This takes long-term intentional actions, and the impact might not reach full effect until the next generation. It also takes co-creation and inclusion of the people whose problems we want to address. One of the fields being studied closely is why and how to work with community-led development[8].

7 For Impact, with Impact?

For corporates and investors, a good way to evaluate your actions is to look at impact. All your actions create impact, positive or negative. Understanding your impact—and what type of impact it is—is the basis for being able to find your most

[8] The Movement for Community-Led Development https://mcld.org/

important improvement areas. EVPA has presented a useful framework that deals with the difference between investing *for* or *with* impact[9].

8 Engage Co-workers and Networks

When you partner with social entrepreneurs, sharing business knowledge and skills is a very useful way to engage, for both parties.

Tapping into networks, obtaining business knowledge and expertise and understanding business insights are just some of the topics that social entrepreneurs often seek support with. Sharing your corporations' unique competences constitutes an added value to the social entrepreneurs. Selected co-workers can support and co-create with social entrepreneurs using their business knowledge and will complement the social impact skills of the entrepreneurs. The engagement must be built on a mutual exchange of competence and inspiration. It is useful to be clear on when you are expected to be a coach and a mentor, asking questions that lead to development or sharing experiences and opening networks.

Co-workers that work with social entrepreneurs often get a broader understanding of social issues and how to create positive social impact on people, planet and society. They also gain knowledge about social entrepreneurship and are more equipped to integrate social impact in the business. Engaged intrapreneurs are only one part of a business transformation, but just to step out of your everyday role offers useful new perspectives.

9 IKEA and Social Entrepreneurship

The IKEA group of companies has worked with creating positive social impact for many years. In fact, the founder's vision was to "create a better everyday life for the many people".

It started with compliance and rigorous code of conduct processes, paralleled by substantial philanthropic investments through IKEA Foundation. When visiting development initiatives in the field, there was a wish to close the gap and see if it was possible to support social enterprises by doing business. Starting in India and Thailand a decade ago, the initiative has managed to support social enterprises in creating sustainable impact for marginalised women in rural India by developing their business in the international value chain. From what started with a small number of limited-edition products sold in a few stores, IKEA now has products made by social businesses sold online and in-store in over 25 countries. Creating partnerships outside regular types of partnerships—smaller than normal or working with different paces—requires a lot of hand-holding and intrapreneurship. Finding

[9] https://evpa.eu.com/knowledge-centre/publications/investing-for-impact-evpa-impact-strategy-paper

new ways have been crucial, both in the start and during the continued development. As a result, IKEA has created a handbook with the most important learnings[10].

Working with social business doesn't have to be large scale. There are many local service opportunities in working with local social enterprises. Even within a global corporate, many needs are local. Examples where social enterprises add value are within recycling, repair and refurbishing, customisation and services that contribute to circularity.

There are also opportunities in other services, like last-mile deliveries as well as services for offices and stores. Social entrepreneurs can also be great partners for positive impact in the local neighbourhoods. The biggest IKEA franchisee, Ingka Group, has invested in building skills and work experience for refugees, migrants, people with disabilities, young people and women outside the labour market and also engaged their co-workers and customers in contributing to their local communities. The idea is to develop local collaborations that seek to address local, social and environmental challenges. By doing this, you can accelerate and empower vulnerable people to move from dependence to independence.

After a couple of years working with social entrepreneurship and business, it was clear to IKEA that there was a need for more tools. What would be needed to find and develop more interesting social solutions by supporting social entrepreneurs? These could be close to the value chain but not direct suppliers, neither globally nor locally. To be able to work with both programmes and partnerships through grants, loans and investments, IKEA Social Entrepreneurship BV was set up as a social enterprise, a hybrid between philanthropy and business. Although it is still early days and the pandemic hit 1.5 years after the start, there is a great opportunity for learning and finding scalable solutions to several of the social challenges in and around the IKEA ecosystem.

10 Improve Livelihoods and Take Back Learnings

For IKEA Social Entrepreneurship, the wished-for impact is to improve livelihoods for people who are vulnerable. In and around the IKEA value chain, there are many vulnerable groups—smallholder producers, people working in underdeveloped sectors like waste management (in certain countries), people with disabilities, refugees and youth at risk. For the business and the co-workers, the intended impact is leadership development and bringing back new insights and mindsets around social innovation and solutions.

One way to find interesting social entrepreneurs to support is to partner with specialist NGOs like Ashoka, Acumen, NESsT and New Ventures. Several accelerator programmes have been co-created, testing different versions in length of time, ways of engagement, geographic areas and sectors. Co-worker engagement has been

[10] https://www.ikeasocialentrepreneurship.org/en/useful-reads

an important component, where a coaching approach has added value to the social entrepreneurs' business and personal leadership development.

The accelerator programme is also a funnel to finding new scalable solutions. One example is Ignitia, a Swedish weather system innovation for tropical forecasting established in West Africa. They provide weather forecasts to smallholders, supporting farmers in making better decisions on when to sow, fertilise and harvest, increasing yields and incomes. After the accelerator programme, where Ignitia developed a second business model (B2B), they needed expansion capital, and IKEA Social Entrepreneurship BV was able to be one of the investors[11]. The vision of Ignitia is to make their services universally available for smallholders in the tropical belt. For IKEA, this indirectly touches many material value chains and is a way to work with improving livelihoods across sectors.

Complex challenges are caused by a number of interrelated issues. We are in the midst of a fundamental shift. Organisations across borders, sectors and regions are reinventing ways to tackle these challenges. Complexity arises from the interactions between the different parts that need to be engaged to find new ways, less so from the parts themselves. One tool that is being discussed more and more is to work with "social labs". There, the focus is not only on understanding how the parts of the system interact and influence each other but also how to co-design, together with those that can enable systems change. Social labs, creating social innovation and unusual partnerships, are ways to find solutions that both solve a social challenge and a business need. Once the intervention model is co-designed in a social lab, the engaged parties can move on to regular innovation processes and pilot and validate proposed solutions.

Another hands-on business development example for IKEA concerned the need for being more accessible to their customers. By exploring and co-creating solutions together with NGOs, social enterprises and service providers, several solutions were developed. One immediate result was a partnership with the social enterprise Carton Plein in Paris, a set-up that has been developed to become part of the IKEA concept and is described as a possible way of working for all the franchisees in the IKEA toolbox.

11 Systems Change

Challenges of working with systems change include the complexity, the size and the many sectorial responsibilities. Also a franchise system like IKEA is a system. Alignment and finding ways to contribute to holistic solutions are important parts of the ways of working.

One of the social entrepreneurs that participated in the Dela Accelerator, an accelerator co-created by IKEA and Ashoka, is Fernando Assad. He works with

[11] https://www.ikeasocialentrepreneurship.org/en/news/ignitia---investing-to-improve-smallholder-farmers-livelihoods

the favelas in Brazil, addressing bad living conditions stemming from the poor quality of housing. He started an organisation called Programa Vivenda that helped people with no means to renovate their homes. He quickly realised that there are about 40 million people in Brazil living in 11 million inadequate houses and that this is a great health risk. He would not be able to scale his organisation to fulfil the needs. Instead, he initiated a system with workers who can get the job done, combined with funders for people without means, and financing opportunities, so that everyone shall have the opportunity to live better.

As mentioned before, although the endgame of social innovation is often systems change—through new policies or new ways of working—one shouldn't underestimate the sometimes symbolic but also impact-generating actions along the way. These can both contribute to insightful learnings for the future, as well as add value to customers, employees and other stakeholders. What intersection is interesting for you? How can you find change makers, like social entrepreneurs and intrapreneurs, to co-create and learn together with? How will you and your organisation contribute to a positive future for people and society?

Åsa Skogström Feldt is leading IKEA Social Entrepreneurship BV. Through investments in partnerships and programmes, they support social entrepreneurs all over the world, to create new opportunities for vulnerable people and communities, while fighting the root causes of poverty and inequality.

Åsa has a combination of business and NGO background. She has been the global president and CEO of The Hunger Project in New York and the CEO of The Hunger Project Sweden. She has also established social entrepreneurship in the supply chain at IKEA of Sweden and has been the head of marketing for Sony Ericsson in Germany, corporate communications director for Aspiro and marketing communications manager for Ericsson Mobile Communications in the Middle East and Africa.

Throughout her career Åsa has focused on women empowerment;, on board assignments, by co-founding two women' organisations, in exchange programmes and grass root activism around the world and in her everyday life.

Female Founders Are the Engine for Social Innovation

Tatjana Winter

1 Introduction

There are many ways to drive innovation, but to create real impact fast, building your own business is one of the most effective ways. That applies especially to green or social innovation. We, as a society, need people taking the risk of starting their own ventures and bringing their ideas to life.

Start-ups create high impact in a short time, compared to activities initiated and led by big corporations. Don't get me wrong; of course a large company is able to drive change and to set up projects aiming at social and sustainable innovation, but history has taught us that start-ups can do it faster and at lower costs. Most founders of impactful business models have pure motives and follow their purpose, whereas large companies might be led by other motives.

However, the start-up industry's innovation power is limited due to some significant challenges. One of the major problems is well known: gender imbalance. Only 20% of German start-ups have one or more women in their founding team (Statista, 2022).[1] This shows a significant underrepresentation of female founders and is true across all countries in the world. The imbalance prevents start-up ecosystems from leveraging all available innovation opportunities.

This gender imbalance in the start-up industry is alarming. Recent studies in Germany show that more than half (54.1%) of female founders pursue social entrepreneurship while in comparison it is 39.4% for male founders (Female

[1] Statista: https://www.statista.com/topics/4691/female-founded-startups/

T. Winter (✉)
Berlin, Germany
e-mail: tatjana@tw-advisory.de

A. Ruthemeier et al. (eds.), *The Global Impact of Social Innovation*, Management for Professionals, https://doi.org/10.1007/978-3-031-03849-5_6

Founders Monitor, 2020).[2] This leads to a simple conclusion: more female founders equals more potential for social innovation.

What can we learn from these numbers? Not only that start-up ecosystems could be more innovative but they could create a lot more impact in this world—be it fighting climate change or improving education, etc. Creating more gender-balanced ecosystems means a higher probability for social innovation. And even more, studies show that ecosystems do signal on the society and diversity plays a fundamental role in improving our society (Berger & Kuckertz, 2016).

Let's start with the history of entrepreneurship, followed by the challenges that female founders face today, and end with recommendations for improvement.

2 History: Entrepreneurship Is Not Gender Neutral

We need to understand that entrepreneurship is not a gender-neutral concept (Jennings & Brush, 2013). There are differences related to one's gender. As the differences between men and women were mostly studied, I won't go deeper into detail of other genders.

Gender does not equal the sex somebody is born with. Gender is constituted through socialization and role ascriptions; it is something one "performs" every day, rather than something given (Bruni et al., 2004). Most factors are not related to the individual but are outside the entrepreneur and are present due to systemic structures (Hurley, 2015). Most challenges female entrepreneurs face today exist because our society is built around role ascriptions and offers men and women limited space for self-development.

Imagine a start-up founder. What is the picture that you are seeing? How old is the founder? What do the clothes look like?

Are you picturing someone popular like Marc Zuckerberg or Elon Musk?

If this would be a bet, I would say you see a white man in his early 30s, having a perfect not perfectly shaved 3-day stubble wearing a hoodie with his companies' logo printed all over the back. He is working 24/7, is invited to every start-up event in the city, and is pitching his business idea to tier A investors during after-work chardonnay. His career is his highest priority, and he already knew as a child that he is a born entrepreneur, mostly coming from a social background that worships entrepreneurial drive and is already financially well off. At the very latest, in the last year in Ivy League business school, it became clear that he is destined to build a start-up.

Of course, this is an exaggeration and describing a stereotype, known from TV shows like Silicon Valley or Shark Tank. I don't want to argue about the average age or education of a founder, but regardless, we use the male pronoun; entrepreneurs are described using "masculine" attributes. Men still account for the vast majority of

[2] Female Founders Monitor (2020) https://femalefoundersmonitor.de/wp-content/uploads/FemaleFoundersMonitor2020.pdf

start-ups, and female entrepreneurs are still considered as "the other," an exception, a minority.

To answer how we ended up here, we need to go back in time. Early studies were looking into entrepreneurship as a function but still described the individual as "owning" the function. To put it in a nutshell, entrepreneurs are "heroic, self-made men" (Ahl, 2006).

It all started very early. Schumpeter (1934/1983, pp. 93–94) describes the entrepreneur as a *man* who is motivated by "the dream and the will to found a private kingdom, usually, but not necessarily, also a dynasty." He is driven by the will to conquer: "The impulse to fight, to prove oneself superior to others, to succeed for the sake, not of the fruits of success, but of success itself . . . Our type seeks out difficulties, changes in order to change, delights in ventures." Schumpeter said that such men are very rare.

In the much younger history, psychologist Sandra Bem developed a masculinity and femininity index (1981). This index contains characteristics that are used to describe masculinity and femininity.[3] Examples of masculine attributes are *ambitious*, *analytical*, *willing to take risks*, *has leadership abilities*, *defends own beliefs*, or *independent.* Those characteristics match perfectly to the early (and still used) descriptions of entrepreneurs. Bem describes femininity with the following characteristics (e.g.): *gentle*, *loyal*, *shy*, *yielding*, *gullible*, *warm*, *tender*, and *understanding.* As we can see, those characteristics are the exact opposite of an entrepreneur.

To sum it up, entrepreneurship is a gendered concept, reflecting characteristics and historical stereotypes. And still today we live in a system where most of us see men as "real" entrepreneurs, and women need to keep up.

3 Challenges for Women

Before we start to change something, we need to understand the status quo and define what exactly it is we need to change. So Iet's take a look into the world of female founders and what it takes to build a business in a men's world.

Building a start-up is everything but a straight and easy path. Research shows that there are gender-specific challenges women face. There are three crucial success factors for a start-up in an ecosystem: access to capital, network, and business model. We need to understand how gender affects each of them.

[3] "Masculinity and femininity are, in Bem's research, seen as two separate constructs. A person can score high or low on each construct. People can either be masculine, feminine, androgynous (high on both constructs) or undifferentiated (low on both contructs). Her original thought was that one shall embody both characteristics for being psychologically healthy." (Ahl, 2006)

3.1 Access to Capital

Money is the fuel for every young business. A start-up has different sources to raise money, from family and friends, through crowdfunding, governmental grants, angel investors, to venture capital and many more. Especially venture capital is a very popular way to raise money fast (Deutscher Startup Monitor, 2021).[4]

Studies show that money is unequally distributed. The Female Founders Monitor, 2020, points out: when deciding to get external capital, 17.6% of male teams receive VC money versus 1.6% female teams. Male teams are over three times more funded by business angels than female teams.

Do women then raise a higher amount compared to men? The numbers disappoint. Only 5.2% female teams raise more than one million euro, in comparison to 27.8% male teams. More than 40% of female teams raise 50,000 euro or less—most likely through crowdfunding, grants, or bank loans.

The problem is complex and there isn't one single explanation for the phenomenon. But there are some potential reasons worth having a look at.

One factor influencing the access to capital is unconscious bias, a well-known phenomenon in science. It is built in our childhood and through our entire life—it is the sum or the guiding principles and morality we learn as a child, how one should look like, what our parents and society told us what is right and wrong. This unconscious bias influences our thoughts and decisions and is difficult to notice. There are many types of biases, but the one that influences people the most is called confirmation bias. It means that one may think left-handed people are more creative than right-handed people—a very trivial example. In general it is "the inclination to draw conclusions about a situation or person based on your personal desires, beliefs and prejudices rather than on unbiased merit."[5] Another bias is called similarity or affinity bias. That means to have a tendency to sympathize and connect with people that have a similar background, share interests, or even have the same phenotype. Last but not least, gender bias is a term that is heard more and more regularly. UBSC professor Sarah Thebaud examined this phenomenon and found that "people are likely to systematically discount the competence of female entrepreneurs and the investment-worthiness of their enterprises."[6] Another finding is that women were rated less skilled and less competent than men which can be boiled down to the stereotypical belief associated with an entrepreneur.

Unconscious bias affects our decisions, and although VC decisions should be based on data—in the end—VCs are placing a bet on a team and their vision. The VC industry is dominated by men. 30over30 VC is an initiative[7] that researched 172 investors in the DACH region. Only 6.1% are having a woman in decision-making positions. One hundred forty-seven companies do not have any woman on

[4] Deutscher Startup Monitor (2021)

[5] https://builtin.com/diversity-inclusion/unconscious-bias-examples

[6] https://techcrunch.com/2015/09/24/the-surprising-bias-of-venture-capital-decision-making/

[7] https://30over30.de/#why

partner level at all. Both facts are alarming: the little share of female founders and the even lower share of women in VCs. Female founders are asking for funding in a men's world, where men set the standards and frameworks for investments and where terms are written by men (for men).

Unconscious bias is not the only reason why women have a harder time to raise capital; it also depends on networks and business models.

3.2 Networks

Networks are important for start-ups as they allow to build new forms of technological relationships, which may create new business opportunities or develop innovations (Mønsted, 2010).

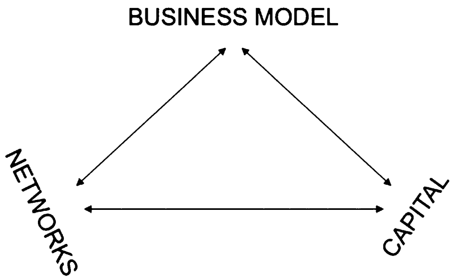
Social networks serve as a connector to resources, information, labor, skills, and investors (Greve & Salaff, 2003). They are an important mechanism for entrepreneurs to grow their companies (Baum et al., 2000; Maurer & Ebers, 2006). While building those networks, relationships with little emotional intensity and intimacy, the so-called weak ties, are favorable (Stegbauer, 2019).

A study conducted in Canada uncovers gender differences in networking. In the first place, women do not have access or connection to informal social networks, as entrepreneurship is a "boys club" and social networks are made up of highly educated, young, white males who connect each other to information, resources, and investors (Watkins et al., 2015). One famous example is the Harvard Business Club that was copied many times by other institutions. Incubators and accelerators can be institutions for entrepreneurs to build valuable networks. Women are often part of social networks, where knowledge about such institutions doesn't exist and in consequence cannot be shared (Ozkazanc-Pan & Muntean, 2018). Further, women build relationships differently than men. While men tend to focus on transactional relationships (weak ties with little intensity), women build connections that are more relational and for a longer time horizon (strong tie relationships). And women decide to not adjust but pursue with their approach which can be seen a coping strategy in the context of gender discrimination (Ranga & Etzkowitz, 2010).

To sum it up, first, women have access to different social networks than men, through which they don't get relevant entrepreneurial information in the first place leading to less entry opportunities. Second, networks in business work best (until now) when relationships are transactional. Women have a different approach and rather believe in strong ties. That leads to a clash of approaches which makes it even harder for women to build networks in the existing start-up ecosystem.

3.3 Business Model

Female teams build their businesses differently than men. While men and women have the same intentions, the reasons to start a business are nevertheless different.



Picture 1 Challenges female founders face in the start-up ecosystem

Studies found that women are above all motivated by, first, gaining independence; second, more flexibility; and third, because of a high dislike of authority. Men rank financial success very high (Malach-Pines & Schwartz, 2008). Women and men seem to follow contrary goals with entrepreneurship. While women see entrepreneurship as a possibility to break glass ceilings, to achieve autonomy, and to balance work-family life independently, men reach for financial success which often comes with strong career liabilities. This is supported by the Female Founders Monitor. In a survey 82% of men (compared to 68% of women) rank economic objectives as their highest priority when building a business.[8]

Women are motivated by social issues. Industry-wise there are more women than men building a business in medicine and healthcare, consumer goods, textile, nutrition and food, education, and human resources. IT companies are mostly led by men; 36.3% of men decide to run an IT start-up in comparison to 8.8% women.

When building a start-up, women choose different strategies than men. They focus stronger on organizational development (female teams 74.1%, male teams 61.6%) and positive social or environmental impact (female teams 74.1%, male teams 44.0%). Only 58.8% of female teams pursue profitability as their overall guiding principle in comparison to 70.9% male teams. That reflects the desire to be independent and flexible and the motivation by social and not financial issues.

Slow and sustainable growth is one of the characteristics most female-led companies share. Since VCs mainly focus on fast-scaling, hockey stick business models, access to capital is harder.

Business model, network, and access to finance do not stand alone (Picture 1). They influence each other and are linked. Networks do have an impact on access to financing institutions. Networks can influence what type of business model one chooses. Once a company is financed by a popular VC, it gets facilitated access to relevant customers, to other VCs, and to human capital to build an outstanding team—which further facilitates fundraising. The selected business model strongly influences the probability to get funding, too.

[8] Female Founders Monitor (2020)

4 Changing the Rules

For a long time, when women wanted to be successful, they needed to adjust to "fit in." They were asked to change, to show more entrepreneurial traits which equaled masculine traits. To transform themselves they were offered workshops in order to learn how to talk with a darker voice; they cut their hair short, started to wear suits, and stopped wearing heals or make up.

Women weren't allowed to be "female" to be successful in the male-dominated (start-up) world.[9] For a few years now, we see change. Thanks to persistent women that are addressing uncomfortable topics, we can observe that ancient, rusted structures are breaking up and make space for something new, hopefully, something more diverse, more inclusive, and more innovative. We see change, but it is only the beginning, and we need a lot more to come.

4.1 Start Early and Break Stereotypes

4.1.1 First of All, Start Early!

We are setting the ground for the ways we think, what we consider to be right or wrong in our childhood. Starting early means we need to start in kindergarten, preliminary schools, and the family. We learn about role models and gender stereotypes already in kindergarten when boys play with cars and girls play with dolls. There is a lot of change happening, and children don't learn anymore that only "dads" do the work and "earn the money," don't cry, or ever show emotions and that only mothers take care of children, cook, and are emotionally more available. But still those role ascriptions exist. To break the stereotypes, we need to show children other role models and that men can do the care work as good as women. Providing a whole range of role models will help to let children accept and live diversity (Pruden & Abad, 2013). As a parent or someone who is responsible for education, one should question oneself if boys and girls are differently treated for the same behavior. Do you tell a boy to stop crying because big boys don't cry and are you encouraging boys to take risks? Do you want the girls to be nice and pretty and to not be too loud? This is how our unconscious bias is formed, laying the ground for future competences.

As grown-ups we need to accept and be aware of the fact that we all have unconscious biases. Every time we make a decision fast, the probability is higher that it is strongly influenced by our biases. Take your time, reflect on the information, speak to other (diverse!) people, and ask for their opinions. Pay attention to characteristics that are bias related, e.g., age, disability, gender, religion, and maternity. It helps to regularly reflect on your behavior, on your decisions, and to surround

[9] Side note: This applies for men either. Men showing "female" traits were not considered real entrepreneurs as well. But still they had the advantage of receiving advance praise.

yourself with diverse people regarding background, gender, opinions, culture, and education.

To reflect on oneself and one's biases helps women and men equally. Rigid gender role ascriptions create expectations for men, too. We all could live more freely, when understanding and reflecting our biases.

4.1.2 Don't Change the Women, Change the System

Don't blame women for shortcomings. Don't ask women to adjust; adjust the system. It is not women that need to behave differently, or more "manly"; it is the system that we need to question and to change subsequently. Make the start-up ecosystem more inclusive to female founders.

We need more spaces where female founders can connect and network. Those spaces should be safe and welcoming for women, giving them a place to exchange without being judged.

When planning an event, make sure to put women and men on stage, 50/50 if possible. Put effort into finding women; convince them that they have something to say. Give them a stage and be part of creating new role models. We need to normalize female entrepreneurs; they should not be the alien on stage.

We need more women in decision-making positions at investment firms. As we have seen before, the VC industry is dominated by men, and this is a big barrier for women to pursue a career in VC and for female founders.

4.1.3 Investments for Female Founders

Studies have shown that women are extremely successful using crowdfunding strategies. They keep their independence, get direct feedback from customers, and benefit from visibility. It seems like a win-win situation. But crowdfunding can only help in the beginning. It is one way to finance the very first product and to validate the market. "The CrowdSpace" did some research and found that successful crowdfunding campaigns have raised 28,656$ on average.[10] This is amazing for the beginning, but bigger VC tickets are later on necessary to leverage in the growth phase.

We need a VC landscape that is actively investing in female-led businesses. I recommend bringing transparency into the scouting process, to track numbers and to define measures to screen more female-led companies. The more female-led companies a VC sees, the higher the probability to diversify the portfolio. Amazing initiatives are popping up like Encourage Ventures (Encourage Ventures, 2022)[11] that is exclusively investing in female-led start-ups. There are more and more examples of VCs that are changing the industry and are boosting the debates. And it is worth it. A study conducted in the US by PitchBook, J.P. Morgan, and Beyond The Billion found that female founders are outperforming. They exit quicker and at higher valuations.

[10] https://thecrowdspace.com/how-much-can-you-raise-through-crowdfunding/

[11] https://encourage-ventures.com/

5 Closing

It makes me happy to see a movement in the start-up ecosystem, a transformation in the direction of more founder diversity and business model diversity. Allowing diversity is key for more social innovation. Sometimes to me it feels like we are making baby steps or even a step backward. But it is constantly changing, and the discussions are extremely important to raise awareness. It is great to see that more and more studies related to female founders are published. The more data we have, the more knowledge we have, the better we can build an inclusive environment. And I am proud to be a part of it.

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Tatjana Winter is an expert in entrepreneurship, start-ups, and innovation. Since 2018 she works as Venture Development Manager for Deutsche Bahn Digital Ventures and is responsible for scouting and investing in Start-ups and integrating them into Deutsche Bahn. Before she worked as innovation consultant and helped in building an InsurTech Startup. In 2021 she started her own company, Talentlabor, with the aim to drive innovation and digitization in SME'S.

She has a background in management and an MBA in innovation and leadership and is a PhD student in the field of (female) entrepreneurship at VU Amsterdam.

Social Innovation and "Surprises" in the Electricity Grid

Jan-Peter Doomernik and Peter van der Sijde

The world is rapidly changing. The Fourth Industrial Revolution is taking the world head-on (Schwab & Davis, 2018), and "information" is the key concept nowadays: we, humanity, rely on information[1], and for this we consume "energy." Energy is in abundance around us, especially energy that comes from the sun: the sun produces more energy than the world consumption, and already in 1968, "power from the sun" was identified as a future source of energy (Glaser, 1968).

The challenge of our times is to capture that energy for the sake of our dependency on information; for both "information" and "energy," we need infrastructures to distribute these from the producers to the users and vice versa. Such infrastructures are called "vital infrastructures" or "critical infrastructures" that form the backbone of our present-day society (Shrier et al., 2016) and are those infrastructures that:

> also referred to as nationally significant infrastructure, can be broadly defined as the systems, assets, facilities and networks that provide essential services and are necessary for the national security, economic security, prosperity, and health and safety of their respective nations. (Critical Five, 2014, page 3)

[1] An observation we like to make here is that a limitation of "information" is that it stems from **measured values** or **data** and is thus always linked to the past and to the known. Relying on information means relying on predictability of the future. A predictable future means no surprises. Our contribution is about surprises.

J.-P. Doomernik (✉)
Transition Division - Department: Innovation & Development, Enexis Netbeheer, Den Bosch, Netherlands

Faculty: Science, Business and Innovation, Vrije Universiteit, Amsterdam, Netherlands
e-mail: jan-peter.doomernik@enexis.nl

P. van der Sijde
Faculty: Science, Business and Innovation, Vrije Universiteit, Amsterdam, Netherlands
e-mail: p.c.vander.sijde@vu.nl

A. Ruthemeier et al. (eds.), *The Global Impact of Social Innovation*, Management for Professionals, https://doi.org/10.1007/978-3-031-03849-5_7

Energy and the electricity grid is such an infrastructure—vital to society, meaning it should always function. This introduces what is coined by the Rathenau Instituut (1994) as the “vulnerability paradox”: the less vulnerable a country proves to be in her (vital) infrastructures—in our case the electricity grid—the harder it is hit by any disruption in the production, distribution, and consumption of electricity (1994, p. 10). One of the major causes of this is the interdependence of the electricity grid with other critical infrastructures (such as water supply and water management, telecommunications, and transportation) and the connection to the Internet and the role of Internet technology. Many reports (e.g., reports from Büro für Technikfolgen-Abschätzung beim Deutschen Bundestag) describe what happens when the electricity grid breaks down for several days and show that this will have a cascading effect on the breakdown of other vital infrastructures. **Any of those breakdowns (“blackouts”) will increase the likelihood of (civil) unrest:**

- Communication: Tele-data and radio communication will break down immediately but the latest after a few days.
- Traffic and transport: Infrastructural operation and control systems and signage in car, train, air, and water traffic will fail after a few hours and will limit operations severely. The failure of gas stations limits the availability of gasoline, disabling the transport of food and essential medical supplies.
- Water and usage: Water infrastructures will be hit significantly due to failing pumps. Emergency solutions will last only a limited amount of days.
- Food: Access to unspoiled food is impacted severely. Private cold storage will stop immediately. Industrial cold storage will fail in most cases within 2 days. Also essential animal care by farmers will be impossible within hours.
- Even with the help of emergency services, medical and pharmaceutical care breaks down within a week. Cash will be unavailable within a few days, causing discontentment and aggression within the civilian population. Prisons break down within days (Petermann et al., 2011, P9-P24).

Yet in the end, it will be the reaction of man and not the malfunctions, the debris, and destruction that determines the size of the catastrophe.

Such a scenario developed and showed its “reality” more than once; the events after “Hurricane Ida” in Louisiana (United States) in 2021 is a case in point. Natural disasters are identified as risk in the risk management of parties that operate and maintain the electricity grid like TSOs (transmission system operators) and DSOs (distribution system operators).

The electricity grid cannot be considered in isolation; moreover all vital infrastructures depend on the interaction with the electricity and digital grid. An illustration of this interdependency became reality after the breakdown of the backbone network connectivity of Facebook in October 2021 that caused the disconnectedness of Facebook from the Internet and about 2.8 billion users of their services. Facebook realized that they knew that flipping their services back on simultaneously could potentially cause a new round of crashes due to the surge in traffic. “Individual data centers were reporting dips in power usage in the range of tens of megawatts, and suddenly reversing such a dip in power consumption could put everything from electrical systems to caches at risk” (Facebook Engineering, 2021). Other than natural disasters, the emergence of the tipping and the breakdown of an information service of this proportions was a new and unexpected event.

Figure 1 shows this in a more abstract sense the interdependency between the vital infrastructures. In the cases we just mentioned (Hurricane Ida and the Facebook outage), an important issue to consider is whether the solution in those cases resulted in a new equilibrium or a restored equilibrium, in other words was the “event” (surprise) a “tipping point” or not (Nes et al., 2016).

1 Challenges to the Electricity Grid

The electricity grid today is primary built around our fossil energy resources and is in transition toward the inclusion of new energy sources originating from the sun, wind, and water (e.g., Zou et al., 2016); our electricity grid as a vital infrastructure needs to be resilient (Mehvar et al., 2021) and reliable, but is it really? As the European Commission (2011) writes in their report on *Smart Grids: From Innovation to Deployment*, “without serious upgrading of existing grids and metering, renewable energy generation will be put on hold, security of the networks will be compromised, opportunities for energy saving and energy efficiency will be missed, and the internal energy market will develop at a much slower pace” (European Commission, 2011, p. 2).

Another issue concerns the transition from fossil energy sources toward renewable energy sources. This topic is widely studied in the scientific literature; many feasibility studies in many countries are reported on the possibilities, potential, and problems (e.g., Heard et al., 2017). But, as York and Bell (2019) question, is the transition really going on or is it just adding energy sources? Is it the “adding” of new energy sources that violate the resilience of the electricity grid? The following example may illustrate this situation:

> From 2004 to 2007, more and more greenhouse horticulturists in the Westland area of the Netherlands choose to implement a technology called CHP (combined heat and power). This gas-fired technology enabled these traditional major electricity consumers to fulfill their heating need and produced electricity far beyond their needs. It became an additional product that could be sold and fed in to the (national electricity) grid. In 2007, their decentrally combined energy production capacity was over 500 MWe, close to the comparable production of a typical coal plant. The change of the greenhouse-horticultural region from a major power *consumer* to an electricity *producer* in just a few years was unforeseen and caused unforeseen problems to be solved. In 2008 this impediment was the start of the development of the first congestion management solution in the Netherlands.
>
> This example also illustrates, that in first instance, the event” went by unnoticed; it was unplanned and noticed when it caused problems. The example continues:
>
> Ten years after ending the congestion management in the Westland, the system, again, has the full attention of the regional grid managers; not because of the CHP drives energy supply, but because high gas prices incentives greenhouse horticulturists to shut down their CHP, causing demand-driven congestion, while new elements like solar- and wind parks,

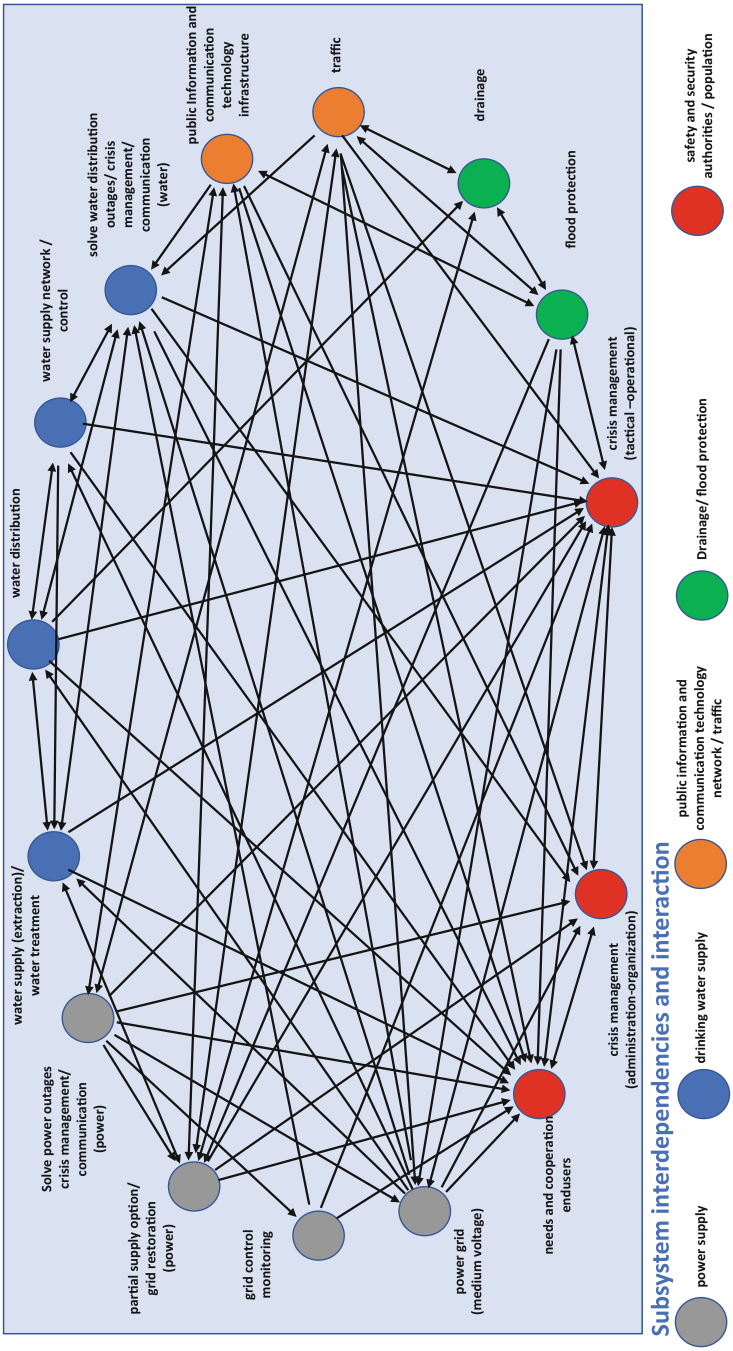

Fig. 1 Dependencies between the vital infrastructures (source: Fekete et al., 2019)

cause supply congestion. Both forms of congestion request and drive a fast-growing need for transport capacity for demand as well as supply.

It is not just a case of "serious upgrading"; it is there more. How are DSOs coping with and resolving these challenges and is this appropriate? In this contribution we'll first sketch new ways to look at the electricity grid as open instead of a closed system using the ideas of Weinberg and Snowden. Then we focus on (social) innovation as a means to contribute to the solution of the problems we sketched.

2 Coping with Challenges to the Grid

Congestion in the electricity grid system should be avoided at all times. Congestion management is a way of dealing with it. But, more important, as Pillay et al. (2015) state: "congestion management is a tool for efficiently making use of the power available without violating the system constraints" (Pillay et al., 2015, p. 83)—meaning solving the congestion within the system. Narain et al. (2020) distinguish three types of tools for congestion management connected with the stage of the process: generation side (supply), transmission side, and end-user (demand) side. In this contribution the focus is on the DSO and the transmission side, which is caught in the middle. The DSO has to cope with the "surprise," the event that escalates the system, de-escalates it, and creates a new equilibrium.

In all stages of the process, planning and control seem vital. However, our planning and control efforts, so far, could not protect us from "surprises" in the functioning (such as in the horticulturist example) and occasionally in breakdowns of our vital infrastructure: surprises and breakdowns ("occurrences") that originate from outside the system and happens. Systems thinking helps us to understand what, why, and when the moments are that our models of planning and control, based on simplification, no longer work. According to Weinberg (2001), as soon as the measured values differentiate from the predicted values, the validity of the models and the underlying simplifications should be assessed. As Meadows and Wright (2008, P 168) put it: "The idea of making a complex system do just what you want it to do can be achieved only temporarily at best. We can never fully understand our world, not in the way our reductionist science has led us to expect."

The systems theory of Weinberg (2001) provides a theoretical background to understand such occurrences. If we want to come to some form of predictability, we need, according to Weinberg, simplification of complex reality. Figure 2(a) depicts how Weinberg distinguished, based on complexity and randomness, three different forms of complexity.

The area "organized simplicity" (see Fig. 2(a)) only takes a limited number of significant actors in consideration. As long as you measure what you have predicted, a closed system model proves possible where all unconsidered actors can be neglected. In the greenhouse horticulturists' case, we identified a group of actors that no longer could be neglected, proving that the model based on organized simplicity was no longer valid.

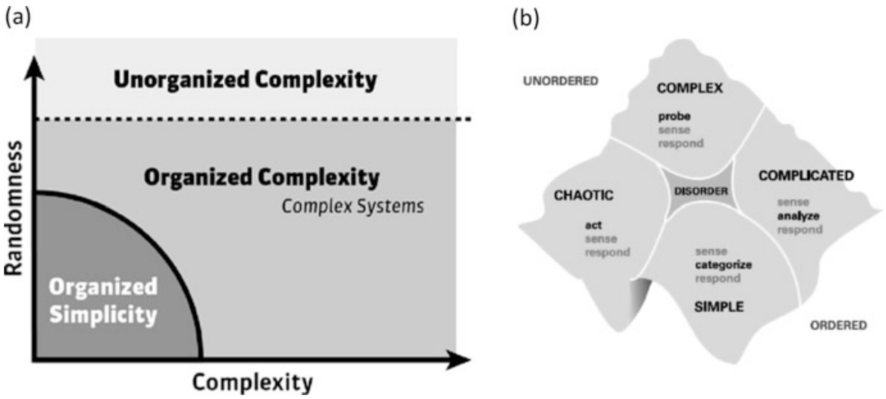

Fig. 2 Types of systems according to (**a**) Weinberg (source: Weinberg, 2001) and (**b**) Snowden (source: Snowden & Boone, 2007)

In the area "unorganized complexity" (see Fig. 2(a)), it is not possible to predict the behavior of one entity, but based on statistics, the behavior of all entities can be predicted as long as there is sufficient "randomness" in the system; and afterward the predictions are verified by measured values. "Organized complexity" is the region where "populations are too diverse for analysis and too structured for statistics" (Weinberg, 2001, page 18).

The artist Simon Weckert (www.simonweckert.com) and his "Google Maps Hacks" provide an example of how a system can glide into the state of organized complexity, while analyzing and acting on insights of data still imply that the system is in a state where prediction based on simplifications works: it proves possible to statistically predict and optimize the throughput of cars through the streets of Berlin, a task of the Senate of Berlin, until the increased usage of Google Maps. Google Maps offers (nonrandom) guidance if roads got cluttered, which lead to cut through traffic, which was unwanted from the perspective of the Berlin Senate. The cut through traffic was clearly visible in data of "yesterdays" traffic movement, and additional measures like road block cut be put into place to enforce the disuse of cut through opportunities. The situation seemed again under control. Until the artist Simon Weckert walked with a cart with 99 mobile phones with Google Maps apps through the streets of Berlin. A phone with an app represents a car in Google Maps. Ninety-nine phones represent a super traffic jam which pushes the traffic toward uncluttered roads (in the determination of the Google Maps algorithm). This example shows that Google Maps has a severe impact on the randomness and changed the structure of the system. It caused a number of slumbering feedback loops that were not visible in "yesterdays" data. A cascading effect that could occur in such a changed system by triggering the slumbering feedback loops, like Weckert did in his intervention, seems not foreseeable by directly analyzing "yesterdays" data.

Similar things happen in our vital infrastructures: there are causes outside the elements monitored (in the examples the planning of power plants and their impact, the traffic flow through the streets of Berlin) that causes the system to behave different than predicted. These unmonitored elements (in the examples the greenhouse horticulturalists with a CHP installation or the cars with Google Maps on board) either increase the number of elements that have to be taken into account (increasing the complexity) or influence the behavior of elements to the extent that it becomes less random and more algorithmic or both. In both cases the structure of the system has changed and won't return to the old way of functioning, minimally stressing but more likely destroying the predictability that we hoped to find in the simplification of the given situation. Often a second (follow-up) event clearly visualizes that the system structure has changed resulting in unexpected impact of the behavior of those earlier unnoticed entities increasing the likelihood of "organized complexity" (see also our example of the Westland).

Congestion management in a context of "organized complexity" tries to solve the situations using known procedures to restore the equilibrium in the system that were designed to operate successfully in a simplified context. The actual context is too diverse for analysis and too structured for statistics. In other words the offered solution doesn't fit the problem context anymore, which will lead to new and unexpected surprises that will most likely weaken the system. The occurrence or absence of a breakdown of system resilience becomes a question of luck.

Snowden and Boone (2007) developed a new way of looking at systems, categorizing the system context and acting upon it. They labeled their framework "Cynefin" and as they explained "a Welsh word that signifies the multiple actors in our environment and our experience that influence us in ways we can never understand" (Snowden & Boone, 2007, p 69). The Cynefin framework is developed for making decisions and starts by assessing the situation (see Fig. 2(b)). If there is (or seems to be) a relation between cause and effect, the situation is called "predictable"; if not, it is "unpredictable." In the case of blackout of the electricity grid, as described earlier in this contribution, there is no apparent cause and effect relation. It is an unplanned and unexpected event: in short "a surprise." It is a phenomena that emerges surprisingly out of countless possible feedback cascades. In terms of the Cynefin framework, we are dealing with unpredictability: a context that is either chaotic or complex—in a way comparable to Weinberg's "unorganized complexity." The response action according to the Cynefin framework in a complex context is probe, sense, and respond—the thing to do in case of a situations too diverse for analysis and too structured for statistics.

Also in the case of the greenhouse horticulturalists, their unexpected emergent behaviour lead to tension in the Dutch energy system which resulted in congestion, unforeseen in the cause-and-effect simplifications, used to plan, predict and control. The task at hand is to restore the equilibrium, but are these situations avoidable? According to Snowden and Boone, one of the responses should be "work to shift the context from chaotic to complex" (p. 75). Congestion management is a response, but a response within the system that caused the "surprise" and uses the means of the system. It would make sense to ask different questions. An important question might be regarding the boundaries of the electricity grid: what is considered part of the vital electricity infrastructure and what is not. The electricity grid as a vital infrastructure that is under control of a DSO is the distribution network of electricity, but aren't the "surprises" coming from outside the electricity grid system, meaning to look for new ways to cope with challenges to the grid?

3 Innovation and Creativity Under Pressure

Coping with challenges in new ways asks for innovation and creativity, even in situations when the systems are under pressure and such are the situations when electricity blackouts are lurking around the boundaries of the grid.

Innovation has received a wide range descriptions and definitions over the years, but in general, it is about the creation of something new: a new technology, a new process, a new business model, or a new market. Social innovation, according to many authors, refers to "innovative activities and services that are motivated by the goal of meeting a social need and that are predominantly diffused through organizations whose primary purposes are social" (Mulgan, 2006, 146). Innovation in the framework of vital infrastructures is "social innovations," since a vital infrastructure functions to avoid a collapse of society. From a Weinberg perspective, de-escalating the system in a context of social innovation by diminishing the number of slumbering feedback loops could prove a promising intuitive path. To cope with the issues at hand, we propose a strategy consisting of three strands.

Strand 1: Dealing with the problem at hand ("problem solving")
Strand 2: Implementing "innovation commons"
Strand 3: Changing mindsets of DSO

In the remainder of this paper, we will elaborate the strands 2 and 3. Strand 1 needs no elaboration in this paper, because this is "business as usual" for DSOs, and one of the ways to solve the problems that have been developed is "congestion management." In a way we could label congestion management as a product of bounded creativity under pressure.

Strand 2: Implementing "innovation commons"
Potts (2018) describe an innovation commons as a "governance mechanism to create a pool of resources with respect to a new idea or technology of uncertain prospect" (p. 1028). This type of commons is different from the ones that Hardin (1968) described in his seminal article, where he focused on the downturn of the commons ("the tragedy of the commons"). For the innovation commons, three game rules are important:

- "It should be about a prospective new idea, invention or technology.
- The resources are distributed, including information relating to the idea.
- Fundamental uncertainty (or sheer ignorance) about the nature of the entrepreneurial opportunity associated with that idea (Potts, 2018, p 1029)."

We suggest to add a condition (inspired by the Cynefin's probe, sense, and respond actions in a complex context): an innovation commons should be limited in time to diminish the likelihood of analysis and encourage probing and sensing. According to these game rules and time constraints, the so-called hackathons have been organized to explore solutions that are potentially not "best-practice" examples but examples of "changed practice." An example for such a change practice that also led to a scientific publication, stemming from a hackathon, aimed at social innovation, was the proof of concept, built by team Kryha.io, that showed how machine to machine interaction can lead to movable infrastructure. Infrastructure that emerges where you need it may be organized by new organizations or unlikely parties.

> Swarm Robotics (SR) faces a series of challenges impeding widespread adoption for real-world applications. Distributed Ledger Technology (DLT) has shown it can solve a number of these challenges. An experiment was conducted to showcase the resolution of these challenges. A search and rescue mission was simulated using drones coupled with single board computers and several simulated agents. Inter-agent communications were facilitated through DLT in a completely decentralized network. A frontend interface was built to demonstrate the ease with which information can be extracted from the system. It shows the feasibility of the application of DLT to SR-related challenges in a practical experiment. For future work, it is proposed to focus on more complex tasks through federated learning or inter-swarm communications, possibly through Cosmos. (Khawalid et al., 2019)

These new organizations (or unlikely parties) would be the parties that identify the most crucial value *in the enhancement of the resilience of the system* and not in harvestable value streams: for example, (a community of) local inhabitants who flourish when their vital infrastructures function flawlessly, which also would increase the economic value of their property; municipalities that could offer superior settlement and operation conditions for new entities and organizations, due to superior vital infrastructures; and last but not least co-creating synergetic vital infrastructures (e.g., mobility infrastructures due to transportation synergies or wastewater infrastructures, where the residue of wastewater treatment plants could be used as energy factories). Team Kryha also identified the possibility to integrate in "moving city" concepts, like refugee camps, festivals that in their perception could evolve to actual moving cities.

In the social innovation hackathon the year thereafter, the "change practice" progressed to another, self-sustaining level: a nature-inspired decentralized self-evolving machine to machine swarm aimed at facilitating commons (Winning Pitch Team Kryha, https://www.youtube.com/watch?v=ir4W_Wa3Pzk).

Strand 3: Changed thinking and changing mindsets of DSO

DSOs have a task of distributing electrical energy via their networks throughout a country. They operate and maintain a fixed-physical network (in the ground); what would it mean if a mobile network of energy distribution would be added to this as part of the DSO network? This kind of thinking should challenge engineers and managers to think about the integration of the two for a stable energy distribution as be imposed by law. What would this mean, and moreover, what is the potential? The outcomes of hackathons could function for DSOs as triggers for creativity and innovation, if and when they accept to deal with the surprises using new ways of thinking (new mindset). If their predominant focus becomes the resilience of vital infrastructures, beneficial for society, in a resilient context, there are numerous amazing technologies to explore. An example to illustrate amazing potential is as follows:

Maana Electric is a company that use its knowledge and technology to "revolutionise the way in which solar panels are produced on earth and *in space*. How it works: normal sand goes in, solar panels come out" (www.maanaelectric.com). This implies that a technology exists that everywhere, where there is sand, a solar panel could be 3D-printed. Such a technology enables the emergence of elements of electricity infrastructure where it would be needed.

4 Concluding Remarks

The electricity grid is a vital infrastructure of which the boundaries have to be redrawn and redefined; this requires a new way of thinking about our vital infrastructures by new and maybe even unlikely socially focused co-creation partners. As the Maana and the Kryha example shows, infrastructures are flexible and movable from a technical point of view. This example of "change practice" has direct implications for the way festivals as "movable and/or mobile cities" can be conceptualized and implemented. Through technology its functionality can be made available anywhere on demand. Solutions (and applications) developed for one occasion can be shared via innovation commons and made available anywhere on the planet (and beyond) and could be operated by new organizations that predominantly focus on resilience.

We need innovation in the social space of the electricity grid (social innovation) to create multiple paths (equifinality) in working ecosystems. We need to cope with the "surprises" in the electricity grid and realize that developing the energy grid toward a "new level" is the only way to handle what we call "surprises." We need creativity under pressure to help us to think outside the boxes and think more about new and never-thought-of infrastructures (the function of, e.g., electrical vehicles as part of a mobile infrastructure in the energy grid) as an extension of the existing infrastructures in the ground. Part of the electricity grid should transition into a permanent innovation commons to explore how through using, combining and evolving this grid new social needs and developments can be met for the benefit of many—a "commons" to creatively explore how *new* social needs can be developed and met and a commons where people and technology can freely meet and interact to contribute to solutions for present and future social needs. The present electricity grid can cope with surprises, but how long before we cross the point of no return—a dreadful week of failing vital infrastructures, a much more grim tipping point?

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Jan-Peter Doomernik is a PhD student at the faculty of science, business, and innovation of the Vrije Universiteit in Amsterdam, the Netherlands. He also works as an innovation manager at the Dutch distribution system operator Enexis. Educated as an mechanical engineer, he worked at large corporations in banking, insurance, and in energy, always in environments of high complexity. He is focusing presently on unforeseen risks triggered by the limitations of control in a complex context, with a special interest in unexpected system tipping points where predictability fails. His goal is to help vital infrastructures emerge that continue to function in unpredictable and unanticipated circumstances.

Peter van der Sijde is professor of organization, entrepreneurship, and technology at the Vrije Universiteit in Amsterdam, the Netherlands. Educated as a psychologist, he found himself working in the world of entrepreneurship and technology, where he studies the interplay of technology and entrepreneurship and its consequences for organization. Topics he is interested in are university-business interactions, the entrepreneurial university, and issues connected with high-tech entrepreneurship and innovation. He is, presently, academic director of the master program Science, business, and innovation a program that prepares students to work at the interface of the world of science and the world of business.

An Agile Leadership Framework for Business Leaders to Launch, Evaluate, and Sustain Social Innovation

Chuen Chuen Yeo

> **Solving a problem means making profit.**
> Michael Porter
> Harvard Business School Professor

1 Business and Social Innovation: Two Separate Worlds

The pandemic has made consumers and citizens look at the value of businesses through different lenses. Profit with purpose, the new norm for businesses, means businesses of the future need to be "recognized as forces for good" (Zappulla, 2019).

In the 2021 Deloitte Global Millennial Survey, however, less than half of those surveyed see business as a force for good in society. Although this result is better than previous years, indicating that millennials' and gen Z's perception of businesses may be turning, it also indicates that businesses need to show more substantial impact and fulfill their corporate promise to society (Deloitte, 2021).

With boundaries broken and entire industries disappearing or merging, businesses need to take the chance to repurpose themselves and the value they bring to society. In addition, the 21st Annual Edelman Trust Barometer (2021) reported that business has now become the only trusted institution, where 61% of surveyed respondents indicate trust in businesses ahead of NGOs, government, and media. In the same report, 86% of those surveyed also "expect CEOs to publicly speak out on one or more societal challenges, pandemic impact, job automation, societal issues, and local community issues." Therefore, businesses need to step up, relook their involvement in the space of innovation, and provide solutions in the form of products, services, or models that solve a pressing social or environmental

C. C. Yeo (✉)
ACESENCE Agile Leadership Coaching and Training, Singapore, Singapore
e-mail: chuenchuen@acesence.com

A. Ruthemeier et al. (eds.), *The Global Impact of Social Innovation*, Management for Professionals, https://doi.org/10.1007/978-3-031-03849-5_8

issue, creating social relationships while designing the solution and bringing about new ways to collaborate and interact (Tomos, 2020).

Some business leaders may argue that the duty to close the growing gap and wide range of societal issues should be the responsibility of governments. However, consider this from the consumers' lens.

Would they also face issues that result from higher life expectancy? Chronic diseases? Access to healthcare and financial systems for the elderly? What about consumers who are women and minorities? Would they want to be associated with a brand that helps them level the playing field, overcome unconscious bias, and equip them with skills and attitudes that will remodel the career ladder?

In relooking at ways to deliver more value and be a force for good in the eyes of consumers, businesses must actively consider what consumers want of them. Millennials and gen Zs are highly concerned with the environment, wealth inequality, mental health, and systemic racism. More than a quarter of millennials and gen Zs said that certain businesses' environmental impact had influenced their buying decisions (Deloitte, 2021). With this strong evidence and call from consumers, businesses will do well by responding appropriately. By prioritizing and optimizing their innovation strategies, they can build trust with consumers, retain talent, and prolong corporate longevity, while fulfilling social responsibility.

In addition to being consumer-centric, like all successful businesses, we also need to acknowledge the current state courageously. The old paradigm of waiting for intervention from authorities to address social gaps or depending on government aid is inadequate (Urama & Acheampong, 2003). Therefore, businesses with different expertise and strengths are in an excellent position to couple innovations with optimal business strategies that will maximize economic growth and bring about positive and substantial social impact. That truly is the value of weaving business and social innovations together.

2 Understanding the Differences Between the Two Worlds

Business innovation and social innovation have traditionally been operating separately. However, when these two fields converge, it presents limitless opportunities for revenue growth and, more meaningfully, actual progress on sustainable development and social impact issues.

Several barriers do, however, exist between business innovations and social innovations. Systematically, philosophically and operationally, there are differences (Havas, 2019). To put the two distinct areas together, we need first to understand the differences and then, with a new mindset, start reshaping the areas to form a new collective field, combining the best practices from both.

Business innovation, undertaken by companies to improve business performance, increasing revenue while keeping costs low, views innovation not as an idea but as a solution with a precise practical use. The solution does not have to be novel. Innovation from a business lens could be new to the organization using it, to the target market, or the world (Havas, 2019). Business innovations are traditionally less concerned with the negative changes that result from the innovation, like pollution, unintentionally widening the gap between the wealthy, well-informed, and well-resourced.

Social innovation, too, could similarly cause imbalances in society in their bid to serve certain members in a society. However, remember the fact that no society is ever entirely homogenous, and not negating the fact that even the marginalized and disempowered members of society still have their values and views, the members that the social innovation was meant to serve might perceive the change brought on by social innovation in a different or even negative way. Furthermore, the interconnected nature of social communities also cannot be ignored because a solution that benefits one part of society could impact other groups negatively and measurably (Havas, 2019).

There have been both successful social innovations as well as failed ones. Learning from the successes and failures is essential because, when well-implemented, social innovation helps solve some of the world's most pressing problems like fair trade, distance learning, mobile money transfer, restorative justice, and zero-carbon housing (Urama & Acheampong, 2003).

3 The Price of Failure

According to the European Commission's definition of social innovations, these are "new ideas that meet social needs, create social relationships and form new collaborations" (Ukar et al., 2019). Expressed in the form of products, services, or models, these address needs previously unmet not only more effectively but become socially accepted, diffused in society, and eventually form a new social norm.

When successful, social innovations potentially could change societies on the fundamental level. However, like any enterprise that requires an intelligent design so that the innovation can be integrated into the complex ecosystem, scaled, and sustained to amplify its success and benefits, the reverse, i.e., failure of any social innovation, is not without cost and consequences.

In the case of businesses fading away due to lack of relevance as we expect in the future—life spans of businesses are shrinking rapidly (Viguerie et al., 2021)—business creation and destruction will be a common sight. As a result of creative destruction, what stands in the place of an older business might be a better version. The impact on the recipients of the products and services could be more negligible or insignificant. However, when a social enterprise or business set out to close the gap or be the voice on a particular social issue shuts down, its exit from the market leaves a void that affects those populations or ecosystems that the business was created to serve. Given the heavy price of failed social innovations, businesses and organizations need to revisit their strategies and approaches frequently to prevent creating a significant adverse effect in the cause they aspired to serve.

Examining the mistakes made by other social innovations is a worthy exercise. These are lessons businesses can learn from so that they may avoid them in the future.

3.1 Learning from Failed Social Enterprises

A study published by The Failure Institute (2017) highlighted some leading causes of the failure of social enterprises. While the enterprises studied were limited to Mexico, the findings below could still yield valuable insights for businesses embarking on social innovation parallel to business innovation.

3.1.1 Lack of Support Funds and Infrastructure, How to Get Funded Consistently

Every business needs funds to sustain, so getting consistent funding becomes crucial. Based on the report, it was said that in many social enterprises, while having great ideas that could potentially shape society and change mindset, the entrepreneurs who led them lacked the skills to integrate projects to obtain social funds. This is one clear area where profit-driven organizations with a lot more economic savviness can excel. Obtaining investments that ensure consistent funding will raise the chances that social innovations can grow and extend their intended influence.

In a report by Mair and Gegenhuber (2021) looking into factors that foster successful open social innovations to address pandemic-related social issues, Gegenhuber said, “Opening up and making a call that people come together and help—that is the easy part. The challenge becomes when viable projects grow, and even more so as they attempt to scale. At these later stages, there is a lack of support in the realm of social innovation, and we saw that the possibilities for financing are just not accessible.” This report concluded that social innovations and initiatives require “long-term and political support to create viable policies” (Mair & Gegenhuber, 2021).

3.1.2 Complex Public Policies Cutting Across Domains Not Keeping in Pace with One Another

The environment in which social enterprises operate is often not ideal because public policies have not kept pace with them (The Failure Institute, 2017). Social enterprises could have recognized a need for a particular social cause, but governments might not. The greatest paradox is that social innovation policy-makers often cannot influence the factors. In contrast, they need to influence other decision-makers who devise the overall policy measures that directly impact the conditions for social innovations (Havas, 2019).

The nature of social innovations adds a high level of complexity because one has to reach out to a large number of stakeholders in order to align policies.

For instance, social innovation in empowerment and capacity building is influenced by interdependent policy domains: education and culture, labor market and employment, social care and social housing, regional development, health, and taxation (Havas, 2019). A thorough understanding of the policies involved to orchestrate a social innovation that can live from idea to implementation requires a savviness in navigating the system. Ultimately, systemic change cannot be actualized with the current policies and practices (Schot et al., 2019).

3.1.3 Lack of Alignment Among Founding Partners

Many social enterprises are founded by a group of partners. Although strong reasons initially bring such groups together, one common reason why social enterprises fail is the conflict between the founding members (The Failure Institute, 2017).

This could have been due to a lack of clarity in the areas of responsibility, a lack of commitment by the founding partners when it came to scaling and overcoming the various implementation challenges, or simply differences in opinions where the approach is concerned.

Business leaders who have experience in aligning and building high-performing teams will have a distinct advantage.

3.1.4 Lack of Clear Measurements and Evaluations

Clear measurements and evaluation are often necessary for social innovations to secure further funding and resources. However, the lack of economic savviness and aligning with complex external policies exacerbate the lack of meaningful and tangible measurements. Without these measurements, it will become even more challenging to convince authorities and partners to make changes or contribute more resources by adjusting policies or granting more funds to scale and sustain social innovation efforts.

Galvanizing people to the cause is often the easy part, but after showing initial promise and once businesses start to scale, many weaknesses would be exposed, which then terminates the social innovation prematurely. These, along with the earlier points, are weaknesses that businesses are better equipped to address.

3.2 Characteristics of Successful Social Innovations

For any organization to champion a social innovation and have it take off, it must ultimately consider how it can create systems change where beliefs and mindsets are nudged. A study by Schwab Foundation for Social Entrepreneurship in collaboration with Bertha Centre for Social Innovation and Entrepreneurship, University of Cape Town Graduate School of Business, South Africa (2017), of six organizations found "the most important theme arising from these systems entrepreneurs or, social entrepreneurs innovators who are creating systems change is a mindset that removes the organization or even a program as the central object of focus, and instead focuses on influencing the social system itself." This results in permanent changes in behavior, allocation of resources, and social power structures.

The key is to design an experience with consumers such that once their mindsets are shifted and they are bought into the experience, more ambassadors are naturally produced. That is where scalability can be achieved easily.

Another critical fundamental belief that innovations need to be designed with is the belief that people can solve their problems and interpret their own lives (Tomos, 2020). That means the beneficiaries of social innovations, even the marginalized and underprivileged, are not merely receivers of help but active participants in creating a new and more equitable ecosystem. Social innovations designed with such principles tend to be more successful and grow beyond the initial trial period and to evolve with co-creation and participation from its members and drivers.

The two factors above were evident in the following case study of the spread of cooperative schools where pupils, staff, and local community could participate in school governance in the UK. Additionally, the program started with 10 cooperative trust schools in the trial stages in 2004 and continued to grow sustainably in the long term – from 188 in 2011 and eventually to 742 in 2014 Davies (2014). The long-term success and continued scalability of this new school structure were also attributed to the following:

1. Values – drawing from globally shared values, the values associated with cooperatives are attractive for many—both intrinsically and for how they fit with a participating school's existing ethos. This set of cooperative values was then formally recognized in the cooperative college as a set of ethos that all can subscribe to. This encouraged schools to come on board and be actively involved.
2. Timing – due to pressure from the government's plan to "push for radical educational reform," there was high readiness for change and the need to take control instead of "being subjected to" changes. This was also aligned with the belief that participants in social innovations are active instead of passive members. The pressure for educational reform spurred receptiveness in the early adopters who wanted to make the change meaningful by having an ethos that fits the school's existing ethos. Instead of setting up the cooperative college to "convince" others, the timing was ripe as schools were ready to engage and embrace change immediately.
3. Adequate support for adopters to navigate complex policies—predicting that adopters of the social innovation will not possess the know-how to navigate multiple complex policies, the cooperative college commodified the process in a way that made it simple and repeatable for schools. It established robust governance mechanisms that directly engaged vital stakeholder groups—parents, staff, learners, and the local community through membership with only two full-time staff. By tapping on independent associates who became experts in engaging and facilitating legal and technical processes for schools, this highly predictable and effective process eased the adoption, which in turn made the program highly scalable. This addressed the difficulty in navigating multiple complex policies that are not yet fully supportive of social innovations.
4. Designed to include co-creation – the cooperative trust schools embraced cooperation, drawing on collaborative approaches to design curriculum and pedagogy that were improved continuously.

From this case study, we could see that even when there has not been strong policy support for the innovation in the early days, the innovation grew organically and became more extensive than expected because the early adopters were receptive and ready to change. There were also clear benefits of collaboration with other partners in the cooperative movement. In one case, a school partnered with a retail business to improve their procurement process for catering and cleaning, offering a business perspective that schools usually do not have.

In summary, businesses can consider how they can satisfy the following characteristics as they design and evaluate social innovation projects:

(a) Products, services, and solutions that change mindsets and beliefs.
(b) Beneficiaries of the products, services, and solutions are active participants in the innovation's co-creation and evolution by design.
(c) Strong value alignment.
(d) Ripe timing that encourages the organic growth and uptake of the innovation.
(e) Structured support to navigate complex processes and policies, enhancing scalability.

4 An Agile Leadership Framework for Businesses Venturing into Social Innovation

To reshape the two fields of innovation, the author taps into her existing framework and model to create a new evaluation and planning framework for businesses venturing into social innovation. The original framework, titled Five Inner Voices of Leadership Agility (Yeo, 2020a, b), is useful for leaders who want to lead with agility in the future of work, in future workplaces, and in leading the future workforce. It covers five elements that are important to future consumers and employees. The other part of the social innovation framework comes from her coaching model, the Re4 Coaching Model (Yeo, 2020a, b), which drives implementation with a clear, unbiased lens so that the business acumen and economic savviness are retained while imagining the best way forward with future products, solutions, and services. Putting these two together, the author presents an enhanced framework with agile leadership in mind to help businesses evaluate and conceptualize their innovations and then launch, sustain, and scale them for more significant social impact.

4.1 How to Use the Agile Leadership Framework for Social Innovation

The nine-part framework combines the best practices of both social and business innovations, offering valuable viewpoints and self-monitoring questions that will support business leaders at both conceptualization and implementation phases.

Along with each part of the framework are sets of self-evaluation questions for leaders to consider so that the strategies are focused and all-rounded.

Split into two halves, the four sectors on the right offer longer-term strategic considerations at the conceptualization phase, where leaders can evaluate the feasibility and potential profitability of an innovation project (Fig. 1).

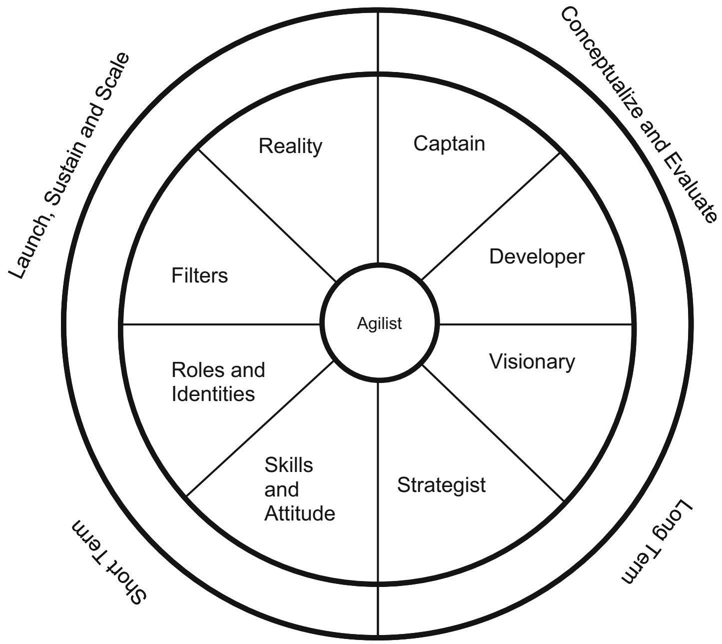

Fig. 1 An agile leadership framework for businesses venturing into social innovation (Source: Author)

4.1.1 Captain: Seeker of Intrinsic Connections

The captain leads and influences with self-awareness. Recognizing emotions as the necessary ingredient of genuine connection, this inner voice of leadership agility seeks emotional connections driven by intrinsic values.

Self-evaluation questions for leaders:

1. What are the values that would resonate with the participants of this innovation?
2. Why should they care?

4.1.2 Developer: Create Agile Structures for Organic Learning

The developer meets needs for autonomy, belonging, and mastery. From the perspective of social and business innovations, the developer involves all players and levers when necessary so that each may contribute with ideas and ambition, learning and co-creating in a shared space.

Self-evaluation questions for leaders:

1. How to maintain alignment with the participants?
2. What structures are needed to sustain learning as an ecosystem?
3. How can participants shift their mindset, learn through experience, and alter their behaviors permanently as a result?

4.1.3 Visionary: Foster Win-Win Worthy Goals

The visionary rallies people around a compelling vision and offers them a worthy goal to pursue. This inner voice of leadership agility considers the benefit to each player so that win-win partnerships are created as a result. High commitment is a characteristic of this voice. In the social innovation process where the end product or result might not be apparent initially, getting full buy-in built on win-win and equal power is instrumental.

Self-evaluation questions for leaders:

1. What is the core objective?
2. Who are the co-creators (players) of this innovation?
3. What are the objectives for each respective player?
4. Who are the secondary levers?

4.1.4 Strategist: Break Limitations and Enhance Impact

The strategist frames problems and elevates discussions to find solutions with unconventional lenses. Limitations and constraints are only seen as data points and information. The strategist helps leaders be agile in decision-making and seeking solutions. By challenging the norms and striving to achieve more with less, the strategist navigates volatile, disruptive environments and business systems with scientific and inventive thinking.

Self-evaluation questions for leaders:

1. How to achieve a win-win instead of settling for trade-offs?
2. If the timing is not ripe, what conditions will make it so?
3. How to evaluate and measure the effectiveness of the solutions?
4. What are the tangible and meaningful measurements that will secure more funding and support from players and levers?

Once the feasibility and profitability of the innovation seem quite certain in the long term, bring the view to the short term. The four sectors on the left are helpful at the implementation phase, examining the landscape and readiness for strategies and formulating steps in the shorter term.

4.1.5 Reality: Scan Current Landscape

A reality check here will expose current gaps and less-than-ideal realities and picture the next possible milestone.

Self-evaluation questions for leaders:

1. What is the current reality?
2. What are the opportunities and threats?
3. What is the next reasonable milestone?

4.1.6 Filters: Uncover and Address Prejudices and Bias

Examine current filters and assumptions and imagine a way forward to change them.

Self-evaluation questions for leaders:

1. What is the current mindset, bias, prejudices, or assumptions of the players in this innovation?
2. How can we lift or change those filters and replace them with relevant lenses?

4.1.7 Roles and Identities: Determine Players in the Ecosystem

Scope the implementation, and consider the players and levers in the ecosystem will help businesses focus their efforts in the right places.

Self-evaluation questions for leaders:

1. What is the current role of each player?
2. What is the role of the organization?
3. What are the needles the organization can move?

4.1.8 Skills and Attitudes: Support Learning with Structures

Navigating the complex policies and regulations could be a stumbling block. Consider the participants' needs for support and help them acquire the skills and attitudes. This will increase advocacy and get them ready for the next stage of social change and impact.

Self-evaluation questions for leaders:

1. What are the participants' current needs for skills and attitudes?
2. What repeatable processes can be put in place so acquiring skills and attitudes can be commoditized?

At the center of the framework is the voice of the agilist. This is the core of any project, always keeping an eye out for areas for improvement, challenging assumptions, and ensuring that the approach still works. The agilist is useful at all stages, both long- and short-term considerations.

4.1.9 Agilist: Regulator of Strategies and Approach

This powerful inner voice of leadership voice regulates the strategies and analysis of the issue on hand. The agilist is vigilant in verifying that the intended direction is relevant and beneficial. It also ensures that strategies still lead to the intended goal and makes adjustments if necessary and promptly.

Self-evaluation questions for leaders:

1. How do we know that strategies are working?
2. What are the early signs of threat?

5 Conclusions

Given the potential benefits to both businesses and social sectors, the intersection between business and social innovations is one not to be missed. Exploring the intersections, albeit complex and uncertain, can be navigated with more certainty if businesses ask themselves the right questions. The agile leadership framework for businesses venturing into social innovation presents options and guidelines for businesses to discern and identify the best opportunities. Business endeavors—strategies and processes—ultimately need to be optimized to increase social and economic value, and with the framework illustrated above, it can become possible.

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Chuen Chuen Yeo, A multi-award-winning executive coach, elevates the quality of leadership in every organization by developing agility. Named "Best Agile Leadership Development Coach – Singapore" in both 2020 and 2021 by Corporate Vision Magazine, Chuen Chuen's focus on agile leadership has made her a highly sought-after strategic partner in the business world. She is also one of the few Singaporeans accepted by Forbes Coaches Council.

With over 1300 h of coaching experience, Chuen Chuen has coached leaders from nearly 40 countries. Her clients are predominantly senior leaders from Fortune 500 companies and the Singapore Public Service. The strategic value she brings to her clients is proven with her long-term relationship with returning clients, referrals, and highly satisfied clients.

As one of the executives said about their work together, "Chuen Chuen's program is the only one leaders need to do." Chuen Chuen has developed a proprietary Re4 Coaching Model, documented in her book "*8 Paradoxes of Leadership Agility*" as well as a five-part framework to develop agile leadership.

Achieving Better Decision-Making and Growth by Transforming Mindsets and Organizational Cultures: Changing from Blame Cultures to Systematic Error Management in Aviation and Beyond

Peter Westphal

1 Introduction

By the 1970s, the airline industry was ready to take off. However, as planes became technically more reliable and sophisticated, the human element was exposed as the most vulnerable part of the system. Human error accounted for about 80% of aviation accidents (Hagen, 2017). In other words, trained, professional pilots had caused fully functioning, technically sophisticated aircraft to crash, in ways that should never have happened. Apparently, conventional training and management oversight were not enough to improve decision-making and safety of operations on the flight deck. The overall accident rate as well as the percentage attributed to human error remained unacceptably high, threatening the growth of the aviation industry (Helmreich & Foushee, 2019). How could the industry deal with the continuing mistakes and disasters that occurred in the operation or maintenance of aircraft?

When a plane crashed, up to the 1980s, the cause was often attributed to pilot error. That was convenient, but ultimately unhelpful. Concealing what happened, denying responsibility, or blaming those who made the mistakes were the usual responses of those times (Strauch, 2017; Reason, 1997). Blaming the people closest to a mistake has a long history of unproductive side effects and has often prevented improvements at deeper levels of the organizations (Reason, 1997; Fengler, 2020). It is not surprising then that the same problems usually surface again and again.

In the aviation industry, this mindset has changed significantly since the 1980s, resulting in an enormous increase in flight safety and industry growth (Hagen, 2017; ASN, 2021). Civil aviation and other high-reliability industries (HRI) have now transformed their leadership and organizational cultures, resulting in a steady and continuing reduction in error rates.

P. Westphal (✉)
Korntal-Münchingen, Germany
e-mail: peter@westphal-mail.net

A. Ruthemeier et al. (eds.), *The Global Impact of Social Innovation*, Management for Professionals, https://doi.org/10.1007/978-3-031-03849-5_9

Similar shifts in leadership culture, a social innovation in how leadership teams work together, have not occurred in many other industries. This chapter shows how a shift in mindset, away from blaming operators or decision-makers at the front line toward systemic error management (Reason, 1997), can lead to better decision-making and sustainable growth. The chapter describes how the concept of crew resource management (CRM) has changed the leadership and decision-making culture and the profound results these changes have produced (Dismukes et al., 2007; Tullo, 2019). The philosophy and key concepts of CRM are explained, as well as their effect on team performance and quality of decision-making. It is hoped that more organizations will reap the fruits of decades of intense and costly research in sectors where failure is not an option. Even though the aviation context is unique, CRM can be applied to leadership in any other organization, because it is based on well-researched, universal principles of human functioning, performance, and limitations (Fengler, 2020; Marshall, 2009).

2 Mistakes on the Flight Deck

Optimism in the bright future of aviation was dented, when the first inconceivable accidents appeared, in which the technical functioning of the plane was no longer the problem. How could this happen? A few, brief case summaries serve as examples of the wider phenomenon. The accident accounts in this chapter are based on the respective official investigation reports.

2.1 Eastern Airlines 401

On 29 December 1972, Eastern Airlines 401, a new, modern Lockheed TriStar with 176 people on board, approached Miami airport. While lowering the landing gear, the indicator light on the control panel failed to illuminate. The entire crew of three became so engaged in examining the indicator light that they did not notice that the autopilot had disengaged. The plane slowly descended and crashed into the Florida Everglades. The investigation attributed the cause to a loss of situational awareness – in the end, no one was flying the plane. It was further discovered that the indicator light bulb had simply burnt out.

2.2 Japan Airlines 8054

JAL8054, a cargo flight out of Anchorage, Alaska, on 13 January 1977, was piloted by a heavily drunk and disoriented captain. With a blood alcohol level of at least 2.8–3.1 pro mille, the captain got lost on the taxiway while trying to find the runway and radioed the wrong flight number before takeoff. Inconceivably, none of the other two, junior, pilots intervened. On takeoff, the captain pulled up the nose too much and stalled the plane, which then crashed, killing everyone on board.

2.3 Tenerife 1977

No other aviation accident has raised questions about the prevailing paradigm and shaped new thinking more than the 1977 disaster in Tenerife. Many see it as the turning point that gave birth to CRM (Hagen, 2017). On 27 March 1977, two B747s collided on the runway of Los Rodeos airport in dense fog, killing 583 people. It is, until today, the deadliest aviation accident. Contributing to the accident were time pressure and ambiguous communication between crews and air traffic control. The main factor in the disaster, though, is widely attributed to KLM Captain Jacob van Zanten's decision to take off without clearance from air traffic control. Van Zanten, however, was no ordinary captain. He was the head of pilot training at KLM, in charge of training and checking other pilots, including just recently one co-pilot on this flight (Hagen, 2017). His crew noticed, but did not challenge, his decision to take off, while clearly realizing the possibility that another B747 was still on the runway (Weick, 1990). Individual behavior and unsuccessful crew interaction were again critical factors in a tragic chain of events.

3 History of CRM

The fact that leadership decision-making, even in high-stake situations and in spite of professional training and certification, would regularly go wrong prompted a search for answers that has been unparalleled in any other industry (Fengler, 2020). With the willingness to do whatever it took to prevent avoidable mistakes, the aviation industry, together with government regulators and the research community, created what to date may be the largest learning organization in the world. A whole, global industry, sometimes literally, left no stone unturned to get to the bottom of why something had gone wrong. The findings of this continuous learning process were then applied to the operation of thousands of flight crews. Improvements were introduced, even if this included significant changes to the status quo (Helmreich & Foushee, 2019).

In June 1979, NASA, together with the FAA, NTSB (National Transportation Safety Board), US Air Force, and several major airlines, convened a workshop with the title Resource Management on the Flight Deck (Helmreich et al., 1999). This workshop focused on the systematic analysis of accidents and simulator studies. The results of this workshop showed that insufficient leadership and teamwork contributed most to the development of accident chains, while insufficient technical knowledge or flying ability had not been a cause in any of the accidents (Helmreich & Foushee, 2019).

From these results, a new training concept was developed, initially called cockpit resource management. Since the mid-1980s, the name crew resource management was established. By the time NASA convened a second workshop in 1986, most international airlines had instituted their own CRM programs, even though this had not been a legal requirement, yet. The International Civil Aviation Organization

(ICAO) mandated CRM training and yearly proficiency assessments for all airline crews globally in 1997.

The leadership model on the flight deck was further called into question, when an NTSB analysis of accident data from 1978 to 1990 showed that in 80% of the accidents, the captain had been flying the plane, rather than the more junior co-pilot (Hagen, 2017). Even more, many accident pilots, such as Jacob van Zanten in the Tenerife disaster, had been exceptionally experienced captains. Further increasing professional qualifications was therefore not seen as the answer to overcoming the vulnerability to errors (Helmreich & Foushee, 2019).

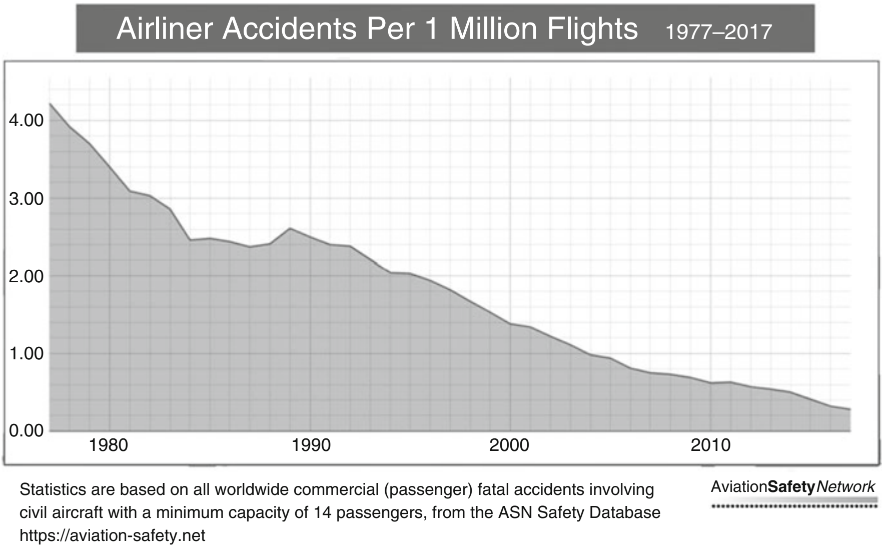
3.1 Development of CRM Concepts and Trainings

CRM initiatives were developed to improve teamwork, decision-making, and ultimately safety in aviation. For this purpose, the aviation industry turned, among other areas, to human factors research. In order to create better and safer leadership teams, human capabilities as well as human limitations had to be better understood.

The CRM concept and training methodology have further developed, as additional research findings have emerged. The first-generation CRM focused on the individual crew member, with individual psychological and human factor elements. The second generation started the team-based approach. Third- and fourth-generation CRM integrated and extended the concept to the wider aviation system, including air traffic control, maintenance, and the organizational culture of the airline. Since 1997, the fifth-generation CRM, based on the accident causation model of James Reason (Reason, 1997), adopted the concept of error management (Helmreich et al., 1999).

Error management (Reason, 1997) assumes that it is impossible to fully eliminate errors. This is especially true in complex, highly interconnected systems. If we accept errors as part of the human condition and an unpredictable environment, we need to learn to manage errors.

Nowhere else have leadership and work interactions been researched so elaborately and extensively as for the development of the CRM leadership concept (Fengler, 2020). Since its second generation, the goal of the CRM concept and training has been to shape or correct the attitude of cockpit crews toward their team members, in order to facilitate better communication and decision-making (Hagen, 2017). As shown below, this undertaking was no easy, superficial task. At the end, however, this social innovation was immensely successful. According to a study by Helmreich and Foushee (2019), at the beginning of the 1990s, 90% of pilots rated CRM training to be extremely helpful or very helpful.



From 1980 to 2017, airliner accidents per million flights have steadily declined, year on year, except for 3 years. While 1980 still saw 3.4 accidents per million flights, these have declined to 0.3 in 2017. This is a reduction in the accident rate of over 91%, based on data from the ASN (2021). Helmreich et al. (1999) suggest, however, that the best data to measure the outcomes of the CRM concept and trainings come from real simulator crew audits. Behavior observations and attitude assessments of regular full mission simulations, called line operational evaluation (LOE), have demonstrated that CRM initiatives have produced the desired changes in attitudes and behaviors.

4 What Needed to Happen to Achieve These Results?

The social innovation that was required in the cockpit could be described at different levels: thinking, attitudes, behaviors, and organizational culture. Because the research on causes of accidents was focused on making sense of what went wrong and the subsequent CRM interventions were based on adult learning principles, the perspective here is that changes in thinking and understanding led to a change in attitudes and behavior. Over time, the working culture, what Schein (2006) refers to as professional beliefs and values, was transformed. The starting point for improving flight crew performance was therefore a change in mindset toward working together as a team, toward what Kern (2012) calls redefined airmanship.

4.1 Original Leadership Culture

To understand the dynamics in the cockpit at that time, we need to take a look at the original working relationships among crew members. The leadership culture in cockpits at that time had developed from the beginning of the aviation industry (Schein, 2006). Flying used to be a single-person endeavor (Helmreich & Foushee, 2019). The image of a pilot was further shaped by pictures and stories of brave, fearless WWII heroes. When co-pilots were added to larger, more complex planes, captains viewed them as inconveniences and restrictions. Captains knew how to fly by themselves. In the beginning, other cockpit crew members were merely tolerated as a necessary evil (Hagen, 2017). Even though captain, co-pilot, and possibly a flight engineer had to interact frequently, the leadership culture followed the individualistic model of the early days of aviation. The captain was the towering figure on the flight deck and pilot education was focused on individual, technical competencies.

This mindset had to change. The situation required an honest search for underlying causes; asking the right, touch questions; and the willingness to act on the results. A social innovation was required that was thorough and far reaching. As a result, the introduced changes went deep enough to, over time, change the professional identity of captains and pilots from that of an individualistic hero to one who leads an interdependent team and follows professional procedures (Fengler, 2020).

4.2 New Mindset

Before looking at the main elements and practices of crew resource management, it is important to understand the change in mindset and leadership philosophy that underpins this approach. It is a fundamental shift in thinking, based on human factors research and empirical results, that has produced the training concept and content of CRM. This shift in thinking and the consequent application of its principles are a true example of social innovation in leadership. This section shows how findings of human factor studies and accident investigations questioned the prevailing mindset and how a new mindset led to a new leadership and a teamwork culture with different behaviors. The following aspects, like all elements of CRM, are interconnected and influence each other.

4.3 Recognize Human Fallibility

To err is human. This statement, attributed to Cicero in 43 BC, expresses a long-known truth. Studying accident data revealed that vulnerability to errors was independent of the length of flying experience and rank (Hagen, 2017). On the contrary, the analyses of accident reports revealed a surprising phenomenon: 80% of plane crashes happened while the captain was the pilot flying, rather than the co-pilot. Still further, some of the most horrific accidents involved some of the most senior and experienced captains in the airline (e.g., Weick, 1990).

The findings also showed that errors did not occur randomly but in clusters of similar processes or situations. Human imperfection in decision-making seemed to take place in predictable ways (Bazerman, 2006; Reason, 1990). This allowed certain processes and situations to be recognized as being particularly error-prone. Reason (1990) classified different cognitive and communication error types, enabling the development of aids and procedures, such as checklists or cross-checks, to counter some of these error tendencies. Most importantly though was the recognition that human limitations and fallibility are a basic fact of the human element of leadership and remain present even in the most senior, experienced, and respected leader.

These insights, as well as accident reports that questioned the traditional image of senior pilots as invincible heroes, helped to change the prevailing mindset from blaming individuals for mistakes to understanding errors as a normal part of the human and technical system. Building on this recognition, Reason (1997) and Helmreich et al. (1999) developed layer defenses that help individuals and the whole system to avoid mistakes, recognize mistakes, and mitigate consequences of mistakes before damage has occurred.

4.3.1 Vigilance: The Result of Accepting Vulnerability to Errors

One result of accepting the reality of human vulnerability to errors is vigilance – the need to monitor oneself, one's team members, and the wider system. Dismukes et al. (2007) see monitoring as an essential defense against a wide range of errors. Cockpit crews used to be divided into pilot flying (PF) and pilot not flying (PNF). Today, the pilot not flying has been renamed pilot monitoring (PM), to signal the important role of vigilance, i.e., checking for mistakes that inadvertently will happen. This change in title also signals the joint responsibility of all team members for good decision-making. Monitoring skills and communication exercises to alert team members of doubts or mistakes are a regular part of CRM trainings today.

Recognizing the general human vulnerability to error had to affect the mindset and philosophy of leadership in the cockpit (Haynes, 1991). A leader who required vigilance by team members to stay on track could no longer be the independent, invincible captain who could disregard inputs from others. Today, the captain is still the captain. The strength of the CRM concept is that it can work in hierarchical structures and does not require leaders to abdicate their roles, positions, or responsibilities. The culture of teamwork, however, has changed. Today, the captain is supposed to communicate the possibility of mistakes and encourage openness to speak up when mistakes are being noticed, regardless of rank, in each crew briefing, before each flight (Ginnett, 2019). Recognizing human fallibility was fundamental to a new leadership culture on the flight deck.

4.4 A Clear Focus on Learning, Not Punishment, with a System-Wide Search for Causes

In order to improve decision-making, an intense search for the causes of poor decisions became part of normal operations. To gain insights, the industry opened itself up to data gathering and research. The cockpit opened up to scrutiny. Black boxes recording conversations and technical inputs had already been introduced in the 1960s, but all involved had to become open to publishing reports and talking openly about mistakes, rather than hiding them. Accident analyses no longer stopped at the conclusion of pilot error. Why a professional pilot committed an error became the starting point of the deeper investigation (Strauch, 2017).

NASA and the NTSB turned again to human factors research, as well as to psychology and organizational behavior. These scientific disciplines are not new for research on decision-making, however the depth and intensity of research were unique. Leading researchers studied crews in flight simulators, observed actual flights, and some acquired a pilot license themselves (Hagen, 2017). Investigating human error was, however, not restricted to the flight deck but soon involved the wider system, including company policies, maintenance, working conditions, and government regulations.

It became apparent that the search for legal responsibility, for someone to blame, was counterproductive to learning about the aviation system and preventing similar accidents in the future. For this reason, NTSB accident investigations focused on learning for the sake of recommendations for improvements. The length and depth, as well as the financial costs, of air crash investigations speak of the determination to discover the root causes and mechanisms of mistakes.

4.4.1 The Wider System

Reason's (1997) research on error chains drew attention to the influences of the wider system on frontline personnel who committed mistakes. Reason showed that decision-makers on the front line were very much influenced by latent conditions that may have been residing in the organization for many years. His research drew attention to systemic influences or causes, rather than mere individual failure. The systems view proposed that, if an individual could be replaced with another individual, who was then just as likely to make the same mistake, the error should be seen as systemic. Simulator studies showed that, in similar situations, 85% of pilots made the same mistakes (Dismukes et al., 2007). Similarly, experimental studies have shown predictable patterns in which our human capacities become error-prone (Bazerman, 2006). Accidents, therefore, could no longer be seen as individual failures but questions of system failures needed to be asked. Fixing individual blame, then, fell short of the real situation.

Finding the predictable mistakes people make and the limitations of human decision-making helped to create better and safer human systems. Checks and procedures have been incorporated into the operations at precisely the points at which mistakes are likely to happen. Besides the use of checklists, these include cross-checks, i.e., asking another person to verify correctness, and short breaks, e.g., 10 for 10, to disrupt focusing errors. What have we missed? Or are we really sure? Checks are used to counter groupthink and send a reminder that failure is always a possibility (Rall, 2016).

4.4.2 Anonymous Incident Reporting Systems

To increase learning about error-prone situations and vulnerabilities, NASA, the NTSB, and many large airlines themselves have introduced anonymous incident reporting systems. These are evident expressions that learning and improving the aviation system are clearly prioritized over blaming or punishing individuals. The willingness to report mistakes and near misses, of oneself or team members, in a factual, nonpunitive way, is a demonstration of the level of psychological safety that has been created (Fengler, 2020; Helmreich & Foushee, 2019).

NASA developed the “confidential, voluntary, nonpunitive” Aviation Safety Reporting System, ASRS (Aviation Safety Reporting System, 2021a). Other countries have developed their own, e.g., the UK’s “Confidential Human Factors Incidence Reporting Program” (CHIRP) in 1982. NASA also publishes a monthly newsletter, CALLBACK, to share reports of mistakes and near misses. According to Hagen (2017), one purpose of these reports is to encourage co-pilots to speak up. Nonpunitive incidence reporting systems have not only provided regular and current feedback on errors, but they also helped to facilitate the profound culture change in dealing with mistakes. Each month, thousands of reports are entered into ASRS, e.g., 8136 reports for July 2021 (Aviation Safety Reporting System, 2021b). According to Hagen (2017), the aviation culture has changed, so that reporting mistakes is seen simply as “professional behavior” (p. 159).

4.5 Right Communication

Good communication is essential for good teamwork (Hackman, 2002; DeChurch & Mesmer-Magnus, 2010). Communication failures were identified as frequent causes of disasters (Kanki, 2019). These ranged from simple miscommunication, because of differing interpretations of the words that were used, e.g., the Tenerife disaster, 1977, to situations in which information about unfolding problems were willingly withheld.

Precise, closed-loop communication is essential to good team coordination. Closed-loop communication sees the responsibility of communicating the right information with the sender but includes a feedback loop by the receiver, to verify that the message was correctly understood. Shifting the responsibility to communicate well to the sender implicitly emphasized the responsibility of the captain for the overall communication of the team. It was no longer acceptable to blame others for not understanding properly. The second type of communication failure, in which information was purposely withheld, e.g., out of embarrassment or fear, posed a serious problem for effective decision-making. Open communication in the cockpit and a nonpunitive reporting culture were therefore seen as essential for good and safe teamwork on the flight deck.

4.5.1 Hierarchy Yes, but the Captain Is Not Perfect

The hierarchy in each cockpit was clearly established and reinforced by uniforms, fixed roles, and expectations of deference to the captain by the junior co-pilots. The effect of hierarchy on the willingness of crew members to speak up and voice their concerns, however, prompted a review of the leadership culture and expected behaviors (Kanki, 2019). It was often difficult for junior pilots or other crew members to share concerns or point out that the captain has made a mistake. Dismukes et al. (2007) cite inadequate challenging as a prevalent factor in airline accidents.

The term cockpit gradient describes the perceived status difference, i.e., hierarchy, on the flight deck. A hierarchy that is too high or too low is seen as counterproductive to good leadership and communication in cockpit crews (Hagen, 2017). Establishing the right cockpit gradient and working relationships is the responsibility of the captain and part of his or her first leadership behaviors at the first team meeting before each flight. Changing the leadership style and expectations of captains, while still clearly maintaining hierarchical leadership responsibilities, led to well formulated preflight briefings that encourage crew members to speak up, regardless of rank. The goal was that all relevant information would be shared and brought to the attention of the decision-makers.

4.5.2 Respectful Assertiveness

A central element of the CRM communication training is therefore to encourage and support all team members to share relevant information early and confidently (Kanki, 2019; Hagen, 2017). This may include a junior first officer correcting the captain or a senior captain admitting a mistake or lack of knowledge. As a result, all crew members are trained in respectful assertiveness, in case they become uncomfortable with the development of the flight. The shift in mindset, away from demanding unquestioned compliance to soliciting and welcoming corrective questions and concerns, was crucial for better decision-making.

The improvement in decision-making processes, while maintaining hierarchical work structures, is one of the strengths and achievements of CRM. It makes it possible to apply this approach to teamwork in hierarchical organizations around the world. This change, however, necessitated the departure from a “the captain is always right” attitude and to clearly acknowledge the human limitations that apply equally to all pilots. “We all make mistakes” is a fundamental assumption underlying CRM and is encouraged to be shared in each team briefing for both cockpit and cabin crew before each flight. As a blueprint for speaking up, Dekker (2011) developed a respectful, yet assertive, communication sequence, in which pilots and medical staff can be trained in.

The establishment of a respectful, but more assertive, communication culture, however, depends also on the regular demonstration of senior captain’s willingness to listen to and to accept concerns from crew member. Continual reinforcement was therefore included in each captain’s preflight briefing. This shift in mindset and practice was, however, not easy to achieve and could be lost very quickly, if leaders walked back on their commitment to put learning and safety first (Hagen, 2017).

4.6 Leadership

Choosing a course of action, addressing a common problem, or selecting a new destination requires leadership. Like communication, leadership is an aspect that can be found in all elements of CRM. The change in mindset that occurred because of CRM initiatives had its most profound effect in the way leadership in the cockpit is viewed and carried out today—the change in leadership culture.

Psychological safety and openness to input are prerequisites for good CRM (Fengler, 2020). They are a leadership responsibility. Leadership establishes the working relationships, including norms and forms of communication. Leadership shapes the team and organizational culture (Schein, 2006). This is especially the case in hierarchical leadership contexts, such as the flight and cabin crews onboard airplanes. The study by Ginnett (2019) showed that captains establish the norms of working together, including expectations of communication and the cockpit gradient (i.e., amount of hierarchy) in the first preflight briefing before the flight.

4.6.1 Decision-Making

The captain is ultimately responsible for the decision-making on the flight deck. CRM is training the entire flight crew in a structured decision-making framework, named FOR-DEC, that solicits all available information or ideas and aims to prevent the typical decision-making errors that human factor studies have identified (Tullo, 2019). CRM is thereby directly training for better decision-making. FOR-DEC stands for facts, options, risks and benefits, decision, execution, and check and control. The FOR-DEC process incorporates the whole team. The captain acts as a moderator of the process but makes the final decision. To solicit all information and honest opinions, the captain is expected to withhold his or her own opinion, until all relevant input has been gathered (Hagen, 2017).

Nowhere else have leadership and work interactions been researched so elaborately and extensively as for the development of the CRM leadership concept (Fengler, 2020). According to Fengler, the decision-making method FOR-DEC is the central element of CRM. The structured FOR-DEC decision-making process has had a significant impact on changing the leadership approach of captains from autocratic leadership to one of team leadership. Premature decisions based on one individual's gut feelings have been reduced, and the formerly independent captain has become the leader of an "intelligent team" (Fengler, 2020).

4.6.2 Workload and Stress Management

One of the primary responsibilities of the captain is to allocate and prioritize the workload, so that the crew can work well. Recognizing the human limitations in multitasking, frequent attention switching, and stressful environments led to an emphasis on workload and stress management. Stress and distractions due to multitasking can seriously impair decision-making (Loukopoulos et al., 2009). Examples of entire flight crews focusing on fixing a light bulb, while not noticing that their plane is slowly descending into a swamp, display dynamics that are not unique to aviation. A further example of the effect of poor workload and stress management is AF447, where, in 2009, the co-pilot apparently became fixated on raising the nose of the A330, while ignoring almost continuous stall warnings, until the fully functioning plane fell into the Atlantic.

These dynamics can occur in all organizations and the old pilot rule: *Always fly the aircraft!* is equally applicable to leadership in other contexts. Good CRM allocates tasks to other team members, so that each person can, as much as possible, focus on their task, while someone is designated to maintain the big picture and someone continues to fly the plane. CRM techniques, e.g., short disruptions like 10 for 10 (Rall et al., 2020), aim to prevent such fixation errors.

4.7 Measure and Reinforce What Really Counts: From One-Time Certification to Regular Demonstration of Skills

The evidence-based and outcome-focused approach to reducing human error in aviation is also demonstrated by the way the proficiency of pilots is now assessed and reassessed over time. The mindset regarding required qualification and proficiency has changed from one-time certification at the beginning of one's career to regular demonstration and assessment of actual abilities and behaviors. The new mindset takes the human weakness of decaying proficiency into account. When not regularly practiced, skills begin to deteriorate over time. This view prompted a reevaluation of what it meant to be qualified. Certification at the beginning of a pilot's career was no longer sufficient (DGIIN, 2017). Regular refresher trainings focus not only on the technical skills of flying the aircraft but also the so-called NOTECHs (nontechnical skills) in four categories, cooperation, leadership, situation awareness, and decision-making, which were added to the proficiency assessments (Flin, 2019). Today, pilots need to demonstrate proficiency in CRM behaviors in simulator tests, in which they are evaluated with specified behavior markers (Civil Aviation Authority, 2014). Most major airlines retrain and assess their pilots every 6 months. Reassessment once a year is mandated, globally, by the ICAO.

Measuring and giving feedback on what is really important for good performance has, over time, reinforced a new professional identity of pilots and reexamined airmanship (Kern, 2012). The shift from individual-based technical skills to team-based communication, coordination, and decision-making skills is essential for the large, complex, tightly coupled systems in which we operate today (Weick, 1990).

4.8 CRM Training Methods

CRM training has developed and improved over time. According to Farago et al. (2019), seminars, workshops, and theoretical proposals proved to be less effective. These methods were often rejected by pilots, as being too far removed from their normal life and the working environment. Today, adult learning principles, experiential learning, and a coaching style are used to develop CRM skills. CRM behaviors are assessed in regular simulator tests with realistic scenarios. The cockpit crew is debriefed by an instructor and receives feedback on their performance, using a coaching-style approach (Farago et al., 2019). These instructors are trained to assess pilot performance with clear behavior markers that specify the quality of CRM behaviors (Civil Aviation Authority, 2014). Chesley Sullenberger of the "Miracle on the Hudson," US Airways 1549, expressed after their water landing in 2009: "We were simply doing what we were *trained* to do" (cited in DGIIN, 2017; emphasis by the author). Training, i.e., practice, is a critical component to develop proficiency.

These changes, however, took time. Changing the professional self-image of senior captains was a huge undertaking and was resisted at first. According to Hagen (2017), the reports and testimonies of outstanding flight crew performances, such as UA232, Al Haynes, had a significant impact on the acceptance of CRM philosophy and the new way of working together.

Helmreich et al. (1999) caution, though, that CRM does not reach everyone and that there will be crew members who refuse to accept and adopt the attitudes and practices of CRM. Hagen (2017) and Kern (1995) cite the 1994 crash of Czar52, a B52 Bomber that crashed because of a daring, unauthorized move, at 250 ft. altitude, right in front of one crew member's family, as an example that organizational failures can allow pilots to get away with dangerous attitudes. It is also an example that having technical flying skills alone can be a recipe for disaster.

5 Transformed Teamwork Outcomes

The following are examples of the teamwork and decision-making that has developed through this change in mindset. CRM was cited in each case as a significant factor that enabled the extraordinary achievements of these crews.

5.1 UAL811

UAL811 took off from Honolulu, Hawaii, with 355 people on board. After 17 minutes in the air, a cargo door opened, resulting in a huge hole in the cabin wall, explosive decompression, and the loss of ten seats. Debris destroyed two engines on one side of the plane. Amazingly, Captain Cronin and his crew managed to fly the plane back to the airport. The investigation showed remarkable teamwork by the crew and leadership of the captain that led to the right decisions being made to manage the situation.

5.2 UAL232

Four months after the remarkable recovery of UAL811, on 19 July 1989, UAL232 was on the way from Denver to Chicago. Sixty-seven minutes into the flight, the center engine of the DC-10 exploded, severing the lines of all three hydraulic systems on the plane. Such a scenario had been deemed impossible; therefore there were no redundancies, and the plane lost all flight controls. The only way to manipulate the plane was by varying the thrust of the remaining two engines. This scenario was never anticipated in pilot training.

Captain Al Haynes had to relearn how to fly on the spot. With the help of another captain, who was a passenger on the flight, the crew managed to stabilize the plane, which continually lost altitude and could only make left turns. Yet, the crew managed to maneuver the plane with 296 people on board to the foot of the runway at Sioux City airport. Unfortunately, the right wing hit the runway and the plane broke apart on impact. Still, 184 people survived.

Until today, the achievement of the crew and the leadership of Al Haynes are regarded as one of the finest examples of crew performance in aviation history. Recounting the UAL232 accident, Captain Al Haynes (1991) stated that the crew had never trained for a loss of all flight controls, but “the preparation that paid off for the crew was something that United started in 1980 called Cockpit Resource Management, or Command Leadership Resource Training (CLR)” (p.8). He further said “if we had not used CLR, if we had not let everybody put their input in, it’s a cinch we wouldn’t have made it . . . CLR really paid off . . . [and] really prepared the crew for what happened” (p. 9). CLR was a name United Airlines had used initially for CRM.

5.3 QF32

Another example of brilliant and exceptional teamwork was the near disaster of QF32 on 4 November 2010. Four minutes after takeoff from Singapore, enroute to Sydney, one of the engines’ turbine disks disintegrated. Shrapnel from the disk sprayed the side and wing of the plane, causing a fire in one of the fuel tanks and extensive damage to the wing, fuel system, flight controls, engine controls, landing gear, and the braking system.

Captain Richard de Crespigny and his crew decided to circle the fully fueled, hardly controllable plane with 469 people on board for 2 h near Singapore, while the crew analyzed the situation and prepared to land the 50 ton overloaded A380 with manual brakes. The crew made a series of well-thought-through decisions, including waiting for several minutes before evacuating the plane on the runway, because of leaking fuel and overheated breaks. Despite the many, complex challenges, they returned safely, with no injuries. Captain de Crespigny personally debriefed passengers after the evacuation and was later commended for exemplary communication and leadership (Hagen, 2017).

6 CRM Implementation in Other Industries

Crew resource management was developed to reduce the rate of aviation accidents. Its original focus was on action-oriented teams (Hackman, 2002), working in dangerous environments, in which errors had large consequences. CRM was therefore adopted first by other, similar industries, such as fire emergency departments (Okray & Lubnau II, 2004). Nuclear power generation and chemical processing plants have widely adopted and adapted CRM methodology (Hayward et al., 2019). As more data on the success and efficiency of CRM became available, CRM concepts were also introduced in medical emergency facilities. Currently, CRM philosophy and methodology are expanding into the healthcare sector as a whole (Dekker, 2011; Rall et al., 2020).

CRM addresses human factors in teamwork and decision-making. These factors are universal. CRM is therefore equally useful for any organizational management context, and CRM training is beginning to be used by leaders regardless of industry (Fengler, 2020; Marshall, 2009). Because of its origin as cockpit resource management in an unforgiving environment with many lives at stake, CRM is based on extensive research on how individuals and teams actually work and on how a wider system that is designed to protect them from mistakes can break down. Since other types of organizations are also staffed with similar humans in leadership and decision-making roles, CRM, when introduced and managed correctly, promises to be effective in changing organizational cultures and improve decision-making outside of high-reliability industries as well. When organizations shift from assigning blame and punishing those on the front line to wholistic error management, the same social innovation can occur, as in aviation after the 1980s.

7 Conclusion: Social Innovation with a Global Track Record

Faced with the question, why well-trained, professional air crews could regularly crash fully functioning, sophisticated aircraft, the aviation industry and research community started to focus on the issue of human error. The research produced extensive insights into human factors affecting leadership and team behaviors, including thought processes, communication, coordination, and decision-making. These findings were used to develop CRM trainings, as well as leadership and teamwork concepts. The international nature of aviation required a concept that worked globally, across national cultures.

Since the introduction of CRM in 1980, air accident rates have fallen by over 90%. Today, CRM training and yearly reassessment are mandatory for flight crews globally.

The subsequent impact of CRM on the leadership culture and quality of teamwork in aviation and beyond shows how people can adjust and improve the way they work together and make decisions. By changing mindsets from assigning blame and shame to those closest to the committed mistake to a culture that values open communication about, and learning from, mistakes, organizations in other contexts can also reap the benefits of systemic error management and improve their leadership decision-making.

The social innovation that has transformed the way flight crews work together started with the willingness by all stakeholders to ask all the tough questions, openly conduct and report on investigations, and accept human vulnerabilities. The results were far-reaching changes in mindset, behaviors, and organizational culture that led to remarkable and sustained decline in human error. Many industries and organizations have yet to make use of these developments and unlock the performance potential of their own leadership crews.

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Peter Westphal is president of AWM gGmbH, a nonprofit educational institute in Germany, with a focus on interdisciplinary studies for people in cross-cultural and global contexts. Leadership and effective, mutually rewarding teamwork in organizations are his passion and focus. Peter Westphal spent nearly 30 years in Asia, in various leadership and consulting roles, before relocating to Europe with his international family. He has followed the development and practice of crew resource management (CRM), especially in aviation, for almost 20 years. CRM has inspired and influenced his research on the interacting effects of virtual communication and culture on teamwork in decision-making teams. Peter Westphal completed his MBA at Edinburgh Business School, UK, and holds a PhD in organizational leadership from Northcentral University, USA.

Value-Based Leadership as a Basis for Social Innovation in Family Businesses

Nicolai Müller and Constanze Drescher

Climate change, water scarcity, Covid-19, poverty, violation of human rights and ethnic conflicts—our world is facing serious global challenges. Social innovation and the associated corporate social responsibility of enterprises are increasingly seen as a possible way to help in solving these economic, social and environmental problems and, therefore, gaining importance in the public debate. Family businesses face the complex task of continuously developing their organisations for future generations and adapting business models to changing markets. At the same time, these business models should serve a social purpose and the common good alike, a task that holds great opportunities (Battilana et al., 2020). Global players like Google, Microsoft, Mars Inc. and IKEA show us how to achieve this, communicating their social goals and innovations both externally and internally and, therefore, shaping the future and rethinking business.

The topic of corporate social responsibility has also arrived in the world of finance. Worldwide, credit institutions are increasingly obliged to follow a social code of conduct. Therefore, numerous banks have committed themselves to the United Nation Environment Programme Finance Initiative and integrated sustainability-related financial services into their portfolios.

Various studies evaluate the role of banks. The Fair Finance Guide Germany, for instance, reviewed ethically and ecologically relevant self-disclosures. The resulting list of recommendations offers financial institutions the opportunity to make their voluntary commitment transparent, thus scoring points with possible investors (Fair Finance Guide Deutschland 2021). However, it is not quite that simple, and an opportunity can quickly turn into a disadvantage. Entering into business

N. Müller (✉)
Dr. Müller, Hufschmidt Steuerberatungsgesellschaft mbH, Straelen, Germany
e-mail: n-mueller@stb-straelen.de

C. Drescher
DU BIST WERTVOLL STIFTUNG, Straelen, Germany
e-mail: constanze.drescher@du-bist-wertvoll-stiftung.de

A. Ruthemeier et al. (eds.), *The Global Impact of Social Innovation*, Management for Professionals, https://doi.org/10.1007/978-3-031-03849-5_10

relationships with some institutions may be warned against by pointing out controversial investments on their part that violate human rights (Fair Finance Guide Deutschland 2021). This example shows how quickly credibility can be jeopardised by half-heartedness. Only those who live their communicated values will be successful. Even if the topic has already increasingly arrived in the field of banking, the entrepreneurial landscape shows a different picture. According to the latest survey by the Wertekommission,[1] only four out of ten managers are aware of the SDGs[2] (Fladerer et al., 2021).

Perception of social responsibility and the social innovations that go with it take place globally. In the following, however, we would like to focus on Germany. Here, family businesses make an important contribution to the overall economic success. As convinced family entrepreneurs, we focus on this target group with our recommendations.

In family businesses tradition and future-proof innovations come together in a special way. In this context, the topic of ambidexterity is gaining in importance.

According to Merriam-Webster, ambidexterity refers to the ability to use both hands with equal ease (Merriam Webster, 2021). Applied to the field of business, this means using one hand to constantly steer the company's fortunes, while using the other to always keep a finger on the pulse of society and innovatively build the future and, in addition, juggling the challenges of day-to-day business. Increasingly rapid social changes and disruptive innovations require family entrepreneurs to remain flexible (Gergs & Lakeit, 2020).

Especially in family businesses, it is not easy to break up conventional organisations that have grown over several generations and to consciously implement new methods and corporate structures to successfully establish innovative business areas. At the same time, tested processes must be optimised. This mammoth task is not possible without involving all employees in the change process.

One example that vividly illustrates the topic of ambidexterity derives from the tax consultancy market. Studies assume that a high percentage of services will become more disruptive. Those who want to survive should act. Tax consultancy thrives on dealing accurately with the accounting of receipts and the handling of tax issues. To provide high-quality work, standards and optimised processes are needed. However, to survive in the long run, business models have to be completely rethought. This is exactly what ambidexterity means, i.e. working to specification in the morning and discarding the entire business model at lunchtime, disrupting one's own livelihood without fear of making mistakes.

In addition to the a.m. challenges, the pandemic and flood disaster have taken a heavy toll on family entrepreneurs. More than ever before, it is necessary to act around the conflict of maintaining business operations, including measures to secure the business, and driving forward social innovations as well as new business models.

[1] Wertekommission – Initiative Werte Bewusste Führung e. V./Values Commission Initiative

[2] Abbreviation: Sustainable Development Goals

Successful leadership must be context-related, and managers in family businesses must adopt different roles. According to the concept developed by Kienbaum, to accompany their respective core and innovation business equally successfully, they must be able to slip into the roles of innovation leader, high-performance leader, pioneer and enabler (Bergstein et al., 2020). However, this does not work with a strictly hierarchical management. You should incorporate traditional values such as mutual trust, respect and the courage for an appreciative "error culture" into your leadership. Our appeal would read: Let go and get all employees on board. Give your team the freedom to become agile for the benefit of the company's goals.

Existing family businesses can only benefit from the innovations and ideally make use of them if all employees fully understand their value.

This chapter is intended to inspire owners of family businesses to take a realistic look at existing business processes, their own corporate management and culture to optimise organisational structures, identify potential for social innovations and, thus, set a precedence for the future. It shows how you can involve your employees in the process through value-oriented leadership and, in doing so, use them as a valuable source of innovation.

1 Values and Social Innovation: A Question of Attitude!

The maturation of socially innovative ideas often only depends on the right approach. Core values such as trust, respect, responsibility and courage are a prerequisite. In the following, we want to show that value-oriented thinking combined with the inner endeavour to sustainably improve overall social conditions is the engine that drives social innovation forward.

One of the best-known representatives of social business, Nobel Peace Prize laureate Muhammad Yunus, defines social business as financially and economically sustainable with the aim of overcoming one or more problems in the fields of education, health care and the environment, whereby the company's activities are beneficial to a broad group of people and are not reduced to profit maximisation. Any profits are reinvested (Yunus, 2010).

This approach cannot be implemented immediately, as the average family business model does not always allow for it.

It is difficult to combine required changes with existing structures and to detect what new structures are required. Social innovation is not an invention of the twenty-first century, and it is not all about disruption. If you respond to existing social challenges in your company with new recommendations for action, you are already making an important contribution. Start social business models and innovations at a low level, do something and do not waste too much thought on figuring out how exactly you must do something to act sustainably. In our opinion, social innovations in your family business are all concepts that improve the living environment of employees and customers, even if only in small steps.

To increase the social performance, owners of family businesses must therefore integrate their own values into the management process and exemplify them accordingly.

Let us give you some examples:

Example 1
Customer A has just complained, a machine in the factory has broken down, and a major order has been recently cancelled. If, in this situation, an employee comes up with the suggestion to use sustainable handkerchiefs, (at this time—as the family business is facing serious problems—an unfortunate suggestion for improvement) it is not advisable to reject her with the comment that one has more important things on one's mind. The probability that this employee will never come back with a new suggestion is high. Therefore, you should consider every idea as valuable innovation potential.

Example 2
One of your youngest trainees tells you that he disagrees with you and wants to take an alternative approach to certain business processes to act more sustainable. Try to suppress the impulse to denounce the lack of experience and defend your existing practices. In increasingly turbulent times, most social innovations fail due to limited personal capacity.

Don't always expect a concept that is perfectly thought through. Turn the inner drive of your employees into an innovation booster. It's the impulse that counts and fosters further development.

Listening to people attentively and with respect, while having to deal with many issues, is often difficult, but it is crucial and a breeding ground for further development. Take the time to learn how the other person thinks. Show respect and listen! Admittedly, in a noisy world, this is quite a challenge and should not be underestimated.

Space for innovation is created when employees feel valued and free to make suggestions and to criticise proven procedures without their loyalty being questioned.

The truth can be hard to take. Those who openly ask for new ideas, criticism or feedback must expect to receive it and should be able to deal with it without defending themselves.

In order to empower employees to be proactive, to share their ideas with the management and not just give desired answers, the management's permanent reflection (this applies to all generations in the family business) is vital. How do I come across as a boss? Is my office door open and, above all, am I open to suggestions?

In this context, trust is a fundamental value. It's not for nothing that an old saying goes "Try and trust will move mountains". Young colleagues are often surprised by themselves how, due to trust and encouragement, they rise and courageously handle complex tasks and overcome challenges that they would not have dared to tackle at first. An appreciative atmosphere accompanied by a leap of faith enables the development of social awareness. Employees who are encouraged in this way are invited to contribute their personal experiences without primarily pursuing economic goals. This creates the opportunity for new teams to be formed alongside existing hierarchies, to develop socially innovative ideas and to support each other in a non-competitive way. Based on shared values, working for a good cause strengthens cohesion.

The challenge for the owner of a family business is to create a basis of trust and give space for such developments.

2 Agile Organisations Require Trust and the Courage to Relinquisih Control

A lot of family entrepreneurs are afraid that intrinsically acting, courageous employees will weaken their authority. This only happens to those who do not value and respect their employees. The ego of a manager has no place in owner-managed companies (Müller & Jäger, 2015). Have the courage to temporarily relinquish control!

An Arab proverb says: "Eternal sunshine creates a desert". Encourage your employees to disagree with you, even if the truth may hurt. Conflicts that are dealt with respectfully are part of everyday business; they can be positive and open opportunities for change.

Strengthened employees make better decisions, give honest feedback and dare to address problems when they see them. As example 2, in which the trainee contradicts the boss, shows, feedback is not a one-way street. Give honest feedback but accept it yourself, regardless of the position. Follow new paths, even if this means changing perspectives in the innovation process and adopting unfamiliar creativity techniques, e.g. use the reversal method to turn familiar work processes upside down.

Of course, even in the development of social innovations, one is not immune to mistakes. Unexpected changes in general economic conditions that could not be foreseen, as well as classic errors in thinking and omissions, are among them. In order not to nip the innovation culture in the bud, it is essential how you deal with such mistakes. The word "mistake" alone arouses negative thoughts and causes fear. Avoid blaming others, and create an appreciative corporate culture in which everyone can admit their mistakes openly and without fear in order to learn from them and have the courage to follow new paths (Müller & Jäger, 2015).

If we recognise that failure is part of growth, we strengthen the development potential of everyone, even if there is a risk that entrepreneurial action and courage will not be rewarded per se by the outside world but punished in case of failure. For this reason, a policy of copying, hesitation and omission is becoming increasingly established, always according to the motto: "Only those who do nothing do nothing wrong". However, this mentality can have fatal consequences for social and economic development.

The danger of being devalued by public criticism particularly also applies to social engagement. "You'd rather concentrate on the core business, there is enough to be optimised!"—we're sure we've all heard that before. But that should not stop us from getting involved in social issues and making our contribution to society. Fortunately, Germany can come up with several social innovations: with their company Einhorn, Waldemar Zeiler and Philip Siefer produce sustainable condoms and hygiene products according to their fitting motto: "Don't fuck with nature". The cosmetics start-up Oyess makes lip care a benefit for the planet, and Viva con Agua is committed to clean drinking water and improved hygiene conditions worldwide. The outdoor outfitter Vaude puts together a multilayered sustainability package consisting of corporate responsibility, environmentally friendly products, environmental protection and fair working conditions. The list could be continued and shows that the desire for social responsibility is gaining in importance. In contrast to corporations, family businesses think in terms of generations, not quarters, and thus have time to focus on sustainability and innovation. Moreover, they often feel strongly connected to the local community, which goes hand in hand with a special social responsibility.

3 Walk the Talk: You Are Appreciated when You Do What You Say

Everyone knows the phrase "A fish rots from the head down", but many are not aware of its implications. Let's imagine the following scenario: as a boss you constantly encourage your employees to use resources responsibly but still take every available business appointment by plane, of course with the justification that your time is limited. Doing so, you may lose credibility faster than your plane takes off. After all, the pandemic has taught us that digital meetings can also be successful. Double standards bring down your company's value structure. The clearer you position yourself, the more you provide stability (Müller, 2020).

In his book *Start with Why: How Great Leaders Inspire Everyone to Take Action*, Simon Sinek encourages managers to rethink, not to ask how, but to clearly communicate the motivations of their own actions. "Only those who question existing structures and start with 'why' become free for innovative solutions" (Sinek, 2014). This is particularly true in the field of social innovation. Put the "why" at the centre of your communication; get your employees on board as social subcontractors who develop new ideas based on their own initiative.

Social change is difficult to scale, but only those who have done their homework in value-based leadership will achieve sustainable results. First and foremost, to get employees on board, being an entrepreneur, I must know what I really want and what drives me (Blount & Leinwand, 2020). What social issues do I take on, what are my core values, and what motivates me to pursue these very goals?

Is it about taking on social as well as generational responsibility or am I just hoping for positive side effects on my actual business?

4 Only Those Family Businesses Achieve Change that Clearly Communicate Their Values

Employees sense whether the commitment of the boss is credible. Thus, raising awareness of the company's own value system plays a key role that should not be underestimated. Economic success will only follow if changes are lived. But watch out! This path also contains surprising minefields. For example, how do I deal with suppliers and business partners who do not comply with the code of sustainable action and transparency? Sometimes serious conflicts of values can arise in your supply chain. So, what can I do if I notice that my business partner is not consistently committed to these goals and the problem cannot be resolved?

As a medium-sized entrepreneur in a family business, I must survive economically and cannot put too much pressure on my suppliers. The pandemic and the resulting supply bottlenecks as well as price increases have exacerbated this problem. If I act according to my previously defined values and terminate the business relationship, in the worst case, I risk the entire company, since parts for production are missing. Thus, in the end, everything comes to a standstill, and the company is no longer competitive. A possible insolvency would result in employees losing their jobs and no longer being able to provide for their families.

5 How Value-Based Leadership Can Raise Social Awareness

To increase the social performance of the family business, the owner must not only integrate his or her own values into the leadership process but also communicate them unambiguously. The clearer the mission statement, the greater the success.

Example A
You are a pilot set on a route from Berlin to Kabul and have the task of communicating that you must check in, refuel and get the aircraft ready for take-off within the shortest possible time after a long day at work.

Example B
You are a rescue pilot and inform your crew that you are flying a supporting rescue mission for which you only have a limited time window.

In which case do you think your team is motivated to work faster and develop time-saving ideas? In an emergency, we intuitively act compassionately, and it is the same with driving social innovations.

Well, our day-to-day business is not all about saving lives, so how do I integrate the *WHY* into our daily operations? Leadership needs orientation. Communicate your visions, values and mindset and get your employees on board. Enter into dialogue to work out solutions. Leaders who have the courage to go one step further and decide to give employees the benefit of the doubt, granting more responsibility in this process, create space for creative problem-solving and at the same time enable them to identify with the company. People should be respected and valued, see the meaning in their actions and allow them to actively make a difference.

In its Global Trends Report 2018, the management consultancy Mercer stated that employees particularly like to work for companies that offer them three things: a flexible work location, health promotion measures and meaningful work (Bravery, 2018). Where does this desire come from? Already in the 1940s, US psychologist Abraham Maslow developed the pyramid of needs, the base of which depicts basic needs such as food, drink and protection from the weather. The next levels are followed by safety and social needs such as friendship and love. At the second highest point of the pyramid are the individual needs: recognition and esteem. The top of the pyramid is marked by self-actualisation needs. These include the desire to give meaning to one's life, to do good and to make positive changes possible.

It's not all about the money: money can't buy satisfaction. Regarding companies, this means that not only financial appreciation but the possibility of doing good with one's own activity is gaining in importance. The potential is there; what matters is how the assets of the employees can unfold.

Your family business certainly offers various areas in which social innovations are conceivable in parallel, without having to turn the entire product or service range upside down.

As a holistic concept, this includes sustainability on an ecological and economic level as well as all areas such as health management, integration, communication, knowledge transfer or simply responsibility as a local employer. The spectrum is broad.

But how can a company develop in the direction of social business through value orientation?

Let's make it tangible with practical examples. Perhaps you are already socially innovative in some areas but would not explicitly say so? You change your travel regulations and thereby reduce the ecological footprint of your company fleet, introduce a veggie day in the canteen, offer recycling possibilities, forego company gifts in favour of a social cause, pay fair wages and consider gender diversity and the sharing of knowledge as normal? Great! You're already on the right track, setting a positive example; but go a bit further, become agile, and think creatively!

For example, make use of the principle of the multi-generation house by focusing on intergenerational cooperation and mixed-age support in your company. Doing so, you not only build bridges between different age groups and strengthen the integration of marginalised groups but at the same time create the prerequisite for a valuable transfer of knowledge. Or you promote the creation of such an external meeting place and in this way contribute to the development of voluntary engagement. The possibilities are manifold.

For us, creativity is the essential drive for overall social and economic development. That is why we are involved in the *DU BIST WERTVOLL*[3] Foundation. Through various projects in the fields of art, nutrition, music and personality, the creative abilities of children are strengthened to provide tomorrow's innovative minds with all tools to shape a better future.

6 Pursuing Social Innovation as an Opportunity for Employer Branding

No one can deny the prevailing shortage of skilled workers. The German Economic Institute estimates the resulting damage at 30 billion euros by 2030. Korn Ferry even assumes an indexed loss of income of 630 billion (Eckert, 2018).

Attracting qualified employees is difficult. As mentioned above, a social culture of innovation beyond the monetary aspects can improve the positive perception and attractiveness of a brand. Make sure your family business is perceived as a positive brand in the labour market! Unfortunately, there are still a lot of companies which do not provide own career sites. Create a positive employer brand by differentiating yourself from others, because that is what a brand is all about.

Make sure that many people think well of your employer brand and communicate this. Raise your company's profile at local schools, fulfil your social responsibility by offering positions for compulsory internships, and position yourself for the future.

As the Sinus Youth Study 2020 proves, you score particularly well with young people with sustainable measures in response to generational justice as well as a positive working environment (Calmbach et al., 2020).

Let's assume that you have already achieved this and want to follow in the footsteps of those big social entrepreneurs mentioned at the beginning, who create entire websites just to report on their social commitment. Now you are confronted with the problem of figuring out how to position yourself without paying a high price for it.

Collectivism vs. individualism. Let's imagine that being an employer, you announce on your website that you have launched a climate protection fund. Up to this point, everyone will appreciate your ecological commitment and celebrate the idea.

But if you go on to say that each of your employees must give up 2% of their salary as a result, this good idea might drop as a bomb on your feet. Potential workers might think: "Let them use their family's money! I won't start the job!" Now it is important that you show your perspective and stand up for your values! If you get your employees aboard and they stand together with you as brand ambassadors for your values, you will succeed and have the chance to do good and at the same time attract employees who fit your value system.

Money is not everything. According to the Xing Salary Survey of 2019, one in ten users say they would be willing to leave their job to pursue a socially responsible task, and one in two would even be willing to accept a lower salary to do so (Xing Gehaltsstudie, 2019). As you can see, the degree of social innovation that can be implemented is essentially determined by your value identity! If this is communicated externally, you will differentiate yourself from other companies in the war of talents.

For example, set up a volunteer programme in which each employee can use an extra day of holiday for a personal, individually chosen voluntary commitment. In this way, you support several different social causes at the same time, strengthen the emotional bond of your employees to the company through appreciation and increase your reputation in the social environment and on the regional labour market through the positive external effect.

In the best-case scenario, you and your employees will inspire your professional environment to imitate such an action, which has the potential to increase its effectiveness many times over and bring about real change!

7 Summing Up

In conclusion, there is no go-to strategy for the meaningful and successful implementation of social innovations in a family business. However, if you prepare the ground for social innovations to flourish through value-based leadership, you are already on the right track. The path is the goal. Communicate and live your values and take your employees as well as family members aboard your journey. Be brave to tackle change and do not wait for the supposedly right time. Have the courage, even in fast-moving times, to believe in new concepts, and be willing to take risks, to give your employees the benefit of the doubt and to allow changes and still maintain control. Listen and ask the right questions. Try it; use the swarm intelligence of your staff, thus creating innovation hubs; and allow failure. There are many ways, they must fit your values.

We hope that we have been able to provide you with some inspiration.

> "It's not about ideas. It's about making ideas happen". Scott Belsky (co-founder of Behance) [TOP 25 QUOTES BY SCOTT BELSKY | A-Z Quotes, 2021]

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Nicolai Müller is a family entrepreneur by heart. The tax consultant is also a certified mediator as well as executive partner at Dr. Müller, Hufschmidt Steuerberatungsgesellschaft mbH and Clever Führen GmbH; both specialise in consulting family businesses and their HR management. Moreover, Nicolai Müller is also co-editor of the book WERTEorientierte Führung von Familienunternehmen and initiated the Durchblick conference. As founder and board member of the "DU BIST WERTVOLL STIFTUNG" – a non-profit charitable foundation set out to strengthen the creative abilities of children – he helps to create a better future.

In his own family business, Nicolai Müller lives his approach of retaining good employees, using their natural potentials and thus creating a working environment in which everyone can thrive. A challenge he constantly builds on.

Constanze Drescher , At Clever Führen GmbH, the translator deals with various topics related to acquisition techniques as well as the development of employer brands and content creation. In addition, Constanze Drescher has many years of experience in running various differently aligned social organisations and associations. She believes in encouraging people to make a change. Constanze Drescher works as press officer for the Du Bist Wertvoll Stiftung.

How Leadership Can Support Social Innovation Through Business

Christian Kastner

A medal glitters but it also casts a shadow—Sir Winston Churchill

1 Introduction

While living in a volatile, uncertain, complex and ambiguous (VUCA) world (Rodriguez & Rodriguez, 2015), the Covid-19 pandemic increased the desire of people for a more stable, just and equal one. Protests and movements like "Fridays for Future" increase the pressure on decision makers to evaluate their actions regarding future generations. Beneath the discussions about equality, poverty elimination and concern for the future is a desire to be innovative and to do things differently. Organisations are thinking about new ways of operating and are re-evaluating the way they do business right now.

Some have questioned whether social innovation is part of a political agenda or is a legitimate interest for people. Furthermore, they ask how social innovation influences ways of doing business (if it truly is a legitimate interest)? And what can business leaders do to serve their business as well as the common good?

This article will offer some thoughts on the concerns and questions raised. We will look at how social innovation could look in a business context. In addition, we will explore what leaders can do to implement social innovation in their businesses, serving both their commercial interests and the common good.

C. Kastner (✉)
Stuttgart, Germany

A. Ruthemeier et al. (eds.), *The Global Impact of Social Innovation*, Management for Professionals, https://doi.org/10.1007/978-3-031-03849-5_11

2 What Is Social Innovation?

Over the years, the world has relied on various innovations and technological advancements to solve different problems. In most cases, innovation was mainly connected to product invention or the growing knowledge and understanding of technology. To give a few examples, the invention of the wheel, the discovery and the use of fire, the Industrial Revolution and the mass production of cars. The challenges of the new VUCA world now require an organisation or individual to remain relevant without being left behind. Constant change and adaptation are needed as most innovative ideas are centred around improvements—to do things better, faster or cheaper for individuals and/or society at large.

Humanistic ideas around self-discovery and self-development started to put the focus on the individual (at least in Western societies). With the rise of socialist (and in the extreme, nationalistic and/or communist) ideas, governments and public opinion tried to adopt a more holistic perspective, encouraging the individual to sacrifice personal opinions and desires for a greater common good.

Innovation is translating an idea into a useful new process, product or service. But it also focuses on a shift in public roles, opinions and relationships and acquiring the needed public or financial support for it. Out of the need to improve on existing innovations came the idea to tackle social and environmental issues, which inspired the move from pure technical innovation to social innovations. Social innovation is an idea beyond mere innovation, which helps individuals and companies grow. It should not be an end in itself but should also help society to make progress.

Providing solutions to social and environmental problems, including financial instability, poverty, political turmoil, slow economic growth and diseases, etc., "... requires the active collaboration of constituents across the government, business, and the non-profit world..." (Soule et al., (n.d.), Anon, para. 1).

Max Weber (1988) defines the term "social action" as an action doing, tolerating or omitting something, which is perceived, for the person acting, as "social" insofar as it relates to the behaviour of others or is based on it. The individual is deliberately evaluating his action or non-action in the light of how it might impact or influence someone else. It promotes the benefit for a group over the benefit for the individual, which involves altruistic motives and that the most basic needs (i.e. food and water, etc.) are met. Such an attitude involves a constant questioning of the status quo.

Schumpeter (1912, p. 157) expands this thought calling innovation "creative destructive", a continuous cycle of destroying old structures while creating new ones. This involves not only individual companies but also whole industries as well as social systems and the environment. Zapf (2003) adds that the improvement of individual quality of life and the subjective feeling of individual well-being involves identity (loving and being), enough resources and a healthy environment. In other words, individual prosperity is in harmony with the well-being and quality of society.

Soule et al. (n.d.) (Anon) go along with the ideas of Schumpeter (1912, P. 157) of creative destruction or a complete makeover of society, as they identify "... three key mechanisms that are driving contemporary social innovation: the free exchange of ideas and values, shifts in roles and relationships (distribution of power and influence), and the integration of private capital with public and philanthropic support…". In contrast to Schumpeter, Soule et al. paint a possibly over-optimistic picture of a just and more egalitarian society while Schumpeter acknowledges that there are winners and losers in any attempt to change society.

So far, we have discovered that social innovation is seen as a collection of ideas for making individual lives, as well as society in general, better. It is a non-exclusive approach with no final truth but rather an exploration of change along the way. In other words, it involves doing things differently to get different results. By enriching the change process with the knowledge and input of as many people as possible, the outcome will likely be better than in previous attempts (new ideas meet social needs—Hubert, 2011, cited in Ionescu, 2015).

Figure 1 shows the interconnection between different areas of innovation. As approximately 80% of economic growth comes from innovation and the application of new knowledge (Porumboiu, 2021), innovation should not narrow down "just" to the social aspect of it. Recent research (Thagard, 2012, cited in McGowan & Westley, 2015, p. 55) of over 100 scientific discoveries and 100 technological innovations discovered "… the combination of mental representations (such as ideas that combine two or more distinct concepts, products etc.) as the most common explanation for the creative process…". In most cases, decision makers need to consider not only the social part of it but rather other forms of innovation, complementing an idea of social innovation to make it more holistic and acceptable. Also, as shown in Fig. 2, you have to evaluate the quality and dynamic of a possible innovation to see if it is just a seasonal/local desire or something applicable on a wider scale. In other words, the idea behind social innovation is not only the desire to create an idea or a pattern that is considered new. It rather adds a (spoken or silent) ideological threshold to see if the innovation has an impact on changing social practices and/or improving social and economic performance (Hämäläinen & Heiskala, 2007).

Having explored historical developments and the societal framework, we will look now at the role of business in social innovation.

3 Social Innovation in Business

3.1 What Is the Role of Social Innovation in Business?

Stakeholders in the corporate world are raising their expectations of organisations. Organisations and their leaders should take up a larger role in addressing economic, environmental and social issues. Additionally, they should consider their remit to be responsible citizens besides the organisation's usual aim of profit maximisation and growth. For example, production and sourcing could be done differently, and the company's employees, as well as the company itself, would be presented to the market in a new way. Companies will see this as a new way of reinventing themselves and those connected to them (Stephen, 2020).

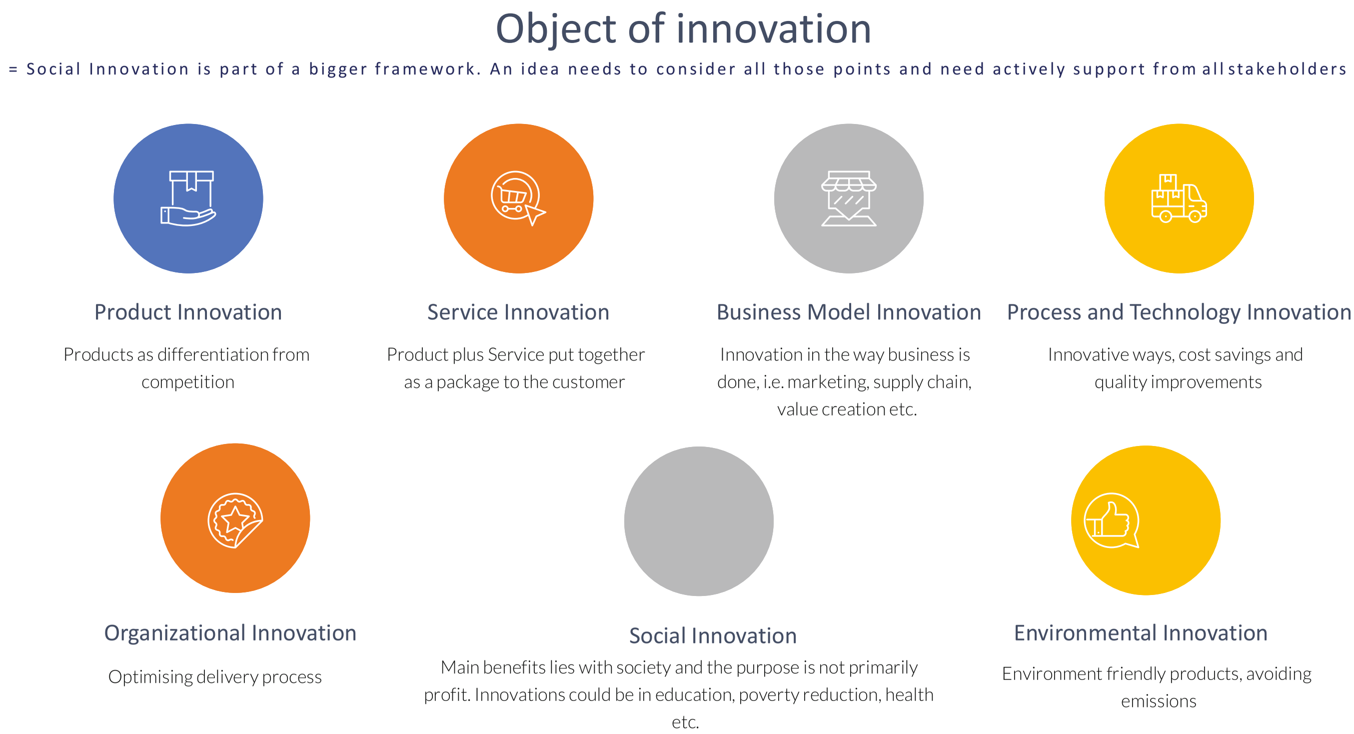

Fig. 1 Different objects of innovations. Inspired by (Zapfl, (n.d.), anon). (Source: Author)

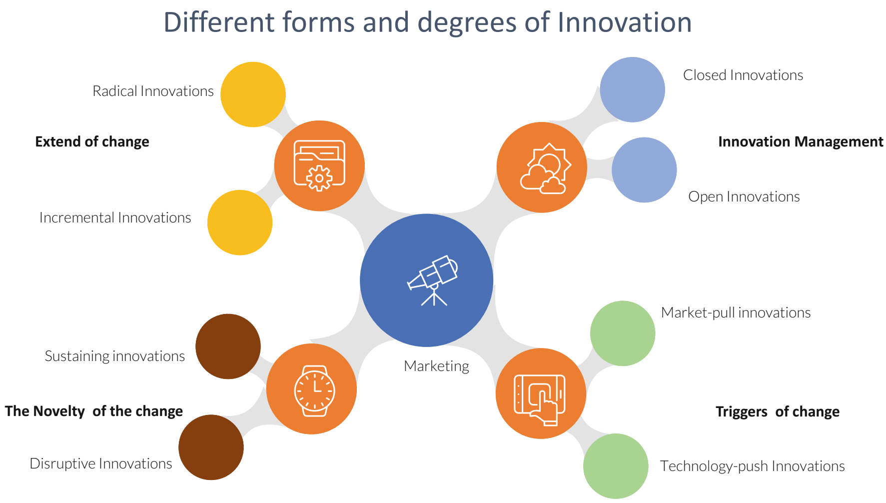

Fig. 2 Details of innovation. Inspired by (Zapfl, (n.d.), anon). (Source: Author)

What are the defining terms used to refer to social and environmental responsibility in the corporate world? Unlike in previous decades, public expectations are not narrowly confined to not-for-profit organisations (operating mainly in the third sector) but are rather channelled towards two groups (Phills, Deiglmeier and Miller, 2008, cited in Mirvis et al., 2016):

(a) **Traditional corporations**, where common goods activities are rooted mainly in a philanthropic intent (known as **corporate social responsibility—CSR**). The main aim is to ensure that the operation of a company is according to a code of conduct as well as beneficial and ethical to society. This might include the environment, human rights, economic responsibility and philanthropy.

(b) **Social entrepreneurs, enterprises and innovators in non-business sectors**. According to Mirvis, Googins and Kiser, 2012 (cited in Mirvis et al., 2016), this is called **corporate social innovation (CSI).** The core interest of this group looks from the outset beyond the commercial interest of a company and sees CSI as the establishment of a link with society. The approach of CSI is ongoing, addressing the issues and challenges that adversely affect the way citizens, communities, societies, corporations and businesses interact with one another and their natural environment. Schumpeter (1975, cited in Martin & Osberg, 2007) had already praised the concept of entrepreneurship for seizing economic opportunities, disrupting existing systems and then finding ways of creating a product and/or services to fill those needs. More traditional companies as well as individuals began experimenting with such new ways of embracing change: creating new business activities and approaches in redefining their core business, connecting to new networks of people and adapting (or upgrading) their visions of success (Ibarra, 2021).

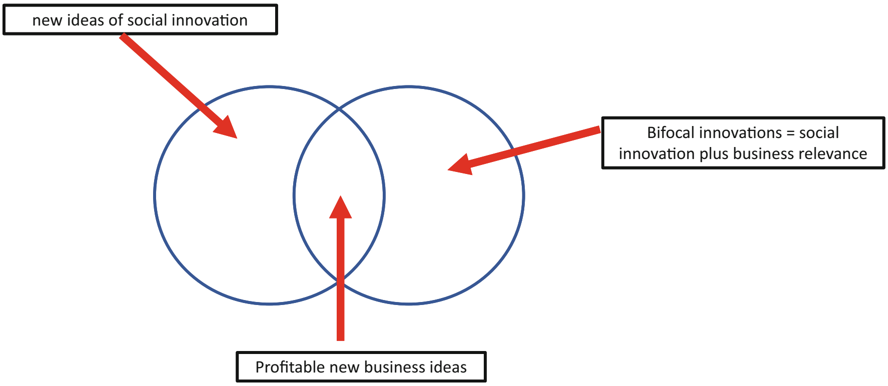

Fig. 3 The relationship between social and business innovation. Inspired by (Pol & Ville, 2009). (Source: Author)

According to a case study by KPMG (Carnegie et al 2014), there are three main differences between CSR and CSI:

(a) CSI is part of the **core business strategy and vision** as it goes beyond doing the bare minimum of CSR. Instead, it actively includes social innovation from the beginning, with **senior management giving active support** to those efforts by purposefully allocating resources for such stakeholder initiatives. Increasingly, social innovation is seen by for-profit businesses as a way of "doing well by doing good", a way of making a profitable business, while also doing something good for society in general (Varadarajan and Kaul, 2018, cited Crisafulli et al., 2020).

(b) **CSI leverages market forces** to create a positive impact, while meeting basic needs such as nutrition, healthcare and shelter. The solution will most likely look different from the traditional practices of the core business.

(c) **CSI is brought about through strategic collaboration with stakeholders** outside of the business. That cooperation connects groups of society that have rarely worked together previously (as seen in Fig. 3), while creating new common ground of cooperation, business and success.

Many modern leaders are very aware that profit maximising and adding shareholder value are not enough as a business goal anymore. According to a McKinsey study (Bonini, McKillop and Mendonca, 2007, cited in Saul, 2011), CEOs were asked about the most critical issues for the future success of their business:

50% named "educational systems and talent constraints"; 38% went for "climate change"; 36% mentioned the "globalisation's benefit accessible to the poor", and 12% see "access to clean water and sanitation" as pivotal. All of them had a least one social theme that they wanted to address in their sphere of influence. Even though this is just a snapshot, it shows that people in power think (and even care) about the socio-economic dynamics and situations, as only healthy societies produce good workers and business-friendly macro-environments.

Society plays a critical role in us obtaining our licence to operate and in granting our right to be active as a business. One way to reward society as a business leader is by thinking of ways to solve societal challenges; without society, a business cannot survive.

Over the years, we have seen corporate involvement in societal issues, with companies using different ways to get involved as citizens in society—such as corporate governance, corporate social responsibility and philanthropy. But CSI is different from these conventional approaches because it aims to create substantial benefits to businesses, while finding solutions to the challenges of society.

CSI is based on an interaction between all stakeholders that creates new ideas, products, services and models. This could include different parts of society, bringing together different levels and spheres of influence (Ionescu, 2015). Those initiatives complement and support other efforts of normative institutions and governments in creating an overall awareness (e.g. of climate change) and the creation of a framework to achieve these reshaping efforts of society.

3.2 Positive Examples of CSI (Kurin, 2017; Porumboiu, 2021; Sutton, 2020)

- **Vodafone** introduced a mobile wallet in Kenya in 2007 to provide millions of people with access to financial services. This was at a time when those services were not available to most Kenyans. For Vodafone, it offered great learning ground for future markets as well as a high market penetration for their traditional products (phone services). A possible extension of this idea could be the business model of **Fairphone**, a company committed to producing phones with minimal environmental impact—not using minerals like gold, tantalum, etc.—while promoting fair labour conditions along their supply chain (Tomas, 2021). This supply chain would **combine several aspects of CSI**: the creation of a product that enriches the lives of people who would otherwise not be able to participate in banking, using an environmentally friendly device and paying decent wages to staff. In the end, society, as well as the companies involved, would profit.
- **Tesla** is a good example of where the economy meets ecological benefits. A previously non-existent player in the automotive market was not only able to enter this market but also dominate it for years, in R & D as well as in sales (in the niche of electrical vehicles). At the same time, electrical mobility could be an important factor in reducing global warming and the use of fossil fuels (the social aspect of this innovation).
- **Philips** rented out LED lights to low-income households in Africa. On the commercial side, this was a form of market penetration, production distribution and value creation, but it also improved the quality of life of thousands who would not have had this opportunity without the initiative. By contrast to a not-

for-profit or CSR approach, the lights were not given to people for free, but rented to them for a small amount of money.

- **Crowdfunding examples like Catalyst, Start Some Good and Effjay**, which encourage entrepreneurship while also funding projects that contribute positively to society (in the case of Effjay, the production of insect-repelling t-shirts for children living in areas with malaria).
- **Desert control** has developed a product and application (to be used in the desert) that enables sand to retain water to grow crops. This will not only provide food but also create local jobs as well as combatting desertification.

3.3 Possible Pitfalls of Social Innovation in Business

As we have seen in the previous paragraph, there are already many positive examples of corporate social innovation. However, as with most innovations, there are also some precautions that need to be taken to avoid pitfalls:

- A proper balance of power with checks and balances is needed between **reward power** (to reward followers for their actions) and **corrective power** (to punish followers for their action or non-action). This is the case both in companies that are adopting CSI and in larger, norming bodies like governments or institutions in their attitude towards their stakeholders (French and Raven, 1959, cited in Zehndorfer, 2021).
- A threat to society, in general, comes from small interest groups, pushing their ideas for social innovation (and especially their ideas for solution/execution) as the only answer onto society. Often this is done without acknowledging the connection with other forms of innovation, other forms of truth and already existing systems (Brandsen et al., 2016). Schumpeter had already predicted by 1912 and 1939 that what he called "new men" would change existing systems and "subdue others", while changing the existing terms of business and society through "lawful and unlawful" means (Schumpeter, 1912, 1939; cited in Kattel, 2015, p. 10). Societies and governments are by nature hesitant to change too quickly, as innovation by nature involves failure. Instead, any innovation initiated or supported by governments will likely be "... incremental improvements of existing models rather than the invention of entirely new ones..." (Mulgan, 2006, p. 156).
- There is a danger in implementing micro level initiatives on the macro level without understanding the context and complexity of these implementations (McGowan & Westley, 2015). Governments and/or policymakers tend to think in top-down processes, while not allowing micro-initiatives to develop from the bottom up for CSI projects and other forms of social innovation. As those projects could look very different in cities compared with rural areas, these uncertainties are uncomfortable to policymakers, leaving them afraid of losing control (Brandsen et al., 2016). However, new approaches are necessary as existing one-size-fits-all models do not solve problems efficiently anymore.

4 What Can Leaders Do to Support Social Innovation in Their Businesses?

In the previous section, we looked at different examples of social innovation in a corporate context. Now we will consider the possible role of leaders in supporting social innovation through their business activities.

4.1 Adaptive Leadership

The idea of social innovation suggests an atmosphere of transformational, participative leadership (Roe, 2014), creating an almost messianic vision by a small group of intellectuals of a better and more equal world in exchange for the obedient participation of its followers. In other words, followers comply and obey in exchange for the idea of a new, fairer world. This is more a transactional, heroic view of leadership, where people get something in return for their work and/or obedience. Having such an idea of a directive force to create a better world is ostensibly noble but needs a proper accountability structure in place, as leadership and charisma are never enough. This can be seen with leaders in history (i.e. Hitler) who had very appealing (often simple) ideas for creating a better world—with catastrophic outcomes (Grint, 2010). As reality is seldom only black and white, it needs a more balanced and accurate portrayal. It is rather the need for an integrated, conceptual framework (Yukl, 1999, cited in Rickards & Clark, 2006) where the impetus for a CSI approach can come either from formal leaders or from other stakeholders. It is then authentic leadership (Roe, 2014) to create a common understanding within a social group (a company, organisation or nation) first and then to obtain the participation of individuals which leads towards the goal. Along the way, many adjustments need to be made. The main difference between the leadership styles is that authentic leaders use their self-awareness, internal moral perspective and transparency with stakeholders. This makes CSI initiatives more transparent with a better chance of gaining acceptance from within the group on decisions.

4.2 The Leader Serves as a Role Model in a Learning and Creative Organisation

Nothing influences the behaviour of employees more than their leaders practising what they preach—when they "walk the talk" and act as role models, not only practising CSI but also creating a new identity for the group (making CSI a priority), actively encouraging others and enabling them (Esse, 2021). To support these initiatives, old leadership models (heroic, top-down) need to be at least partly replaced by a transformational approach. Leaders create a learning organisation through many platforms and interactions (Senge, 1990; Senge, 1999; cited in Grant, 2002). A learning organisation encourages feedback, sharing of knowledge, success, failures and leanings to create over time a positive (yet strong) new corporate culture with a tolerance of individuality (de Geus, 1997; cited in Grant, 2002).

4.3 The New Roles of Leaders Are Connected with Creativity, Evaluation and Discernment

CSI becomes possible within an organisation if new ideas are encouraged, evaluated, tested and applied. Building on existing products and services, leaders and all stakeholders should initiate an environment of creativity, either to improve existing projects or create completely new ones. As it is not good enough to have ideas, leaders have to guide, evaluate, encourage and lead their followers into creative innovative action (Benner & Tushman, 2003). One good example (on innovation and the power of those efforts, not in relation to CSI) is an initiative at AXA Insurance in Ireland (Wolfe, 1994), where the CEO brought together mixed groups from different levels and departments for brainstorming. After 6 months the group came up with 150 new ideas, both for products and services. Not all leaders will have similar results, but this shows the possibilities when people are willing to step out of their comfort zones and challenge existing boundaries and mindsets. As in the example, this requires the initial initiative of a leader (or a group) to trigger it, whether or not they occupy a formal leadership role.

4.4 Leaders Need to Enable Followers and Live with Paradoxes Between Social and Profit

Stakeholders in CSI companies live with the tension of losing dual focus (commercial vs. social), tending to overemphasise one side while contending with internal conflicts between team members representing the different sides (Smith et al., 2012). This requires first of all acceptance that those conflicts exist and also the resilience to champion (together with the stakeholders involved) what is important in the situation as well as in the overall mission. It is necessary to accept paradoxes, reframing old models of "either/or" (profit vs. social) and embracing the new mindset of "both/and" at every level of operation (Miron-Spektor, 2019). To see CSI in an optimistic, resilient way as a leader and not as a threat to "normal" business is the challenge for any CSI leader.

4.5 Leaders Connecting the Needs of the World with Stakeholders' Desire for Meaning

Covid-19 could be a wake-up call, prompting all business leaders to think about the way they operate. This is true not only concerning operational practices but also to the fact that a more holistic approach is needed. It is not only a new era of how we work, where we find resilience and purpose, but it could also be a global opportunity

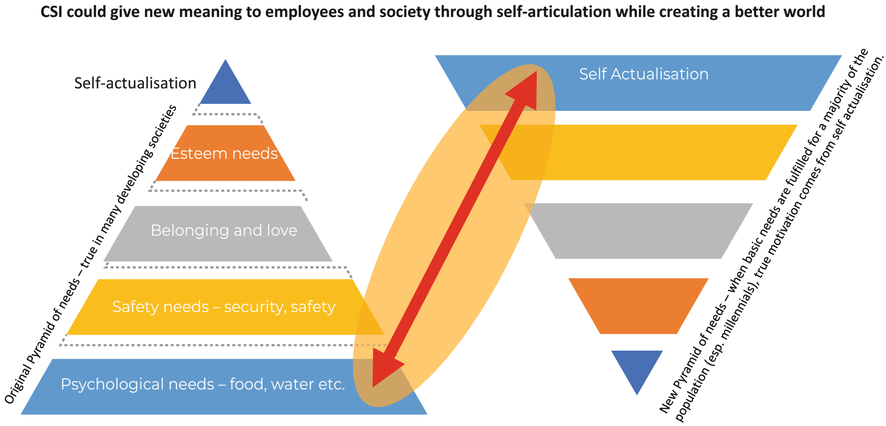

Fig. 4 New hierarchy of needs and motivation. Inspired by (Maslow, 1943). (Source: Author)

for new forms of cooperation and maximising potential (Duncan, 2020). One key issue remains: how do we see the world and what is our personal (and/or corporate) responsibility? Do we see the complexity, the big picture of social innovation (as shown in Figs. 1 and 2)? And how can we avoid becoming a "servant to one-sided interests" (Lewin, 1945, cited in Anderson et al., 2015, p. 35)? In the midst of those tensions and the public discourse, the author of this chapter sees a multitude of opportunities for both entrepreneurs and individuals to reinvent themselves—to create a new truth (Wallerstein, 1974, cited in McGowan & Westley, 2015) and to find personal fulfilment in for-profit activities as well as by doing good to society. This could lead to a positive social innovation revolution as it turns Maslow's hierarchy of needs and motivation (1943) upside down (as shown in Fig. 4—giving new meaning to employees and society through self-actualisation in social innovation while creating a better world). One group of people can find self-fulfilment in purposeful, life-changing business activities (CSI), which meet the most basic needs of other people by creating opportunities for work, meaning and education.

5 Possible Practical Steps for Leaders to Create Cooperative Projects for CSI

Further developing the thoughts on leadership in the previous section, we will explore some practical pointers for what leaders can do to implement CSI within an organisation:

- **Firstly, leaders have to have the strategic intent** to carry out CSI as part of their business (Porumboiu, 2021) and to form both products/services internally as well as create strategic partnerships along the supply chain. This involves an innovation orientation to encourage employees to think about new approaches, as well as funding those ideas and initiatives (Matzler, Bailom, Anschober and Richardson, 2010; cited in Kastner, 2021).

- **Identify gaps** between where you are now (company, HR, products, services), what the demands in the market are and what goals could possibly be achieved.
- **Get advice from people in your community** on how to make your project really "social" in terms of participation, environmental impact, social sustainability, etc.
- **Work on your company culture**, including the acceptance of different opinions in leadership, seeing diversity both in people and in their opinions as an asset, not as a threat. This also involves the creation of a strong brand/company culture, while leaving room for emerging truth and "shades of grey" along the way. Over time, this culture will need to be re-evaluated to establish whether its beliefs and operational practices still support the goal of CSI or whether adjustments need to be made. A recent study by Harvard Business Review (Chatman and Gino, 2020, cited in Esse, 2021) discovered that companies with strong company cultures which can adapt quickly to change can earn 15% more than those that don't.
- **Discover areas where you can implement social innovation.**
  Balamatsias (2020) suggests further ways to promote CSI in your business: by creating shared values among shareholders, collaborating with other individuals and CSI companies for cost-sharing in the supply chain as well as in distribution. But it's most important for leaders to see changes in the macro-environment like social justice, climate change and poverty not as threats but as possibilities. This involves employees, as well as customers and society, creating new products and services. Through those grass-root-level initiatives (i.e. micro-crediting- vs. government aid), problems are often solved in a more efficient and faster way than larger government agencies could do.
- **Create an internal coalition of change** (Kotter, 1996) of willing, like-minded people to work on your social innovation project. Share successful steps within the company as well as with the public to inspire and motivate others. As we are "social animals" (Esse, 2021, para. 24) who want to belong to a successful group of humans, those success stories increase not only the belonging (cognitive need) within a group but also satisfy the need for self-actualisation (as seen in Fig. 5). On top of that, it increases the positive recognition of a brand in society as well as an opportunity for it to differentiate itself from other companies. The benefits for the individual and the organisation, as well as society at large, need to be communicated often, as nobody wants to follow an intangible vision of a leader (Kouzes & Posner, 2010).
- **Conduct small test projects** to see if your ideas work—follow innovative examples of companies like 3 M (this example involves innovation but could work for CSI projects as well): every employee can use a certain percentage of their working time without any justification (15% in the case of 3 M for innovation) for individual CSI projects of their choice. As a certain percentage of the annual revenue has to come from such projects (and individual managers bonuses and promotion are tied to those numbers), everyone has an incentive to participate in such an effort (Collins & Porras, 1995).

6 Conclusion

After looking at the historic development of social innovation in Sect. 1, we have explored in Sect. 2 social innovation in a business context. CSI could be a new way of combining social responsibility with innovation in a business context, both to create profits and to improve the lives of others (as shown in the case studies of existing CSI projects). Removing ideological barriers between "social" on the one side and "business" on the other, the author of this article intended to show that there can be more than coexistence. Business leaders can do what they are good at: seeing opportunities for matching the need and desires of people with their products and services, carrying out those activities with an approach that incorporates social innovation. The final section offered some ideas on what leaders can do to initiate social innovation initiatives in the corporate world, meeting needs and creating profit but also placing meaning over money. CSI could therefore become an activity that takes away the threats of radical, ideologically motivated movements as it matches economic interests with the needs of the global population.

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Christian Kastner Christian is passionate about international sales and leadership. His work for SMEs has taken him to 70+ countries, actively leading sales organizations and multicultural teams. Christian holds a Master's degree in Leadership as well as an MBA, both from Universities in the UK.

On a voluntary basis, Christian enjoys writing books and articles, researching about "How can we create prospering businesses, but also make sure that people reaching their full potential?" He is also acting as a mentor to students as well as coaching leaders.

He lives with his family near Stuttgart/Germany and enjoys travel, good food and personal development.

Regeneration: A World that Works for Everyone!

Marc Buckley

Regeneration: A World that Works for Everyone!

Regeneration is actually how it has always worked.

October 18, 2021

The biggest transformative innovation in human history will be the collective discovery and recognition that we are all part of a symbiotic Earth, meaning our health is a microcosm of the world around us. When the way we live and all we do is in symbiosis as a regenerative operating system for humanity, we will finally be able to keep pace with our world. Restoring and contributing to a regenerative balance within the safe operating spaces of our planetary boundaries. Putting humanity at pace with an exponentially growing world and cooperating to an overall slowing as humanity balances into quantum tunnelling. Symbiosis is an ecological phenomenon and a major mode of evolutionary innovation that has been ignored for far too long (Margulis & Sagan, 1986).

Social innovations sprung up from just social organizations whose sole purpose is to create just societies conducive to regenerative life on Earth. Social innovations are to offer solutions to what appear to be insoluble dilemmas: poverty, global climate change, terrorism, ecological degradation, polarization of income, and loss of culture. It is not burdened with a syndrome of trying to save the world; it is trying to regenerate the world.

Social innovations are impact innovations for purpose that empower us all to solve human suffering and our global grand challenges. They have the power to achieve all 6 major transformations needed to get us out of the Anthropocene into the Symbiocene (Albrecht, 2019). They empower us all to fulfill our role as crew

M. Buckley (✉)
UNFCCC, Resilience Frontiers, Expert Network for WEF, UNSDSN, HLWG of the UN Climate Change Global Innovation Hub on Nutrition and Health, United Nations Climate Change Global Innovation Hub (UGIH), Berlin School for Sustainable Futures, and ALOHAS Regenerative Foundation, Hamburg, Germany
e-mail: marc@marcbuckley.earth

A. Ruthemeier et al. (eds.), *The Global Impact of Social Innovation*, Management for Professionals, https://doi.org/10.1007/978-3-031-03849-5_12

members on this spaceship earth by solving human suffering and our global grand challenges. They are also the most impactful way to move cultural evolution forward into the twenty-first century to keep pace with our exponentially growing world. It is such a beautiful way to get humanity to a lifestyle within the safe operating spaces of our planetary boundaries and provides us with resilience and regenerative economies for all global citizens.

So let us take a step back for a cosmic perspective or the overview effect in order to bring in some clarity, answers to our problems, and possibly show us a way forward. We also need to apply some big history learnings to know what models and frameworks have already been tried which should give us an idea of what not to repeat and an awe-inspiring sense of the role we play as crew members on this beautiful spaceship Earth.

> The nitrogen in our DNA, the calcium in our teeth, the iron in our blood, the carbon in our apple pies were made in the interiors of collapsing stars. We are made of starstuff. (Sagan 1980a, b, p.141)

The basic elements of life that make up our bodies are the same elements and more that make up Earth. We crawled out of the primordial soup of our Earth and eventually walked out of the plains of the savannahs in Africa. This was and still is a very regenerative process. The 4.5-billion-year birth of our Earth in a centric timeline shows the beginning of life emerging first with bacteria at around 3.8 billion years, which is consistent with the make-up of the human body which is made up of—100 trillion of microbial cells and—two million microbial genes keeping our human cells and genes in balance and check to the fact that we have more in common with our Earth, other animals and nature than we think or act like we do.

> The climate crisis is not a science problem. It is a human problem. The ultimate power to change the world does not reside in technologies. It relies on reverence, respect, and compassion for ourselves, for all people, and all life. This is regeneration. (Hawken, 2021)

In 1924, Boris Mikhaylovich Kozo-Polyansky wrote a book called *Symbiogenesis*, a new principle of evolution, in which he reconciled Darwin's natural selection as the eliminator and symbiogenesis as the innovator (Kozo-Polyansky, 1924).

Dr. Lynn Margulis started a scientific revolution. Hers is the story of a scientific rebel who challenged the male-dominated scientific community and proposed a new approach to understanding life.

The Leonardo da Vinci Society for the Study of Thinking inducted Dr. Lynn Margulis as a member and recognized her as "one of the world's greatest living thinkers", citing her revolutionary work on the origin of nucleated cells (serial endosymbiotic theory) and her collaboration with James Lovelock on Gaia Theory in 1972, which basically is that the Earth functions as single self-regulating system in symbiosis, conceptualizing biodiversity and mutualism in their most advanced and elegant integration (Lovelock, 1979). Quoting from the Society's press release, "Dr. Lynn Margulis, through her revolutionary life's work in theoretical biology, has enhanced the intellectual progress of mankind... Heralded as one of the most original thinkers of our era, Professor Margulis has authored more than 130 scientific articles and 10 books".

The dominant theory of evolution (often called neo-Darwinism) holds that new species arise through the gradual accumulation of random mutations, which are either favoured or weeded out by natural selection. Natural selection, survival of the fittest, only the strong survive, dog-eat-dog and severe competition have crept into every part of humanity and our interactions with each other. Neoliberalism and neo-Darwinism have become more than just terms or divisions among humanity but an actual human condition that is held on to as how humanity and more so the world works.

My hope and desire are that you will feel free and relieved from all the anger, angst and frustrations once you also come to the realization and understanding that this is absolutely *not* how the world works or has to. Repeating history instead of learning from it and facing collapse, economic bubbles, continual struggles, suffering and conflict can be a thing of the past as a collective learning lesson in history for humanity. There are life and business models that work the way the Earth works and are regenerative. These models are not taught in grade school and especially not in business school, thus keeping one of the most powerful modes of social innovation locked up from the mainstream.

Carl Sagan in Cosmos series Who Speaks for Earth? episode 13 said it best:

> A new consciousness is developing which sees the earth as a single organism and recognizes that an organism at war with itself is doomed. We are one planet (Sagan 1980a, b)

Symbiosis is an ecological phenomenon where one kind of organism lives in physical contact with another. Long-term symbiosis leads to new intracellular structures, new organs and organ systems and new species as one being incorporates another being that is already good at something else. This major mode of evolutionary innovation has been ignored for too long; it is time we help everyone understand symbiosis and what it means for humanity to live on a symbiotic Earth that is inherently regenerative on all levels (Margulis & Fester, 1991).

The human genome can combine in trillions of ways to make a human. I believe we have a pretty good idea of how we were made. Currently we have a population of close to 7.8 billion. The information that is important to ask or know is: how many humans have ever been born? And what is the likelihood or chances of being born at all? The latest estimate as of October 2021 is about 117 billion have ever been born (Kaneda & Haub, 2021). Which is a 1 in 400 trillion if not 1 in 400 quadrillion and most likely 1 in 102,685,000 chances of being born, so basically zero chance. Likelihood of Being Born (de Grasse Tyson, 1995, 2021) (Binazir, 1995, 2021).

> "We are going to die, and that makes us the lucky ones. Most people are never going to die because they are never going to be born. The potential people who could have been here in my place but who will in fact never see the light of day outnumber the sand grains of Sahara. Certainly, those unborn ghosts include greater poets than Keats, scientists greater than Newton. We know this because the set of possible people allowed by our DNA so massively

> exceeds the set of actual people. In the teeth of these stupefying odds, it is you and I, in our ordinariness, that are here. We privileged few, who won the lottery of birth against all odds, how dare we whine at our inevitable return to that prior state from which the vast majority have never stirred?" (Dawkins, 1998)

We have heard it before; live everyday as if it were your last. Did we understand why and that we actually already won the lottery? The probability of our existence is staggering. Yes, we can be motivated by Steve Jobs who advise to look in the mirror and tell yourself live today as it was your last. I do not believe in miracles, but this is something to celebrate being alive, to making the most out of every moment and like Horace Mann said to "Be ashamed to die until you have scored a victory for humanity".

My mentor Dr. Fritjof Capra who wrote the academic textbook on *The Systems View of Life* was having a discussion with me on my podcast Inside Ideas (Buckley 2021 #139) about regeneration and how it has become the buzzword over the last 3 years from regenerative agriculture to regenerative economic models. As an alumnus of The Systems View of Life and Capra Courses from Dr. Capra, I have come to a new scientific understanding of life. The understandings and systems science below come from these studies Dr. Capra and his numerous references to those scientists who brought this science forward.

During the last two decades of the twentieth century, a new understanding of life emerged at the forefront of science. The intellectual tradition of systemic thinking, or "systems thinking", and the models of living systems developed during the earlier decades of the century form the conceptual and historical roots of this new scientific understanding of life. Systemic thinking means thinking in terms of relationships, patterns, processes and context. Over the past 25 years, this scientific tradition was raised to a new level with the development of complexity theory. Technically known as non-linear dynamics, complexity theory is a new mathematical language and a new set of concepts for describing and modelling complex non-linear systems. Complexity theory now offers the exciting possibility of developing a unified view of life by integrating life's biological, cognitive and social dimensions.

The system's view of life has four fundamental characteristics of life which are systemic characteristics that are the very essence of life. The first one is life organizes itself in networks that is a very fundamental discovery maybe one of the most important discoveries of the twentieth century. The second one is life is inherently regenerative at all levels. The third is life is inherently creative also at all levels. The fourth characteristic is that life is inherently intelligent. This is quite complex, but the fundamental characteristics are that we all are regenerative. This is a very important subject as you may have noticed the term regenerative has become very fashionable these days, maybe even a little bit trendy.

Indigenous cultures or just simple farmers who deal with life on an everyday basis know very well that life is regenerative. We have the turn of the seasons, and every year you have new leaves, new grasses, new flowers and new fruits, and that goes round and round. So, the regenerative nature of life is well known to almost everybody except scientists and corporate leaders.

One of the first scientists by the way who recognized and observed this was Leonardo da Vinci in Italy. Renaissance Leonardo observed this continual renewal as he called it, the renewal of leaves, trees, plants, feathers on birds and so on, and he concluded that the Earth as a whole is alive very much as we say today in Gaia theory.

What is new today is to place this regenerative nature at all levels of life at the very fundamental level. The simplest living organism is a single cell. As an example, a bacteria, the cell is a self-organizing network which is the first characteristic. The main characteristic of this self-organization is that self-generation of every part in a cellular network helps to either transform or replace other parts and so the network continually regenerates itself. It is continually regenerating; the same is true at the higher levels of life where our bodily cells are continually recycled. The cycle of life and death is part of this regenerative nature at a larger level, but what is new in science now is that life itself is inherently regenerative at all levels. When people say sustainability is an old concept and that we need to go beyond it, we need to be regenerative. They do not understand that sustaining life means being regenerative because life itself is fundamentally regenerative. This is a very important idea that is beautiful and needs to be brought up as regenerative education.

Regenerative education, the word regenerative or the concept may be a little trendy, but it also gives us that opportunity to think about how can we recover our true nature, our true self which for most of us through education and social conditioning and through the environment that we live in has taken us away from who we really are disconnecting us from the natural world.

Regenerative in education is discovering yourself again, validating who you are and going forward with what we bring into the world. The term is very evocative and immediately understandable, something everybody knows; people may have different ideas of what is being regenerated, but the process of regeneration is immediately understandable, and it is because of our basic experience of the regenerative nature of life, when we look in our natural environment especially those of us who still manage to be connected with nature. Those who spend some time in the mountains or the forests or at the ocean really experience nature and in the process regenerate themselves.

> I have spent most of my life unlearning things that were proved not to be true. R. Buckminster Fuller (1975)

It is important to understand civilization frameworks, social structures, economic models and models for life. We have had more than 20 civilization frameworks: Palaeolithic age, Neolithic age, Mesolithic age, Early Antiquity, Early Mesopotamia, Incas, Aztecs, Anasazi, Maya, Indus Valley, ancient India, ancient Andes, ancient Greek, Roman Empire, ancient Chinese, ancient Persian and many more. All but three of these civilizations collapsed because of ecological and environmental collapse. The similarities between early civilizations fall into six facets including agriculture, socialization, hierarchy, industry, architecture, and religion.

These collapses and the facets they shared are the same we are facing today with human suffering and our global grand challenges. The repeat of history and potential collapse is similar. The civilization framework and model we know to work indefinitely are symbiotic and regenerative. Hierarchy has no place in a regenerative model; industry, agriculture, religion, architecture must be regenerative and systemic.

In Einstein's problem theory he said, "We cannot solve our problems with the same thinking used when we created them". When we are looking at how life can go on indefinitely as a framework that works for everyone, we need to look at symbiosis and regeneration.

Hannah Arendt's books *The Human Condition* and *The Banality of Evil, Eichmann in Jerusalem* showed the concept of the banality of evil when discussing the moral wrongs brought about by hierarchy, the numerous hierarchical structures throughout history that have all created human suffering and eventually collapsed (Arendt 1958/1963). Even though in 2021 we have governmental and organizational hierarchies, it does not mean that this is the way the world works and this time it is different than the thousands of examples in history that all hierarchy models have a limit to growth. Hierarchy structures cause evil or corruption by people who never made up their minds to do good or evil. It is the model structure that perpetuates the harm. We have examples from VW's 2015 Dieselgate or Trumps presidency. Rather than concentrating power into leadership positions that could be usurped by people like Trump, we'd be better off decentralizing power into more local, more accountable, more governable configurations. Interestingly, that's exactly what happened in the 4 years of Trump's presidency. With the head of the state in disarray, everyday people took it upon themselves to address issues that might have otherwise been left to the government – organizing eviction defence, joining street movements against police violence, taking what they need to survive and more creating local and regenerative symbiosis.

In the past two and a half years depending on where you live in the world, have you experienced any of the following?: the feeling of unease, fear or anger; a feeling that things do not make sense, that the world is not in harmony or balance and that the healthcare or governance systems where you live are just not working; experienced infrastructure malfunction or collapse; have you lost a loved one or lost your job?; had to lay off people in your organization, go out of business, trouble hiring or no desire to return to the job you worked before the pandemic? I am sure some of us experienced some of these things before the pandemic. This time is it different and much worse? Why? Could it be because it is happening globally, because the help or support structures were also impacted; is it because we do not feel like the response is a solution and that it could come back even worse?

We have and are experiencing numerous global events since the exponential spread globally of COVID-19 (first cases Nov. 17, 2019); economic crisis; war in Ukraine, Global Supply Chain issues, unrest in The Netherlands, uprise in Italy, explosion in Lebanon; uprise in Belarus; uprise in Australia; uprise in South Africa; Brexit and 3rd Prime Minister Resigning; storming of the US capital; crazy times around US inauguration; Black Lives Matter; Asian racism; extreme nationalism; inequality increase and intensity of global fires, hurricanes, floods and droughts; and especially those much larger crises: resource crisis, climate crisis, biodiversity crisis and human extinction crisis in the Anthropocene.

Have you ever asked yourself the question: what does a world that works for everyone look like?

How about the burning question, WTF? – what's the future(s)?

This time more than any other in human history has brought us all to question life and the models we are using to get into the future. As an environmentalist and advocate for the UN Sustainable Development Goals, many people have come to me and said we thought you are a tree hugger or hippie. Why do you speak so much about economics, innovation and the future? This is easy; as a student of ecological literacy, sustainability and environment, I became an expert in four schools or pillars which have really been the key to seeing the big picture: systems dynamics, economics, innovation and future studies.

In 2018, all international organizations UN, WEF, WHO, WTO and World Bank switched from a long-standing linear and siloed approach to solving human suffering and global grand challenges to a systemic approach to solving our problems.

To understand sustainability, you must have a clear understanding of all economic models those that do not work like extractive economics and capitalism and all those models that do work past eight generations and at a global scale like agrarian societies, local economies, circular economics, doughnut economics, steady-state economics, mission economics, planetary boundaries, ecological footprint economics, shadow economy and ecological economics. Did you even know about some of these economic models? Which ones are you in? Economics not only at the local level like a shadow economy but at the country level as an extractive economy. Historically it is extremely clear which economic models continue to fail or collapse and those that show enormous potential to go on regeneratively almost indefinitely.

You need a clear understanding of innovations and emerging technologies that can help transition humanity into a new epoch out of the Anthropocene to the Symbiocene, maybe the Sustainocene or the Novacene like James Lovelock suggested in his last book. We need sustainable impact innovations for purpose that ease human suffering and solve our global grand challenges. All innovations or emerging technologies are not alike or good for humanity and the environment. If we are going to use innovations to help humanity to achieve all six of the transformations needed to achieve the Sustainable Development Goals, they must be sustainable impact innovations for purpose. The six transformations are major social transformations needed for humanity to advance which are also modular building blocks of SDG achievement: (1) education, gender and inequality; (2) health, well-being and demography; (3) energy decarbonization and sustainable industry; (4) sustainable food, land, water and oceans; (5) sustainable cities and communities; and (6) digital revolution for sustainable development (Sachs et. al., 2019).

Geoengineering our way out of some of this mess must be weighed very carefully to make sure we do not see negative feedback loops. Direct air capture (DAC) is an amazing innovation that if implemented at scale is a wonderful tool to add to humanity's toolbox to address carbon emissions. You may have heard of Climeworks which is 1 of 12 leading organizations in the world doing DAC. We are 7.8 billion people on Earth, and at 420.99 ppm (parts per million) today with these 12 leading companies, we are not even ticketing the surface of solving this problem. We could have 500,000 Climeworks then we would be making a dent at keeping up with the pace of global warming today (ppm, 2022).

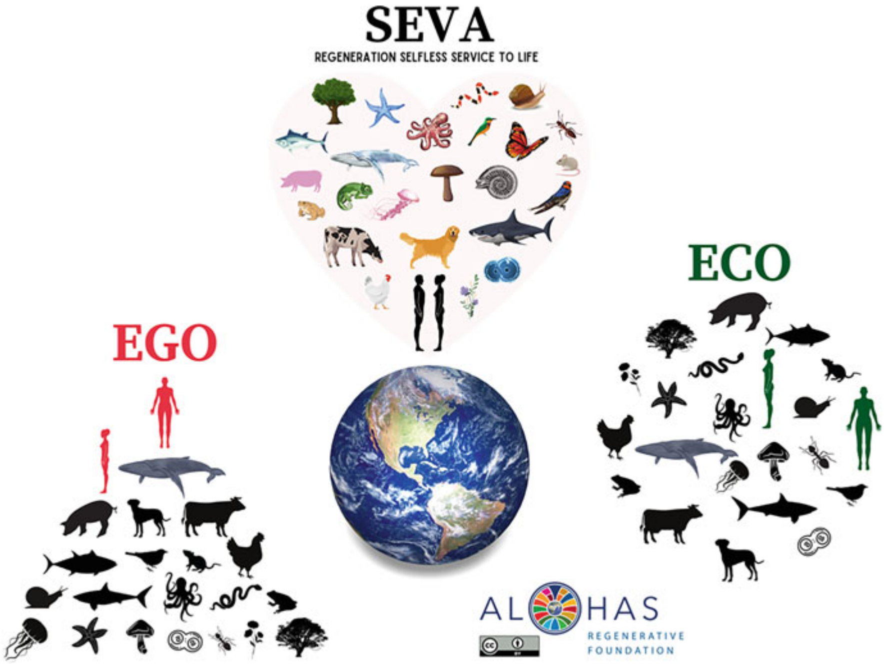
Emerging technologies and innovations like Blockchain and Distributed Ledger Technology show enormous potential to usher us into decentralized and distributed futures. The problem is when an emerging technology like Blockchain and cryptocurrency mining is running on fossil fuels which are very energy-intensive. They are not very innovative or emerging since they are running on outdated infrastructures, which is an investment or speculation against our future. Fossil fuels are stranded assets and a direct investment against the future of humanity. The only other investment looking as bad is intensive animal agriculture.

Some of my favourite sustainable social impact innovations are restoration agriculture, carbon farming, conservation agriculture, holistic land management and regenerative agriculture; by restoring land and industrial agriculture to regenerative organics, agroforestry, restoration, no-till, silvopasture, cover cropping, perennials or permaculture, not only can you get amazing organic food but lock in tonnes of greenhouse gas emissions.

I have been asked before why do you have the title sustainable futurist or regenerative futurist? Are you not an activist or environmentalist? A hippie tree hugger? Do you want to go to space? In order to stop human suffering and solve our global grand challenges, you have to have an idea or vision of what a sustainable future looks and feels like. When creating road maps and plans to reach regenerative desirable futures, you have to have a clear vision of what that looks like and a knowledge of all the tools used to create a plan and road map to those futures. I wrote the Sustainable Development Goal Manifesto for the United Nations to set the vision for this future to 2030. There are many future tools available: backcasting, foresight frameworks, foresight tools, sense-making, third horizon framing, moonshots, trends, scenario exploration, mapping, dynamic modelling and many more. You do not necessarily need to develop the road map or plan, but it is good to answer the question: what's the future? Believe it or not, but most people have not asked themselves that question. Few to none can point to the climate plans at the city, country, regional or even global level. Without the ability to answer that question, we are never going to reach the needed thrust by governance policy. No matter where you live, the future will largely be decided for you by the predetermined infrastructures and the habits of the communities where you reside. So, if you know what the future is, if you have that vision, then you should hold your politicians, communities and your nations accountable to that vision or move (action) to see your vision of the future achieved.

Challenge companies and cities to generate massive value by learning from and serving Earth's living systems. Help leaders and emerging leaders clarify and advance both organizational and personal sustainability goals.

As humanity we need to make this transition out of the EGO that man is on top and ruler of all to an ECO perspective, but the journey does not end there; we really need to reach SEVA (ancient Sanskrit word) meaning service to life! Ideally to reach a steady state of regeneration – selfless service to life!



All humanity should strive to leave the planet better than we found it.

My mission is to empower billions of global citizens to live an adaptive lifestyle of health and sustainability within the safe operating spaces of our planetary boundaries. If you are familiar with Simon Sinek, you will know this is my why. I have been fascinated for decades knowing that there is a why put in writing from R. Buckminster Fuller published in his book *Operating Manual for Spaceship Earth* in Fuller 1960/1969.

> To make the world work for 100% of humanity in the shortest possible time through spontaneous cooperation without ecological offense or the disadvantage of anyone. (R. Buckminster Fuller 1960/1969)

To think that we have been discussing climate, our future and environment since the 1960s and that such beautiful people existed who wanted a world that works for everyone as well is truly stirring to make it a reality.

It is about people who want to save the entire sacred, cellular basis of existence, the entire planet and all its inconceivable diversity. The term environmental social governance encompasses socially innovative organizations that are the largest social movement in history.

There are evolving regenerative civilization frameworks in existence that can work for all humanity and cultures. There are more than seventeen ecological economic models in our world with new ones emerging daily, any of these combined with regenerative platform systems dynamic life models, and sustainable social innovations for purpose can harness the gravitation pull/assist of humanity in symbiosis here on earth also known as the slingshot effect to keep all life within the safe operating spaces of our planetary boundaries indefinitely, well beyond the twenty-first century. A world that works for everyone is one of SEVA, regeneration – selfless service to life!

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Marc Buckley has been involved in climate activism for a long time and would love to show you how to run faster than climate change by being an impactful and exponential human being. Trained by Al Gore as a climate speaker, he has made getting through the climate crisis towards resilient desirable futures his life's work. As an advocate for the SDGs; UN advisor and Resilience Frontiers futurist; social innovation, climate change, agriculture, seafood, food and beverage expert network member of the World Economic Forum; global food reformist; and sustainable futurist, Marc is on a mission to empower billions of global

citizens to live an adaptive lifestyle of health and sustainability within the safe operating spaces of our planetary boundaries.

Marc also hosts Inside Ideas https://marcbuckley.earth https://www.innovatorsmag.com/inside-ideas/ https://www.youtube.com/c/InsideIdeas an international video and audio podcast produced by OnePoint5 Media and *Innovators Magazine*. Systemic change is needed to move us on to the right side of history. Marc talks with the game changers on a mission to get us there as fast as possible. He takes a deep dive with thought leaders, entrepreneurs, innovators, futurists and those solving global grand challenges. Renowned authors and experts share their insight on topics including sustainability, environmentalism, global food reform, SDG plan to get us to 2030, regenerative practices, systems thinking, critical thinking, innovation, new economic models and new civilization frameworks.

Senior Entrepreneurs Are Driving More—and More Sustainable—Social Innovation Worldwide Than Any Other Demographic

Elizabeth Isele

"Senior entrepreneurs" are not an oxymoron. They are, in fact, the twenty-first century's new economic engines. Entrepreneurs aged 50+ are launching new businesses faster than any other demographic worldwide,[1] and an overwhelming number are creating social enterprises, including green businesses. Moreover, studies have shown that 5 years after startup, 70 percent of ventures established by older entrepreneurs are still in operation compared to just 28 percent of enterprises launched by younger entrepreneurs[2] – something that points to one crucial factor: experience.

Equally important for sustainable impact is that while experience fuels innovation, it is also regenerative. The opportunity is at hand to intentionally facilitate knowledge transfer across generations and foster dynamic, innovative decision-making. Catalyzing multigenerational experience generates new insights, perspectives, and multiple paths to solutions. It also broadens the context within which the value, significance, and efficacy of ideas are examined, evaluated, and made actionable. Intergenerational networked knowledge combined with an entrepreneurial mindset to activate it represents a formidable and regenerative, solutions engine to drive innovation and boost workplace engagement, productivity

[1] Thomas Schøtt, Edward Rogoff, Mike Herrington, and Penny Kew. "GEM Special Report on Senior Entrepreneurship 2017." Global Entrepreneurship Research Association (2017). www.gemconsortium.org.

[2] Halima Khan, "5 h a Day: Systemic Innovation for an Ageing Population." Nesta.org, (February 2013). https://media.nesta.org.uk/documents/five_hours_a_day_jan13.pdf.

E. Isele (✉)
The Global Institute for Experienced Entrepreneurship, Portland, Maine, USA

Social Innovation Institute, Babson College, Wellesley, MA, USA

Global Economics and Finance, The Royal Institute of International Affairs: Chatham House, London, UK

A. Ruthemeier et al. (eds.), *The Global Impact of Social Innovation*, Management for Professionals, https://doi.org/10.1007/978-3-031-03849-5_13

and profitability, and successful new business startups that can result in healthier societies, a more sustainable environment, and robust economies worldwide.

Unfortunately, ageism presents a huge challenge to this opportunity. No matter when or where I share these insights, my audiences are often astonished. They still perceive entrepreneurs as young guys in hoodies working in garages.[3] Our vision is limited because we continue to measure aging in linear, chronological terms, obsessing over years lived in an ineluctable trajectory that targets obsolescence as its end point rather than measuring aging in terms of future potential envisioning undefined fields of possibility in later life. Technology is driving invention and, thereby, our abilities to live longer, actively, independently, and healthier than ever before. "Measuring age potential is vital not only because many behaviors are influenced by a person's expected longevity, but also because important economic and social magnitudes depend on it as well,"[4] argues Sergei Scherbov, director of demographic analysis for the Wittgenstein Centre for Demography and Global Human Capital.

1 Silver Economy Vs. Silver Tsunami

The aging population is the world's largest and fastest-growing untapped natural resource. According to the WHO *World Report on Ageing and Health*,[5] the number of people over the age of 60 is expected to double by 2050. The demographic is growing by 3.2% annually compared to just 0.8% for the rest of the population,[6] and, for the most part, they are living healthy lives longer. These seismic shifts affect individuals, communities, governments, and private sector organizations as they seek to address challenges related to health care, housing, work, and retirement. All too often, these factors are divisive and seem to point to the aging population as a burden, even a Silver Tsunami, for society but what if this demographic trend could be turned into an unprecedented economic opportunity? Negative thinking about older generations primarily as a liability obscures how much they can be an *asset*. Actually, today's older adults represent the largest talent pool in history, and they are redefining the future of work and traditional notions of retirement across all generations, cultures, and geographic boundaries. Their experience is a currency and a competitive advantage, especially in the future of work and entrepreneurship.

Consider these findings:

[3] Carmine Gallo, "New Studies Reveal the Ideal Age to Start a Business, and It's Not in Your 20s," (February, 2018). https://www.inc.com.

[4] www.iiasa.ac.at/pop/ageing.

[5] WHO *World Report on Ageing and Health*. Geneva: World Health Organization (September 30, 2015).

[6] https://www.brookings.edu/blog/future-development/2021/01/14/the-silver-economy-is-coming-of-age-a-look-at-the-growing-spending-power-of-seniors/.

- Although the media image of an entrepreneur is a tech-savvy youth in a hoodie working in his garage,[7] the Kauffman Index of Startup Activity found that the highest rate of entrepreneurial activity in the USA over the past 15 years was among the 55–64 age group.[8]
- Similarly, a 2014 Merrill Lynch study, "Work in Retirement: Myths and Motivations,"[9] found older employees who have no intention of retiring were three times more likely than young people to become entrepreneurs and launch their own businesses.
- A 60-year-old startup founder is three times as likely as a 30-year-old founder to launch a successful startup and is 1.7 times as likely to found a startup that winds up in the top 0.1 percent of all companies.[10]
- Financial institutions worldwide, such as AIB Dublin (the largest funding source for entrepreneurs in Ireland), are beginning to extend credit to senior startups, deciding the numbers of seniors who wish to start businesses is good business. Data collected on success rates are positive indicators of the new market opportunity. The bank's executive vice president of strategy and enablement stated, "This is a unique lending group, deserving of specific consideration in lending, that accounts for the maturity and seasoning of people 50+."[11]
- In 2016, the EU created a 50+ Entrepreneurship Platform, to boost Europe's economic growth, which, in addition to generating practical education, financing, and policy support for entrepreneurs aged 50+, aims to connect older entrepreneurs with unemployed youth (blending the elders' life and work experience with millennials' technology expertise) in order to launch more successful startups and simultaneously combat youth unemployment (currently at 20.9%, double the EU average, with youth unemployment figures in some member states higher than 50%[12]), to boost Europe's economic growth.[13]

[7] Carmine Gallo, "New Studies Reveal the Ideal Age to Start a Business, and It's Not in Your 20s," (February, 2018). https://www.inc.com

[8] Foundation, Ewing Marion Kauffman and Robert W. Fairlie, Arnobio Morelix, and Inara Tareque, "2017 Kauffman Index of Startup Activity: National Trends," (May 1, 2017). https://ssrn.com/abstract=2974462 or https://doi.org/10.2139/ssrn.2974462.

[9] Merrill Lynch Retirement Study, conducted in partnership with Age Wave

"Work in Retirement: Myths and Motivations/Career Reinventions and the New Retirement Workscape" (2014). https://agewave.com/wp-content/uploads/2016/07/2014-ML-AW-Work-in-Retirement_Myths-and-Motivations.pdf.

[10] Azoulay, Jones, Kim, and Miranda, "Age and High-Growth Entrepreneurship." https://ssrn.com/abstract=3158929.

[11] John Irwin, EVP of Strategy and Enablement, AIB Bank, Dublin, stated this after attending the GIEE Senior and Intergenerational Entrepreneurship Forum in Dublin, Ireland (February 2015).

[12] European Parliament Report "Creating a competitive EU labour market for the twenty-first century: matching skills and qualifications with demand and job opportunities, as a way to recover from the crisis" by Martina Dlabajová (2015).

[13] https://www.neweurope.eu/article/intergenerational-entrepreneurship-way-tackle-unemployment/.

- The Federal Reserve Bank's "Growing Grassroots Entrepreneurial Ecosystems" is focusing on senior entrepreneurs to boost rural economic development in the USA.[14]
- In the USA, senior entrepreneurs are not depleting entitlement programs, as they are often portrayed as doing.[15] Eschewing a dependency role and adopting an economically productive role, they contribute billions of dollars in state and federal taxes annually to support such federal programs as Social Security.

Reengineering the twenty-first-century workforce is an economic imperative. Corporations pushing older employees into retirement when they don't want to retire fail to understand the grievous impact on employee recruitment, engagement, retention, and productivity. We are experiencing a massive workforce gap because the number of young, incoming employees is far less than those exiting. As a society we have diminished the value of experience to drive innovation and perpetrated a brain drain – the scope of which is socially and economically devastating.

2 Who Are These New Economic Engines?

Entrepreneurship is a mindset, and an entrepreneur can be Anyone, Anytime, Anywhere. Seniors are flocking to the startup arena for a variety of reasons. Some are fulfilling a lifelong dream, others have lost jobs and do not see formal re-employment in their future, and some enter the entrepreneurship arena accidentally. No matter the reason, data demonstrates they are job creators who are stimulating economic recovery, revitalization, and growth in rural and urban communities, in developed and developing countries worldwide.

No longer burdened by the responsibilities of raising a family, paying tuition fees, rents, or mortgages, the 50+ are free to reignite the curiosity, creativity, and courage that got them through the vicissitudes of childhood and reengage in play—not so much physical play but playing with ideas to entrepreneur their way into a purposeful, new life created by the gift of 20-, 30-, 40-plus years of extended longevity.

Innovation does not decline with age. In fact, research demonstrates that older workers can be more innovative than their younger counterparts.[16] In *The Secret Life of the Grown-Up Brain,* for example, Barbara Strauch shares how the aging brain

[14] Dell Gines and Elizabeth Isele, "Six Steps to Aid Older Rural Entrepreneurs." The Federal Reserve Bank of Kansas City. *Community Connections* (August 2019). https://www.kansascityfed.org/publications/community/connections/articles/2019/q12019/senior.%20rural%20entrepreneurs.

[15] Janet Adamy and Paul Overberg, "Growth in Retiring Baby Boomers Strains U.S. Entitlement Programs." *Wall Street Journal* (June 2018). https://www.wsj.com/articles/retiring-baby-boomers-leave-the-u-s-with-fewer-workers-to-support-the-elderly-1529553660.

[16] Pierre Azoulay, Benjamin F. Jones, J. Daniel Kim, and Javier Miranda, "Age and High-Growth Entrepreneurship." National Bureau of Economic Research, Working Paper No. 24489 (April 2018). https://ssrn.com/abstract=3158929.

can grow and learn: "The brain, as it traverses middle age, gets better at recognizing the central idea, the big picture. If kept in good shape, the brain can continue to build pathways that help its owner recognize patterns and as a consequence see significance and even solutions much faster than a young person can."[17] Hence, for many seniors, their intuitive leaps are grounded in experience rather than risky random guesswork. It's applied intuition that takes years of experience to develop.

Also, with age, usually comes more clarity – of who you are, your priorities, and what drives you – which helps to narrow the purpose and direction of your business, mitigating the risk and leading to a greater likelihood of success. It's also far more attractive to consumers, who are four to six times more likely to buy from purpose-driven businesses.[18]

In addition to their curiosity, creativity, and courage, senior entrepreneurs are proactive, pragmatic optimists eager to solve problems and leave the world in a better place for the next generation. Understanding they do not have every skill needed to create successful impact, they reach out to others from multiple disciplines, age groups, and backgrounds to test and fine-tune their ideas. They also have a strong sense of empathy. The ability to sense motives and feelings of others grows stronger through life experience and enhances the ability to communicate effectively face-to-face as well as via any form of social media.

Social innovation is not created in a vacuum. At its core, all innovation is social: in its ideation, operationalization, and impact. Everything is interconnected: generations; cultures; geographies – real and virtual (as in the Cloud); and time (past, present, and future). All issues linked to our development and survival are intertwined and interdependent. They are catalyzed in social interactions, and the 50+ have social in their DNA.

The social interaction between bits of knowledge in older adults' heads is vital. When searching for answers and solutions, all the insights and know-how acquired throughout their lifetime experiences turn – sometimes consciously other times unconsciously – kaleidoscopically, making seemingly unrelated connections that create new patterns and designs.

Their social interaction to make an idea operable is grounded in a belief in human agency: that ability for humans to cultivate and curate multiple relationships, intentionally driving interactions to focus on unmet needs and developing and deploying effective solutions to challenging and often systemic social, economic, and environmental issues.

Then, too, there is the social interaction necessary for the innovation to create impact. Markets and society need to come together to create breakthrough intersections with a diversity of people, thought, perspectives, and sectors focused

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[17] Barbara Strauch. *The Secret Life of the Grown-Up Brain: The Surprising Talents of the Middle-aged Mind.* New York: Viking (2010).

[18] https://www.forbes.com/sites/afdhelaziz/2020/06/17/global-study-reveals-consumers-are-four-to-six-times-more-likely-to-purchase-protect-and-champion-purpose-driven-companies/?sh=35291c13435f.

on a particular issue to create breakthrough innovation. Action is essential; it's not the person that impacts you but how your intersection with that person impacts you.

2.1 The Creative Role of Play

Lest you think play is just for children – think again! Play is for people of all ages. Jill Vialet has transformed recess in US schools nationwide since she launched PlayWorks 25 years ago, and her new book, *Why Play Works: Big Changes Start Small*, is a remarkable – and dynamic – treatise on the value of play for social connections, community building, problem-solving, inclusion, and so much more.

There are many parallels in Vialet's book between the world of children and our world as older adults. Imagination and curiosity are key to a vital long life. Once we lose the creative impulse, it's time to pack up your gear and leave the field. As many readers know, I love to quote, George Bernard Shaw, who said, "We don't stop playing because we get old. We get old because we stop playing."

2.2 Role of Imagination

As a society that traditionally fetishes an unrealistic conceptualization of innovation as creating de novo, it is worth remembering that every human-made thing on Earth started in someone's imaginary world.

JK Rowling in her June 5th, Harvard commencement address, "The Fringe Benefits of Failure, and the Importance of Imagination,"[19] extolled imagination not just for storytelling as one might expect from such a successful author but rather as a tool for transformative social change. She said, "Though I personally will defend the value of bedtime stories to my last gasp, I have learned to value imagination in a much broader sense. Imagination is key to examining possibilities to drive innovation. Imagination is the uniquely human capacity to envision that which is not, and therefore the fount of all invention and innovation."

2.3 The Role of Resilience

Older adults are also extraordinarily resilient. Operationalizing innovation takes experience, skill, and risk, and we have found seniors to be less risk averse than young people when faced with uncertainty. They have tried and failed at many things in their lifetimes and often know when to let go of an idea and pivot to another way to achieve their desired goals. Resilience is one of their greatest assets. It's not a dogged persistence to reach their goal no matter what. Rather, it's a unique crisis competence acquired through a lifetime of surviving—even thriving through—both

[19] https://news.harvard.edu/gazette/story/2008/06/text-of-j-k-rowling-speech/.

positive and negative experiences. They have grit and determination and the ability to pick themselves up and begin again if they stumble along the way.

The world-renown French artist, Henri Matisse (1869–1953), is a superb example of this. Throughout his long and productive 84-year career, he continually reworked his life as a work of art, embracing at least six different styles of painting, sculpture, paper cutouts, illustrated books, architectural design, and stained-glass windows.

And all of this happened after Matisse had launched his first career as a lawyer. Yes, a lawyer! When Matisse was 18, his father encouraged him to study law in Paris. For 2 years, Matisse did brilliantly even though he found law boring and totally uninspiring, and then he was struck down with appendicitis. To ease his convalescence, his mother brought him a box of art supplies, and his life was transformed.

He began painting still lifes and landscapes in the traditional Flemish style but quickly transitioned to Impressionism, painting his first masterpiece, The Dinner Table, in 1897. When the French traditionalists denounced it, Matisse briefly turned to sculpture. Though he did not pursue this for long, sculpture continued to influence form in his painting for the rest of his life.

Next, influenced by Paul Cézanne and Gauguin, he embraced Modernism. From there, he dabbled in Pointillism and Naturalism. In 1905, he was considered the leader of the Fauve painting movement.

Over the next 36 years, he created hundreds of masterpieces until he was diagnosed with cancer in 1941, and the surgery necessitated he use a wheelchair. Physically diminished, his creativity soared to new heights. He called what was to be his last 14 years, "a second life." He began creating his vibrant, cut paper collages and described the process as "painting with scissors."

Matisse's final reinvention in 1951 was to design the interior and the stained-glass windows for the Chapel of the Rosary in Vence, France. His resilience was remarkable and an inspiration to help each of us understand how we are all innovators, capable of bold invention, making a difference, and having the potential to make our lives a work of art.

3 Three Twenty-First-Century Social Innovators: Creating Green Businesses at Age 50+ and Making a Big Social Impact

Arlene Blum, a 75-year-old biochemist and world-class mountaineer from Berkeley, California, is leading a charge against the use of toxic chemicals, such as Tris (TDCPP) and PFAS in consumer and other commercial products.

In 1978, Blum had led the first all-female American team to reach the 26,500-foot summit of Nepal's Annapurna I, one of the highest and most difficult peaks in the Himalayas. This was also the first successful American ascent and only the fifth ascent overall. Historically, Annapurna has proven to be one of the most dangerous and least climbed of the 8000-meter peaks. By 2018, only 191 people had reached the summit, and 63 climbers had been killed attempting it.[20]

Thirty years later, in 2007, Blum was still leading mountain climbing expeditions when she launched at age 62 the nonprofit Green Science Policy Institute from her kitchen table in Berkeley to do something to reduce the use of toxic chemicals in industry. She recruited an intergenerational team of experts, to help activate her mission to facilitate responsible use of chemicals to protect human and ecological health.

Their latest project is PFAS Central, a partnership between the Green Science Policy Institute and the Social Science Environmental Health Research Institute at Northeastern University, in Boston Massachusetts, to provide healthy alternatives to perfluorocarbons – a group of "forever" chemical compounds that steadily accumulate in all levels of the food chain and can never be broken down by our bodies or the external environment. Working with an international coalition, the institute has stopped the use of hundreds of millions of pounds of potentially toxic flame-retardant chemicals in consumer household electronics and other products around the world.

I asked Blum what advice she'd offer other older entrepreneurs who'd like to enter the environmental enterprise arena. "There's much work to be done," she said, "and I always recommend the same advice I use for climbing a mountain." Her tips:

- *Define your goals.* Determine what you want to do and visualize the summit.
- *Prepare for the expedition.* Before launching an enterprise, get your finances in order.
- *Select a winning team.* Choose people you'd trust with your life.
- *Be passionate.* Make certain you have the enthusiasm, persistence, and the physical, mental, and emotional fitness required for the long climb.

Today, 75-year-old Blum continues to reach for the summit of a healthier world to benefit all.

Another toxic avenger, **Paul Tasner**, took a leap of faith and launched his first business, PulpWorks, at age 66 after a 35-year career managing supply chains at large corporations. Appalled by the prediction that by mid-century, the oceans will contain more plastic waste than fish, ton for ton,[21] he purposefully set out to do something about it. However, he knew that though he had a lot of traditional business experience, there was much he needed to learn about environmental science, so he reached out to team up with Elena Olivari, aged 46. She had a brilliant background in Green Architecture and Design, Sustainability and Social Corporate Responsibility and, fortuitously, had recently decided to look for a new job with a

[20] https://www.adventure-journal.com/2019/12/historical-badass-climber-vera-komarkova/

[21] https://www.nationalgeographic.com/news/2017/07/plastic-produced-recycling-waste-ocean-trash-debris-environment/#close.

greater sense of purpose. Bridging generations, she and Paul joined forces as Co-founders of PulpWorks to tackle this worldwide plastic pollution crisis.

Paul and Elena began developing products from actual garbage to replace toxic plastic packaging – such as PVC (polyvinyl chloride) blister packs and Styrofoam (expanded polystyrene) – with compostable/biodegradable, 100% waste-based, molded fiber products. One example, their nontoxic, Karta-Pack,™ is made of 100 percent recycled pulp and paper, eliminating the need for incineration and recycling. PulpWorks and its intergenerational co-founders have received more than 20 national and international environmental innovation awards[22] as they continue to "Mold a Better World."

Judi Henderson-Townsend became an accidental entrepreneur after she was laid off after almost 30 years in the tech world and could not find another job. An online Craigslist search for Tina Turner concert tickets led her to her first mannequin (she'd always wanted one to decorate her garden) and Mannequin Madness was born. When she learned that it was normal for retailers to throw unwanted mannequins in the trash if they were closing or remodeling, she decided to offer them an alternative: free mannequin recycling. This would simultaneously provide her with a free source of mannequins that she could recycle, refurbish, upcycle, rent and sell, and thereby save retailer money on waste disposal fees. Her story of creating and scaling Mannequin Madness into a million-dollar mannequin liquidation business (with a young partner who helped her create on online presence where they do 80% of their business) is remarkable – and fun! Moreover, the business unexpectedly won an award from the US Environmental Protection Agency for annually saving 100,000 pounds of un-biodegradable waste from landfills.

In my recent conversation with Judi, she said, "You know I never could have done this when I was younger. I would have been too embarrassed to create something so far off the grid. Now, I glory in the unexpected treasures I find every day. Not everyone can say they love their work as much as I do, and making an environmental difference is just the icing on the cake!"

4 What Do These Social Innovation Entrepreneurs Need?

Working in an isolated garage is not enough. Today's senior entrepreneurs are striving and surviving against all odds and with minimal support. If they are succeeding in these circumstances, just imagine what they could be doing and the impact they would be creating with supportive ecosystems. They need local and global action tanks – not think tanks – composed of key, cross-sector, entrepreneurial thought leaders with the power to make comprehensive change happen, especially regarding education, advocacy, policy, research, and financial support.

50+ individuals need programs to help them translate their experience and expertise into successful new business startups. Corporations need programs to

[22] http://www.pulpworksinc.com/awards.html.

help them recruit, reengage, retain, and recycle the knowledge of older workers, and governments need programs to help them research and develop new policies to support the new longer working lives reality of the 50+ to ensure post-COVID economic recovery.

More local, easily accessible, multigenerational, cross-sectional innovation centers need to be developed to host and activate a critical mass of thinkers and doers to foster an energetic exchange of ideas.

More financial institutions need to see senior entrepreneurs (the largest and most successful entrepreneurship group worldwide) as a new market opportunity ripe for investment to boost economic development locally and globally.

As a society, we need to create more customizable programs to activate cross-generational experience and more technology applications to support and sustain a 50+ entrepreneurship ecosystem.

Understanding the value and devising ways to unleash the potential of senior/experienced individuals represent a phenomenal opportunity for entrepreneurs of any age and from any sector, and the ROI is huge. Today's senior entrepreneurs are like a rocket fuel, igniting new innovation worldwide.

We can ignore this natural resource and merely attempt to restore a pre-COVID-19 "normal" economy, or we can seize society's urgent need to identify economic innovations to create a sustainable post-COVID-19 recovery by developing a vibrant silver economy driven by the human capital of older adults. If we choose to unleash the potential of older adults' energy, experience, and expertise to accelerate social, economic, and environmental change, it's imperative we amplify the insights of practical visionaries such as António Guterres, Secretary-General of the United Nations, who said at the 2019 United Nations International Day of Older Persons, "We must find more ways to help older individuals continue to contribute. They are key to achieving our Sustainable Development Goals!"

Elizabeth Isele Founder and CEO, The Global Institute for Experienced Entrepreneurship, Senior Fellow in Social Innovation, and Entrepreneur in Residence, Babson College, Wellesley, MA, and Associate Fellow in Finance and Global Economics, the Royal Institute of International Affairs: Chatham House.

Recognized globally as a pioneering senior and intergenerational entrepreneurship expert, Elizabeth is leading a movement to transform the culture of aging and retirement. Her passion to ignite an Experienced Economy™ by unleashing the potential of 50+ year-olds to drive economic markets and generate social and environmental impact is grounded in data and metrics. Elizabeth is part of the experienced economy. As a septuagenarian, after a distinguished career as an award-winning editor and author, she founded The Global Institute for Experienced Entrepreneurship, a comprehensive, cross-sector (business, government, education, and research) ecosystem to catalyze and support intergenerational experience in the Future of Work, Entrepreneurship, and Artificial Intelligence. Elizabeth has been a trusted advisor for the Obama White House and continues to be for Congress, the European Union (EU), the US State Department, Vint Cerf's i4J (Innovation for Jobs), the Clinton Global Initiative, the Organization for Economic Cooperation and Development (OECD), and the W-20, G-7 and G-20 world forums, as well as many other governments, universities, private sector corporations, and NGOs worldwide.

Empowerment and Care: Made with Love in Berlin and Nepal: Let's Create a Better Life for Children in Nepal!

Birgit Baier and Marcus Pauli

Namaste, and thanks for your time. The intention of this article is to share some of our experience on **why** we, as a nonprofit organization, decided to embark on social innovation, our motivation, why we believe it is important, what it takes, and some of the challenges we faced. Enjoy and, hopefully, we can inspire you as well.

It all started in May of 2015. After not having visited Kathmandu for 29 years, I arrived the day after the second earthquake. Initially, I wanted solely to fulfill my sister's last wish: to send her ashes to nirvana in the sacred Bagmati River, which I did, but this is another story. As you can imagine, it was devastating to see all the damage and pain the earthquake had caused. Naturally, the engagement and fundraising started straight away on the very same day. With the donations, an orphanage that had found shelter in a temporary camp was supported. Being back home in Berlin, I realized that the initial setup was not scalable. In 2018, the ***I*** turned into a ***We,*** which turned into a nonprofit organization called bbuildsupnepal e.V. registered in Berlin and acting internationally.

Our mission is not only to help build up Nepal after the earthquake but to create a better life for children and women at the same time. From the very beginning, our goal was to help people help themselves; to **create empowerment** and **not dependencies**. For children, we follow another approach. We support their well-being, education, and reintegration into families or society and help create a safe future for children to thrive. We follow a multi-program approach with seven key areas: street children, awareness, empowerment (parents, females, communities), education, environment, health, and protection.

I knew from my experience setting up the UNICEF fundraising department in China* that such an endeavor would take some time to take off. But as a small nonprofit organization whose brand was yet unknown and everyone is working pro bono, this was even more challenging. So we adapted. First, we ensured that the right

B. Baier (✉) · M. Pauli
bbuildsupnepal e.V, Berlin, Germany
e-mail: birgit@bbuildsupnepal.com; Marcus@bbuildsupnepal.com

A. Ruthemeier et al. (eds.), *The Global Impact of Social Innovation*, Management for Professionals, https://doi.org/10.1007/978-3-031-03849-5_14

infrastructure was in place (website, communication, social media, etc.) to guarantee transparency and create a platform to operate on. We started raising funds, mainly through friends and family at the beginning, in combination with me telling the story of why I ended up in Nepal, what I saw, and each of us explaining multiple times why we, as an organization, support programs in Nepal and not in our respective countries. For a start, this was acceptable, but as one can imagine, it does not scale in the long run. And even worse, it's not efficient. Since we were determined, we again adapted and opened up to another possibility quickly.

We have come to understand that when we want to achieve empowerment and positive change that social innovation is critical for us to be able to meet the scale of global challenges, increase our impact, and stay relevant (Bond, 2016). But we are also humble enough to understand that we need to take small steps to see what works and what doesn't, to fail fast and improve quickly. And now we know that our first ideas were a bit off if I might say so. More will follow on this later.

Social innovation for us is about creating ideas for change. But is this even possible as a nonprofit organization? Yes, it is, but with a but. The approach needs to be split into two streams, with the corresponding mindset and setup. As a nonprofit organization, we are looking for problems to be solved with the funds we raise and the programs we run (Stream 1). At the same time, we are developing solutions to solve a problem at hand using our skills in various fields, our access to knowledge, a large network, and opportunities and partners we identify in Nepal (Stream 2). In our case, this translates into starting with incremental innovation. We aim to **create and implement new solutions or products** to improve the welfare and well-being of human beings and communities. For example, that may imply a concept, process, and distribution, with the ultimate aim of children and female empowerment. From the very beginning, co-creation with our local Nepalese partners is essential and a must. It is also important to us to link the socio-ethical value we create to our organization's goals, mission, and vision.

1 First Try

We started brainstorming early on what we could be *doing*, something that helps the environment, reduces pollution, creates jobs, and generates money that we can use for our programs. One idea seemed obvious: upcycling of oxygen cylinders. “Let's collect the oxygen containers that are dumped at Mount Everest excursions. Did you know that it is a real problem?” “No, I didn't. I know that Mount Everest is labeled as the ‘highest garbage dump.’ According to National Geographic, each climber spends weeks on the mountain, needing to adjust to the altitude at a series of camps before advancing to the summit. During that time, each person generates, on average, **around eight kilograms of trash**, and the majority of this waste gets left on the mountain.” “I have a great idea. We can hire Sherpas to collect empty containers and have them bring them down. They make money and we upcycle the containers in Nepal. By doing so we create jobs, can sell the goods, and generate funds for our nonprofit. At the same time, we help clean up Everest and do something against pollution. Look, I have the concept worked out. " "Great idea. I will talk to someone I know in Nepal to see how we can execute the idea." The idea is still great, but our approach was naive. The concept was developed in Germany based on desk research and a creative spirit. Both are important, but we failed to include someone who knows about Mount Everest and how things work in Nepal too:

(a) Helps steer the ideation process in the right direction
(b) Buries the concept or
(c) Validates it to be modified or it finds its place on the bag lock

Not to mention the logistics and not knowing about the infrastructure on the ground. There's nothing wrong with aiming high, but there needs to be a solid chance to be successful with whatever the outcome is. After the concept was validated by Arjun Magar, our friend, and ex-Sherpa, it became obvious that it was not as easy as we thought. To top it off, it is dangerous for the Sherpas, and there are already organizations taking care of it.

First lessons learned: Putting someone in a dangerous situation is not something we ever want to do, and therefore close alignment with our partners is vital:

- **Co-creation** and **early involvement are essential** to ideate, create, and validate.
- **Grasp** and **validate complexity**. This experience helped us to understand that there is **more** complexity than we anticipated. We learned that social innovation is **crosscutting** and applies to **more areas** of work than program fundraising or campaign design. Our experience backs what is described by Bond "Introduction to Social Innovation."
- **Pay attention to the infrastructure**. We will use **Nepal as the place to build** and therefore have to take the **local infrastructure** into account**.**

Second lessons learned: We need to **define parameters to operate** within. Here are a few:

- **Incremental, breakthrough, or transformational?** We start with incremental innovation and progress to substantial (breakthrough) or radical (transformational) depending on success and our maturity. The degree of newness can be "borrowed" from other sectors.
- **Define your risk level**. Our innovation has to have a relatively low risk.
- **Know your target market and validate opportunities** like you would for any other business.
- **Define your target audience**.
- **Specify the execution level**. Whatever we design needs to be easy to execute with the limited workforce available.
- **Identify barriers**. We need to factor language barriers and local Nepalese infrastructure into consideration.
- **Clarify risk levels.** Nothing we do will jeopardize our "normal NGO work."
- **Success factor definition**. Success should be measurable.

- **Work out a logistic strategy**. Distribution has to be simple and managed by us on our existing website to be linked to our values, programs, and stories.
- **Prototype, Smoke test, or pilo**t. We start with a pilot (once the prototype is validated) that is seen as the basis for more innovations ahead.

2 First Product: The Pilot

We started talking to and connecting with people who had worked and produced in Nepal or knew someone who had. Meetings were arranged, and interesting contacts were made, including a person working with a cashmere factory that produces things for him in Nepal. This was a great start, and we were very interested in meeting and exploring. This contact led to the next, a person who gave insight and an introduction to a local jewelry production company that works with survivors of human trafficking and people without hearing, people who don't have easy access to work and often are still stigmatized.

A trip to Nepal was planned, and we made sure that contact was established beforehand. First conversations were held to be well-prepared for our first meeting. We also learned that the trafficked women worked in a circus in India. This is how it all started many years ago.

For us, the connection was very helpful because we didn't have any, to begin with. We wanted to explore if and how we could create extra work to secure income, inspire people to do something new, support local businesses, create awareness about trafficking, and decrease stigma at the same time. In short, help to build something new and support, "Made in Nepal". Empowerment on multiple levels!

In parallel, I met with Caroline Schwarz in Berlin, a dear friend of mine. She was born into the fifth generation of a German jewelry manufacturer. Being a jewelry designer herself, the art of creating beauty is her second nature. We were lucky as there was no need to convince her to collaborate with us because supporting, empowering, and giving back is a vital part of her life.

We put our heads together and thought about what would work and appeal to our target audience, a foundation for our brainstorming and a briefing that I could take with me to Nepal. The idea of Lucky Wishing Bracelets was born.

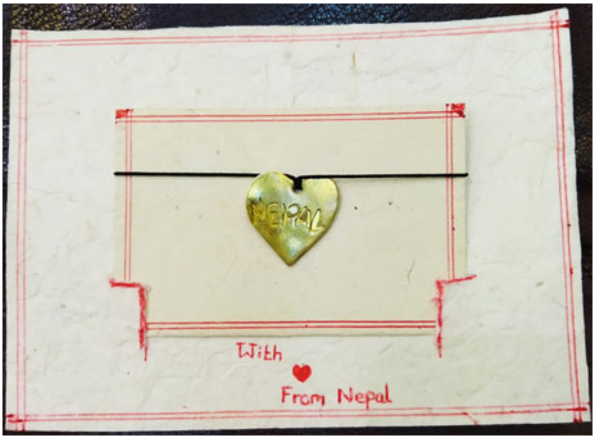
Concept idea: a simple bracelet that is tied to the wrist and provided with wishes. The moment it falls off, the wishes will come true. This mechanism is already known by many people as it already exists.

Requirements: easy to produce, local material, creates work (production, paper, printer), not too valuable so that it doesn't annoy people when it falls off, low-cost risks for us, easy to reproduce, production isn't harmful to the environment, and final product to be sold below €10.

In our first WhatsApp conversations, we discussed the idea of gathering preliminary feedback and agreed to talk more about it when we met in person. In Berlin, first sketches, patterns, and a simple briefing were created for me to take to Kathmandu. The preliminary work was done.

In Kathmandu, we sat together to discuss ideas and options like engraving or stamping, the availability of materials, and the production process. What could be done, what is feasible, what could an accompanying card look like, etc.? We called Caroline via WhatsApp to join the session, which worked very well. Everything took its course: we learned that the material for the ribbon that is available in Nepal is not produced there. We agreed that it is OK to use what is available on the market. A lot of cotton is imported from India due to a lack of infrastructure. The same is true for synthetic fabric, which is frequently sourced from China. At first, we were considering silk, but that would have been too expensive for our pilot. We fine-tuned the concept and shared the four designs Caroline developed with the team in Nepal.

Before we split ways, we agreed on the next steps and timing. And though alignment meetings and timelines were a challenge as they shifted multiple times, our first prototype was announced!

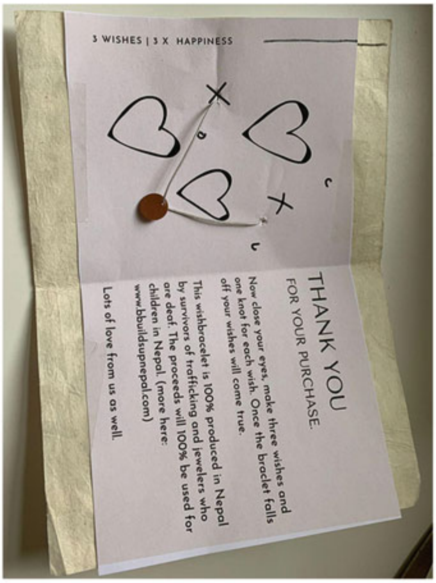


We eagerly waited and received the first samples from Nepal via WhatsApp. They were not exactly what we discussed and consented to. We politely agreed to keep this design for a later stage as it turned out to be a different concept.

We shared that we might reach a bigger audience with the other concepts and design, which would result in more people buying, which would mean more work, etc. The team agreed to try it out, and the first samples arrived. We were so joyful to open the delivery, though that joy didn't last very long.

Do you know the feeling when you **anxiously** wait for something, it finally arrives, you open the box, and what you see is close to what you wanted, but then not really. This is exactly what happened to us. The material wasn't suitable, and the edges of the charms were too sharp. We discussed our feedback via WhatsApp and created a prototype with the paper sample (lovely paper!) we received, reinforcing and testing the concept.

After a few more rounds, all was great and the following picture reached us:



By this time, we were all totally under the spell of the process. It's an indescribable feeling to see how something emerges from an idea: Berlin/Kathmandu/Berlin. A collaboration between people who are in different places in the world and who don't know each other, and yet it works, a collaboration, enthusiasm, and an understanding of an idea that has only one goal: to make the people who buy the bracelets happy.

Without too much detail, it is worth mentioning that our shipment was delayed, which was quite stressful as we had financially committed to a booth at a Christmas market. In the end, it all worked out. When the delivery arrived, a friend drove me to the DHL Hub, Leipzig, 175 km away from my home. Or shall we say 2 hours one way? Most importantly, we made it in time for the Christmas market, and the cards and the bracelets are wonderful.

We paid €5 for the first order. The second order was without any pain, and the price was reduced to €3,50 as the stamps for the four designs had already been produced.

Result: We successfully produce "wishing bracelets" and sell them directly online via our website, Facebook, and Instagram. We have received positive feedback and people like them. Our sales are still in manageable numbers, but that is quite okay because, for the time being, I am the fulfillment and operational center as well. And remember, this was meant to be our test pilot, including an online shop that was created with the software solution WordPress offers. Through our innovations, we support local production, printing, and paper manufacturers. All proceeds are used to help create a better life for children in Nepal. *Lastly, we provide people who purchase the cards the opportunity to engage (in)directly in social change.*

Third lessons learned:

- **Stay focused.** Every culture has different styles, ways of working, and communicating. Even if we are aware of it and have experienced, it is important to remember that from time to time keeping the purpose and end goal in mind.
- **It is important to note public holidays and labor law**. When interacting with other countries like in our case with Nepal as there are many festivals when work stands still. Just to name two big ones: Dashain 15 days, Tihar or Diwali 4–5 days.
- **Direct interaction with partners is important.** It was very helpful to have a "connector" who has experience in working with companies outside Nepal and can easily articulate in English. Regardless it is always better to have direct contact to ensure transparency, to be able to manage and steer processes directly. If there are language barriers, organize a translator, or do what we sometimes do: talk to the Nepal embassy to see if they can help or recommend someone.
- **Check out the production facilities when you are on the ground** – both existing ones or when you design a new one.
- **Don't start with a tide schedule**. We thought that we had plenty of time but didn't factor holidays and infrastructure in.
- **Be generous with alignment time**. Especially when you start something new. In our case, the follow-up order was a smooth process.
- **Be patient.**
- **Be patient**.
- Be happy with the result and proud of the achievement, no matter how small, all counts.

3 The Way Forward

We matured as an organization, gained valuable experience, and made new connections. Social innovation is and will remain a crucial part of our work. Going forward, we have identified two partners that share similar visions and ambitions to ours and want to explore social innovation going forward. Still, at an early stage, the first discussions and meetings took place this October in Kathmandu when I visited Nepal after almost 2 years thanks to COVID-19.

3.1 Voice of Children (VOC): The Paper Approach

"Voice of Children (VOC) is a non-government organization working and advocating for street and sexually abused children of Nepal. VOC aims to prevent further increase in the number of street children by working with vulnerable families living in urban areas; slums and low-rent areas to empower them and spread awareness as many children come to the street from such families. As VOC believes that family is most important for children, it emphasizes on social reintegration of the children living/working in the street by improving their life skills & capacity for sustainability. It also focuses to protect children from any form of sexual abuse by raising awareness on child sexual abuse and offering legal, social and psychological support to sexually abused children & their families." VOC has been our partner since 2020, and we are incredibly proud of this collaboration. In a recent discussion with Krishna Thapa (President), I mentioned that a lot of people in Germany love the locally produced paper, and I was wondering if there was anything we could do together. We spoke about our wishing bracelets and that we sell them online, a distribution channel we are very happy to expand. I learned that paperwork is part of the work with street children in their drop-in/socialization center and is used as a therapeutic tool. Engaging the children in paper handicrafts helps them to learn to focus again, which is vital for being able to follow a routine, learn, and go to school again. Therefore, it is an important element in their transformation.

3.2 Entire Power in Social Action (EPSA) Women Skill Training Center and Shelter Home: Innovations as a New Income Source

EPSA is an NGO and nonprofit organization. "The goal is to empower and assist disabled women. It aim is to create an environment in which disabled women can enjoy a greater standard of living free of discrimination and poverty, which is so often the case." Awareness, capacity building, and vocational activities for economic and social empowerment are their focus. I had the good fortune to meet with Sangita Pant the foundress and president of the organization. She was introduced to me by a lovely couple that shared the same guesthouse and sat right next to me. "Do you sit alone?" "Yes." "Do you want to join us for breakfast?" We started talking, me about bbuildsupnepal, Nina and Jeff about an incredible woman they have supported for some time. We arranged for me to meet her in person for breakfast the day after. She shared her incredible (!) story. A story about discrimination, setbacks, pain, and her fantastic vision. A story of a woman who experienced unfairness and injustice because of her disability. Since the existence of her organization, over 5.000 women have been empowered and trained! I was lucky to have visited their facilities and shelter for women and could see everything first hand. COVID-19 had a big impact on their income, so they are now in need of alternative sources of income-generating work.

We are currently in the process of evaluating what we can do, using a simple framework to help internal discussions and define the next steps without losing our focus.

Excerpt Inspired by Bond, 2016

Approach	Idea	Goal	Status and next steps	Risk	KPI
Education/ integration Use of locally produced paper	Cards, notebooks, blocks, anything flat that is easy to ship Note: This is no child labor	Helping street children to craft items out of paper will strengthen their ability to focus and progress their positive socialization. At the same time, they will experience the result which they can be proud of and learn a new skill. Trainers can be hired to teach skills in areas like bookbinding. Notebooks will also include artwork – painting, drawing – produced by children	Ideas are already brainstormed with VOC, samples are in the makes to be shared with us; financial aspects, distribution strategy	Low	TBD
Equal rights/ empowerment/ ending of poverty Service or product development Programs and initiatives that achieve more impact	Ideate to generate new revenue sources We look at 2 ways: - Making use of existing infrastructure and innovating within this space - Explore new ways and what is needed: New tools, skills, infrastructure, etc.	Disability is still a stigma in Nepal and people are forced to experience it as well as discrimination, lack of income, lack of education, etc. The goal is to join forces to ● Help empower more women with disabilities to stand as advocates for equal rights ● Ensure that more women with disabilities are self-sufficient and earning a living	Co-creation session with Nepal and maybe Switzerland	TBD	TBD

(continued)

Approach	Idea	Goal	Status and next steps	Risk	KPI
		● Provide basic education to illiterate disabled women ● To raise awareness to improve one's standing in society			
Inclusion/ awareness Engagement for meaningful interactions	Empowering people to spot discrimination; long-term help change employment law				. . . .

The framework above helps us to collect all the ideas, opportunities, and people we come across. It allows us to validate and see if we are still on track and most importantly if it allows us to still solve problems with the funds we raise and the programs we run at the same time. Over time, we are open to hiring people if our innovation requires us to do so, which would be wonderful.

4 Conclusion

We hope you enjoyed our little excursion into why we do what we do and the approach we are taking. Being a small organization doesn't stop us from having big ambitions. But we have to be realistic to ensure that we are also able to deliver, especially when we raise hope. It is important to be open, to listen and talk, to engage, and to be agile in your innovation process and purpose without losing your balanced business sense. Believe in your gut, observe, and check if you are aligned with the right team and partners. For us, these are organizations or people who follow the same goals, have the same values, and can ensure transparency and that their business practices are compliant. It might not always be easy, but who says that not being easy can't be fun?

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*under supervision of UNICEF Nov 2002 - Sep 2003
Source: VOC. https://www.voiceofchildren.org.np
EPSA - information material that has been shared with us / http://epsanepal.org/new/

Birgit Baier is a business nomad with social engagement at her heart. Transformation, cultural and strategic change, digitization is her daily bread. 25+ years of leadership in multiple transforming and transformative industries, immersion into the cultures of 20 countries and 3 continents and no fear of new challenges. That's Birgit, and she draws on this experience to create solutions, products, services and experiences, strategic innovation for international customers, and social causes. Since she is 11 years old, she is engaged in social projects: back then a school project to teach German to refugees all the way to setting up the UNICEF fundraising department in China. Since 2015 she is foundress and Chairperson from bbuildsupnepal e.V. to help create a better future for children and women in Nepal.

The Importance of Social Capital in the VUCA Environment

Werner Krings

1 Introduction

Whether we start with a new venture, progress in a corporate career, or engage in non-governmental organizational activities, we must continuously rethink and adjust our specific approach and business model. Our decisions constantly face areas of tension since business and life do not always proceed as precisely as we might have planned or thought they would. Disruptive changes happen regularly in the *VUCA* (volatility, uncertainty, complexity, ambiguity) world (Rodriguez & Rodriguez, 2015). These changes are essential for us to remain agile and competitive in volatile global economies and stay proactive in uncertain times such as the current pandemic situation and political realignment in connection with Brexit. For example, we had to rapidly adjust to the *complex* lockdown regulations and resolve the *ambiguity* of the risks and opportunities to embrace the vaccine. The same is true for significant decisions, e.g., should we refrain from or engage in new realities like cryptocurrencies and drastic digitalization? According to the Disruption Index of Alix Partners in Munich, Germany, about 85% of the interviewed managers estimate that "disruptions become primary and continuous challenges for economy and society leading to significant changes of the supervisory board work" (Alix Partners, 2021, p. 10).

In today's interactive information and communication era, the increasing level of interconnectivity leads, on the one hand, to the improvement of our business processes and performance. Nevertheless, on the other hand, the growing complexity comes at a considerable price. Though digital technologies and the progress in the development of the vaccine brought some cherished relief from our traumatic experiences with COVID-19, the future uncertainties currently predominate our economies and personal lives. The pandemic with the significant death rate, travel

W. Krings (✉)
Framingham State University, Boston, MA, USA
e-mail: wkrings@framingham.edu

A. Ruthemeier et al. (eds.), *The Global Impact of Social Innovation*, Management for Professionals, https://doi.org/10.1007/978-3-031-03849-5_15

ban, social distancing, and temporary loss of liberties becomes a deep-rooted event in the millennials' minds, similarly to the dramatic political events, e.g., the downfall of the iron curtain that shaped the baby boomer generation in Europe at the beginning of the nineties (Howe & Strauss, 2007).

Though the G-7 countries (Canada, France, Germany, Italy, Japan, the UK and the USA) have viable health systems and supply chains, we all experienced the effects of coercive isolation. Being confined to the space of our homes without contacts to close family members, colleagues, and friends can pose, over time, significant mental challenges and lead to a drop in productivity. The fear of the unknown can cause temporary agony and deplete our vitality. It forces us to build resilience if we want to progress with our lives. Developing a vision to look beyond the COVID-19 crisis and identifying opportunities instead of being paralyzed by the catastrophic information supported us to take action and master the corona crisis (Krings, 2020a). After lifting the rigid lockdown regulations, recent celebrations in major cities in Europe and the USA demonstrated that digital or mobile technologies could not entirely replace the need for real face-to-face or human proximity.

Suppose we reflect on our personal and business life for which we had sufficient time in the past few months. In that case, we know how important it is to fall back on social networks, whether it is to seek advice in significant personal or business decision-making. To cope with life and business challenges, we often rely on tacit knowledge and explicit concepts. The social capital concept gains particular importance by optimizing how we connect personally and develop existing and new business. We are surprised about the serendipitous encounters with people who somehow relate to our sphere of influence in personal life. Thus, social capital can be a door opener and result in swifter progress.

Recent (post-)doctoral research applied in the business-to-business arena looked at accelerating marketing and sales processes in the global software industry by identifying the relevant set of digital and social media, resulting in higher performance, i.e., swifter and recurring income streams. Thereby, social capital can be relevant, especially in identifying and gaining access to contacts part of the buying group. This book chapter will provide, besides real cases, quantitative evidence demonstrating how awareness of this concept might benefit the readers.

2 The Power of Social Capital

The underlying idea of social capital is to build and leverage contacts for various purposes. Stanley Milgram, an American social psychologist, originated the concept that if we connected to just six other connections in a small world setting, we might gain access to any person of interest. This concept, also coined as "six degrees of separation," has gained particular importance in the social networking theory (Morse, 2003; Watts, 2003). It invites how we can identify these critical contacts, resulting in a faster new or existing business. The author's doctoral research identified the underlying phases of the B2B business development process applicable in various industries and the mix of traditional and digital/social media that

Fig. 1 The B2B business development process phases (I–IV) in various industries

optimally attribute to these phases by incorporating social capital as a business enabler in digital/social media usage. The B2B business development process differentiates the four stages depicted below (Krings et al., 2021) (Fig. 1).

The power of social capital lies in accumulating contacts critical to abbreviate and improve B2B business processes ultimately by trust and mutual values and mitigates the risk of failure (Baehr & Alex-Brown, 2010; Van Deth, 2003). We often seek support to answer complex questions, e.g., whether it is safe to take a particular COVID-19 vaccine or whether a career change or additional executive education will be of value. Thereby, we primarily rely on traditional, i.e., social capital consisting of "relationships that will have a significant impact on [our] life over time" (Fernandez & Velasquez, 2021). These contacts are our mentors or supporters, i.e., primary care physicians, family members, close friends, business colleagues or experts, contacts we consult, and trust toward critical life and business decisions. In contrast, we neglect the opinions of vendors who are not credible or qualified to provide COVID-19 training but leverage public fear, unbelief, and doubt to advance their business. In this book chapter, we consciously eliminate irrelevant noise and focus on win-win relationships. The author defines *human contacts* as *traditional social capital* and *social networking site contacts* as *technology-leveraged digital capital*. Social capital research is abundant in the literature. For example, Lin (2002, p. 30) defines it as an "investment in social relations with expected return" from a return-on-relationship perspective.

Similarly, social capital, also referred to as goodwill, is established in social networks, resulting in sharing information, maintaining knowledge, and strengthening personal and business relationships (Adler & Kwon, 2002; Coleman, 1988). Social capital also includes the embedded resources in social networks accessible or mobilized by social ties, mutual trust, and shared values (Lin, 2002, 2008; Chiu et al., 2006). For example, B2B business development, marketing, and sales executives reach vital contacts more efficiently through well-established social networks. Moreover, endorsements of key contacts again impact their reputation (Kietzmann et al., 2011). The potential impact of accumulated social capital can be a double-edged sword: benefits can be improved information access and quality (Adler & Kwon, 2002). But, on the other hand, risks can lie in strong ties that discourage new members from joining social networks (Li et al., 2013).

Consequently, it is primarily not about the size of social capital but its quality. Accordingly, the massive amount of digital capital, i.e., LinkedIn or Xing contacts, can be a disadvantage assuming that most contacts are 'noise' or irrelevant to critical business or life decisions. However, this statement is debatable, as the author will demonstrate.

3 Related Concepts

Moreover, the Strength of Weak Ties theory (Granovetter, 1983) might, for example, reinforce the effectiveness of digital/social media business usage in B2B business development and thereby sustain the concept of social capital. In particular, the inherent contact authority and intensity might increase the quantity and quality of sales opportunities within a shorter time frame. However, in pre-pandemic times scholars were divided whether the extensive use of digital technologies might come at the expense of face-to-face interactions (Schiffrin et al., 2010). Some argued that digital technologies usually would not substitute face-to-face interactions, critical in the final business development and subsequent sales phase. Video technologies like Microsoft Teams or Zoom changed this argument dramatically in 2020. Still, a reversed trend is becoming evident in the ease of the lockdown phase because of the increasing online meeting fatigue.

Facets of social capital theory (networks, trust, norms, and values) govern social interactions in human and virtual communities and facilitate less risky and fast-moving B2B transactions (Granovetter, 1983; Carvalho & Fernandes, 2018). Looking back into the lockdown phase, we have become aware of how global networks changed the dynamics of day-to-day life overnight. Noteworthy were the rigid norms from introducing a travel ban, practicing social distancing, and wearing masks. In addition, the threat of the global pandemic changed the paradigm we conducted business, overthrew the unstoppable US growth economy, and led to numerous disruptive innovations such as adjusted business models. For example, the choice between multiple COVID-19 vaccines, a solution that seemed a year ago, is still beyond reach.

Scholars noticed a diverse impact of social capital. For example, Ahearne et al. (2014) highlighted its influence on reputation, Krings (2020b) recognized its mediator impact on business performance, and Bartscher et al. (2021) referred to pandemic-related health outcomes. Engelen et al. (2016) perceived building social capital or one's network as vitally important for career development and strategic decision-making and performance in top management. Intensive usage of digital/social media can positively affect the accumulation of social capital by strengthening the sense of belonging and self-respect (Bolton et al., 2013; Ellison et al., 2007). Agnihotri et al. (2016, p. 172) noted that social capital stimulated the "interact[ion], engage[ment] and establish[ment] of relationships," whereby the existing social network supports initiating relationships successfully (Lin, 2008). Moreover, the author assumes that social capital as relational capital might facilitate the link between B2B business development and new business generation (Kohtamäki et al., 2013; Rodriguez et al., 2012; Baehr & Alex-Brown, 2010). Consequently, this concept deserves particular attention in combination with digital/social media business usage.

4 Digital Capital: The Extended Concept of Social Capital

Recent research about designing disruptive innovative business schools with leading entrepreneurs, professors, and students revealed the following definition. Social capital represents the strongest currency in this world, or, in other words, the network of a person determines its net worth because of providing access to startup funding. Consequently, the author transfers the concept of traditional social capital to technological digital capital. Thus, he defines *digital capital* as social capital accumulated on digital/social networking sites. In this context, it is noteworthy not to confuse the term *digital capital* with cryptocurrencies. In contrast, the emphasis is on leveraging social capital theory for the benefit of B2B businesses. Social capital serves vendors to identify and access key buyer team members; gather valuable, relevant, and timely intelligence; reach out to existing customers and potential new customers; and generate business opportunities that enhance the customer lifetime value (Lin, 2008; Rodriguez et al., 2012).

Accordingly, the author assumes that digital/social capital mediates the connection between the B2B business processes and business performance. This assumption is backed by data obtained from an international survey with 530 B2B executives in the DACH (Germany, Austria, Switzerland), Western European, and North American regions. Thus, it is hypothesized that a considerable social capital empowers executives to use digital/social media efficaciously in B2B business development and positively affects business performance.

The items of the scale for digital/social capital were adapted partially from Keinänen and Kuivalainen (2015), Rodriguez et al. (2012), and Lin (2002) and include the three dimensions: *structural* (network, open communication) Burt (2000); *cognitive* (knowledge exchange, shared values), and *relational* (trust, ties). In addition, the author developed the social capital construct by combining individual with organization statements. The idea behind this approach is that social networks are usually made up of individuals, groups, and organizations (Peters et al., 2013).

5 Conceptual Research Model with the Emphasis on Social Capital

The research model depicted in Fig. 2 assumes that, firstly, social media business usage impacts the B2B business development process and its phases resulting in its acceleration. Secondly, digital/social capital mediates the individual business development process phases and the business performance in B2B. Finally, business performance is impacted by more efficient and effective process phases and the accumulation of relevant social capital.

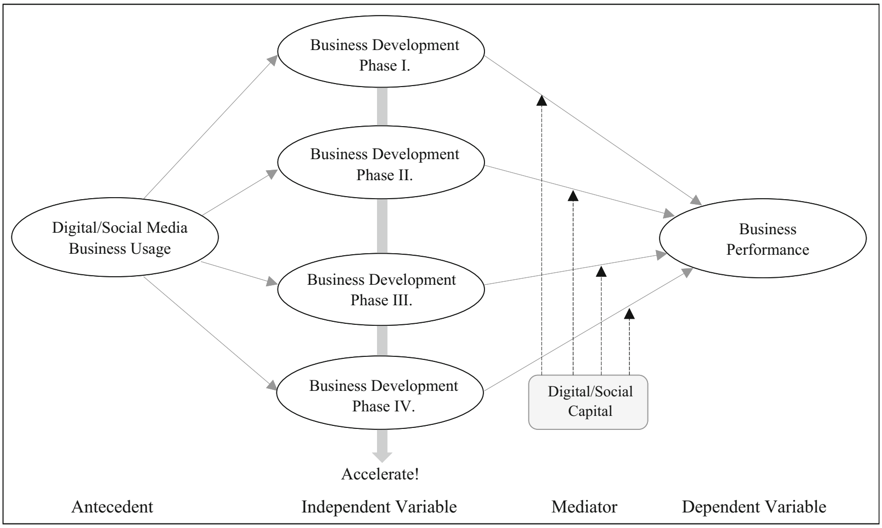


Fig. 2 The conceptual research model highlighting digital/social capital

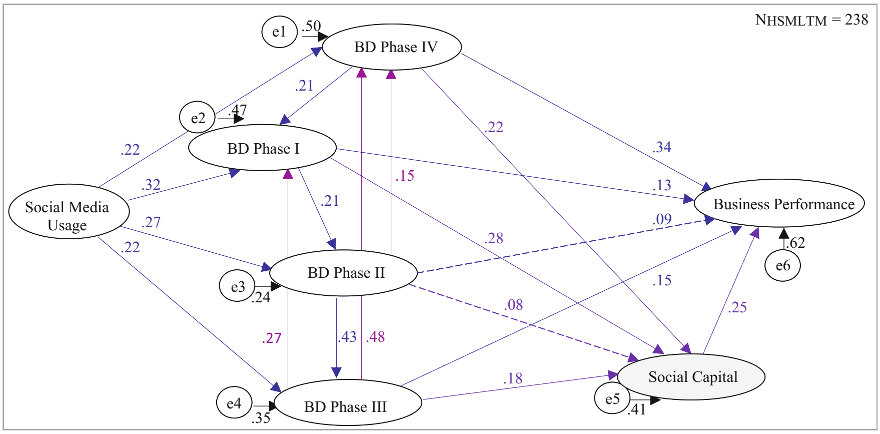
6 Structural Equation Model (Extract)

The outcome of the structural equation modeling (SEM), which allows simultaneously identifying the relationships between the variables and their equations (Hair et al., 2021), supported mainly the research model.

Figure 3 and Table 1 contain the final results.

For example, the analysis of the standardized path coefficient (*ß* values) indicates that the relationship between the third (*build a social network and manage existing relationships*) and fourth business development process phase (*increase the number of leads and generate opportunities*) in Fig. 3 showed the highest *ß* (0.48).

This outcome is not unexpected since both stages are essential to nurturing relationships with the key decision-makers and closing new business transactions. In contrast, there was no substantial relationship *ß* of 0.15 between the second (*share information and maintain competitor knowledge*) and the fourth business development process phase (*increase the number of leads and generate opportunities*). This is explainable that business information and competitor knowledge are usually stored in customer relationship management (CRM) Systems. In contrast, social media business usage is substantially higher for the business development process phases I (*identify potential buyers) ß* of 0.32 and II *ß* of 0.27, while it was similar for phases III and IV (ß of 0.22). This result can be understood from the background that social media are primarily used in the first two process phases to identify the B2B purchasing group stakeholders, retrieve business information, and maintain up-to-date knowledge about main competitors. The *ß* values of the downstream process phases IV (0.35) and III (0.18) suggest a more substantial impact on business



The grey-colored ellipses represent the model variables. The dark blue-colored arrows show the direct effects. The purple-colored arrows represent the indirect effects via the assumed moderator Social Capital. The plum-colored arrows reflect the incorporated relationships based on the M.I. analysis. The dotted lines represent non-significant path values ($p > .05$). The structural paths of the model contain the standardized regression coefficients or $ß$ values. High-Social-Media-User–Low-Traditional Media-User (HSMLTM).

Index/Measure $N_{HSMLTM} = 238$	Benchmark	Value	Comment
CMIN	N/A	11.073	The sample size is slightly below 250.
DF	N/A	8	The ideal sample size is (N/FD) = 29.
CMIN/DF (Norm Chi-Square)	[1.00 to 5.00]	1.384	The value is very good.
AGI (Adjusted Goodness-of-Fit-Index)	≥ .92	.993	The value indicates a perfect fit.
NFI (Normed Fit Index)	≥ .90	.908	The value indicates a good fit.
CFI (Comparative Fit Index)	≥ .95	.998	The value indicates a good fit.
RMSEA (Root Mean Squared Error)	≤ .08	.029	The value indicates a good fit. (LO = .000; Hi = .065)

Fig. 3 Final structural equation model with digital/social capital The grey-colored ellipses represent the model variables. The dark blue-colored arrows show the direct effects. The purple-colored arrows represent the indirect effects via the assumed moderator social capital. The plum-colored arrows reflect the incorporated relationships based on the M.I. analysis. The dotted lines represent nonsignificant path values ($p > 0.05$). The structural paths of the model contain the standardized regression coefficients or $ß$ values. High-Social-Media-User–Low-Traditional Media-User (HSMLTM)

performance. These phases require increasingly personal contact via traditional face-to-face or zoom meetings (during the pandemic). The business development process phase I reveals a critical influence on social capital ($ß$ of 0.28). This influence is plausible because the two upstream business development process phases, I and II, are geared toward initial contacting and gathering intelligence which might accumulate social capital – not just in terms of the number but also regarding the quality of contacts once they become first degree social media connections.

Table 1 demonstrates that the mediating effects are still statistically significant when totaling the direct and indirect effects ($p < 0.05$), particularly for the business

Table 1 The mediating impact of social capital

Testing for Mediation Final SEM Model; $N_{HSMLTM} = 238$				
Model Element Model Fit		Final Model Direct Effects	Final Model Indirect Effects	Final Model *Direct* + Indirect (Total) Effects
χ2 (Chi-Square)		7.940	238.916	11.073
Degrees of Freedom (df)		4	24	8
Probability		.094	.000	.198
RMSEA		.046	.138	.029
CFI		.997	.863	.998
Standardized Parameter Estimates				
Social Capital	< --	BD Phase IV	* .073	* *.225* (.298)
Social Capital	< --	BD Phase I	**.064	** *.280* (.344)
Social Capital	< --	B.D. Phase II	.221	*.076* (.297)
Social Capital	< --	B.D. Phase III	*.233	* *.182* (.415)
Business Performance	< --	B.D. Phase IV	.117	** *.338* (.455)
Business Performance	< --	B.D. Phase I	.153	* *.133* (.286)
Business Performance	< --	B.D. Phase II	.294	*.092* (.386)
Business Performance	< --	B.D. Phase III	.339	**.147* (.486)
Business Performance	< --	Social Capital	**.000	** *.254* (.254)

*$p \leq .05$; **$p \leq .001$; the blue-colored relationships were not statistically significant
HSMLTM = High-Social-Media-User–Low-Traditional-Media-User

development process phases VI and I instead of the business development process phase II. However, the indirect effect increased substantially for the BD process phase III. This result was not surprising. Business development process phase III refers to building social networks and managing existing relationships. In addition, the direct effect of social capital on business performance was also statistically significant (β of 0.25).

It is noticeable that the different purpose of the business development process phases determines their actual impact on business performance. While process phase I focuses on initiating new business relationships, phase III is about managing the existing relationships. A portfolio of existing customers or a well-developed social network explains the rather substantial value (β of 0.233) of the indirect effect on business performance versus (β of 0.064) of a not yet developed social network.

Some of the research outcomes suggested that the accumulation of social capital varied between vendors, third party, and buyer executives. A series of χ^2-difference tests indicated only a few significant values among the vendor-buyer, vendor-third party, and third-party-buyer groups. Social capital had a similar impact on business performance in all samples. However, the path between the business process phase I and social capital was only supported by vendor and buyer executives: vendors seek to establish a contact base of potential buyers, whereas buyers search for suitable vendors. Ultimately, social capital positively mediates the relationship between the business development process phases and business performance at the B2B marketing and sales intersection.

7 Practitioner Case Studies

The following case studies provide evidence for the practical relevance of the concept of social/digital capital. Sustained by the Strength of Weak Ties theory (Granovetter, 1983), individuals or organizations arrive faster at personal or business objectives through leveraging their social capital (Kline & Alex-Brown, 2013) for branding and credibility, i.e., traditional word-of-mouth or virtual LinkedIn or Xing recommendations. Furthermore, the Strength of Weak Ties theory assumes that commonality in social media profile information motivates users to go out of the way and support even strangers. Thereby, storytelling has become critical for timely, relevant and valuable digital media content marketing (Järvinen & Taiminen, 2016).

Case Study I

Application for a postgraduate program in Europe, 2012

The author originally approached an admission executive of the targeted UK-based business school, who discouraged him from applying since he had missed the application deadline. The candidate identified and approached a current doctoral student of this university on LinkedIn and asked for an interview. The doctoral student supported the candidate with a letter of recommendation to the program director resulting in the succcessful admission to the program.

Case Study II

Request for support to apply for a position in a global software company in the USA, 2014

The author worked for a leading software company and was approached via LinkedIn by a vice president who sought employment. Though there was no former relationship, the vice president's background included a private school close to the author's residence. This commonality impacted the author to use his connections for a complete stranger.

Case Study III

Request for an interview included in a book project in the USA, 2018

An executive coach contacted the author on LinkedIn for an interview and included the transcript verbatim in her book project. The author supported her project because she found favor by referring to the chapter of Business Networking International in which the author had been a member long before she became a member. The author was not aware of this fact and thought someone had recommended her.

Case Study IV

The author's application for a professorship in the USA, 2019

The address of the author's resume was next located to the town of the hiring professor. Moreover, she was familiar with his German-UK academic background since her family member had studied in these countries. This coincidence accelerated the recruiting process.

Case Study V

Executive coach applying for the #1 elite university in the UK, 2020

An executive coach who aimed to get admitted into a Ph.D. program at Oxford University reached out to the author highlighting his expertise on the LinkedIn profile. The coach signed a three-month coaching contract with the author a few weeks later.

Case Study VI

European professor seeking a position in the USA, 2021

Recently, a Spanish professor sought the author's support to obtain employment in North America. He shared various confidential data, including comprehensive certificates and passport information. The author provided coaching and some job resources but drew boundaries and refused to write a referral letter for obtaining a green card with the US naturalization services.

Case Study VII

Invitations to research projects based on social media profile information

The author was perceived as an expert and trusted advisor and has received invitations to various international conferences, organizations, and research projects.

8 Conclusion

Digital/social capital gains importance, especially in the aftermath of the global pandemic resulting in increased digitalization. Thereby, this concept becomes the barometer to assess the quality of business relationships intra- or inter-organizational (Tsai & Ghoshal, 1998). Test-driving relationships digitally can drastically minimize customer acquisition expenses for travel and meetings. Digital/social media business usage supports avoiding toxic and unprofitable business relationships by using behavioral metrics. For example, the expressions of appreciation, sharing of knowledge, and creation of genuine content can indicate relationship quality. Is it worth investing in building relationships with contacts whose behavior digitally raises doubts or red flags? Examples include a new contact who regularly posts updates and reaches out to the author for endorsements but never returns any digital favors in form of likes to the author's postings. Or a new connection is submitting an indecent proposal without any reference to your industry and position.

Similarly, like in real life, digital/social relationships develop over time. Mutually beneficial, credible, and trustworthy relationships (De Carolis & Saparito, 2006) may evolve with a few mouse clicks especially among the digital natives (Howe & Strauss, 2007). However, the nurturing of B2B relations requires time and genuine interest in adding value to the audience instead of just grabbing attention.

Genuine and giving connections can be traced on digital/social media by analyzing metrics such as relevant, consistent, and valuable contributions for the target audience, content quality, and response time to the messages of others. In addition, a focus on mutually beneficial exchanges allows growing digital/social capital that establishes and nurtures long-term business relationships.

Though this chapter examined digital/social capital in the business-to-business (B2B) context, the concept is transferable to business-to-consumer (B2C) or human-to-human (H2H) scenarios in various business models and industries.

Future studies may focus on developing algorithms and metrics to develop and maintain a high quality of social capital. For example, the author suggests text mining algorithms to assess and prune existing business networks and identify drivers and success criteria to build lasting digital/social networks, focusing on "best or right" business contacts for branding and reputation pruposes (Carvalho & Fernandes, 2018). This suggestion points back to Milgram's concept that it matters whom you know, whether for business or personal purposes (Granovetter, 2005).

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Dr. Werner Krings is a Visiting Assistant/Associate Professor at Framingham State University and Fitchburg State University in the Faculty of Marketing and Business Management for undergraduate and executive MBA students. Werner worked in two Big Three consulting firms in the NA and DACH region in various industries and recently as a sales director for executive education. He received his MSc (Business and Management Research) and DBA degree from Henley Business School at the University of Reading in 2018. His research interests are broadly in relationship management, digital social media, and social capital, entrepreneurship, and innovation, with a focus on the optimization of B2B processes to align siloed supply chain functions in global industries to enhance business performance. His work has been published in leading and peer-reviewed journals, recently in Industrial Marketing Management. Werner regularly teaches Entrepreneurship as a Junior Professor at EM Normandie, Oxford UK, and teaches International Business and Sustainability and Social Media & Mobile Marketing at the Hochschule of Applied Sciences, Munich. In 2022 he started to teach Entrepreneurship and Project Management at the Institut Francophone International, Hanoi, Vietnam. His recent research includes designing disruptive innovative Bbusiness schools, a project that is spearheaded by the School of Management Fribourg (HEG-FR), Switzerland.

Social Innovation: Back to the Roots of Social Interaction

Matthias Lovrek and Joseph Kap-herr

1 Introduction

1.1 Social Innovation: Back to the Roots of Social Interaction

Innovation has become an almost ubiquitous buzzword in the field of social entrepreneurship. As with any buzzword, the term might run the risk of being labelled as yet another trend. And if there is one thing that we've learnt about trends, it's that they don't last long! Beyond a fleeting dynamic of change that trends might invite, we should aim for genuine and long-term solutions that facilitate equal access to community life. We have to define innovation as planned and controlled change of aspects in our social systems by using new ideas and techniques. Innovation must go beyond mere rhetoric. Innovation requires action!

In times of rapid digitalisation of our societies, we want to focus on the analogue world, on human interaction and interpersonal relationships. Emphasising the intrinsic human need of meaningful interpersonal relationships, we will explain the importance of connecting different social realities in an increasingly digital world. Furthermore we will put forth a closer insight into our work at Sindbad – Social Business.

2 Mission Statement

"Sindbad is but a drop in the ocean" – this is how a former Austrian Minister of Education commented on our social enterprise Sindbad in 2017. For us, three ambitious young social entrepreneurs, this was sobering. Just 1½ years after the launch of Sindbad, we managed to present our organisation to this former high-level

M. Lovrek (✉) · J. Kap-herr (✉)
Sindbad - Social Business, Vienna, Austria
e-mail: matthias.lovrek@sindbad.co.at; joseph.kap-herr@sindbad.co.at

A. Ruthemeier et al. (eds.), *The Global Impact of Social Innovation*, Management for Professionals, https://doi.org/10.1007/978-3-031-03849-5_16

public official. But instead of encouraging our commitment and drive, he left us with this unsatisfactory response.

2.1 Great Ambitions

We have started out with a manageable number of mentoring teams, geographically limited to Vienna. Nevertheless, we were able to put forth a development plan that certainly had to be considered ambitious. So why this analysis by the minister? Has he not seen that in what we are doing, we are taking on a task that in and of itself would be the responsibility of the state? Did he not sense that we are building an organisation that will directly benefit the education system through a new and innovative form of civic engagement? The answer can only be that he must have been aware that we in Austria have a massive problem preparing our youth for its first labour market entry in compulsory school. But he probably didn't want to admit it to himself. Or was he right? Are we really just a drop in the ocean with our individualistic approach? Is it not (any longer) in the spirit of the times to find the energy to make a difference on an individual level? For us, then as now, it was absolutely clear that of course it is not.

A little more than 5 years ago, the idea was born to bring people from different walks of life into a relationship with each other, which under different circumstances they would be unlikely to develop. Then as now, the goal is to support socio-economically disadvantaged young people to gain a foothold in the labour market and lead a self-determined life. In recent years, however, Sindbad has become more than a stepping stone for young people – together with all the people engaged in the Sindbad cosmos, we have managed to turn Sindbad into a platform for social cohesion, relationships and personal development. Twenty-five friends as mentors and 25 young people from six partner schools in Vienna took the risk with us in November 2016 to set sail. They laid the foundation for the more than 1800 young people who have been accompanied by Sindbad to date. Every drop counts!

3 What Is Sindbad?

3.1 Founding Concept and History

We are convinced that individual relationships make a difference in society as a whole. With a 1-year 1:1 mentoring programme between young professionals/students (mentors) and compulsory school students (mentees) from educationally disadvantaged backgrounds, we want to support young people in their aspiration to find a first job (apprenticeship) or a secondary school. We are building a network between pupils, students, young professionals and companies in which each of the actors learns to understand, support and benefit from each other.

3.1.1 Sinbad Builds on Strong Relationships

In our 8- to 12-month programme, we connect young people from different social spheres and stages in life. Mentors develop leadership skills, while mentees benefit from trained and reflective guidance.

3.1.2 Sindbad Focuses on the Transition

We accompany the transition from ninth grade to apprenticeship or secondary school. An accompanied and guided transition and entry are central to a successful vocational training.

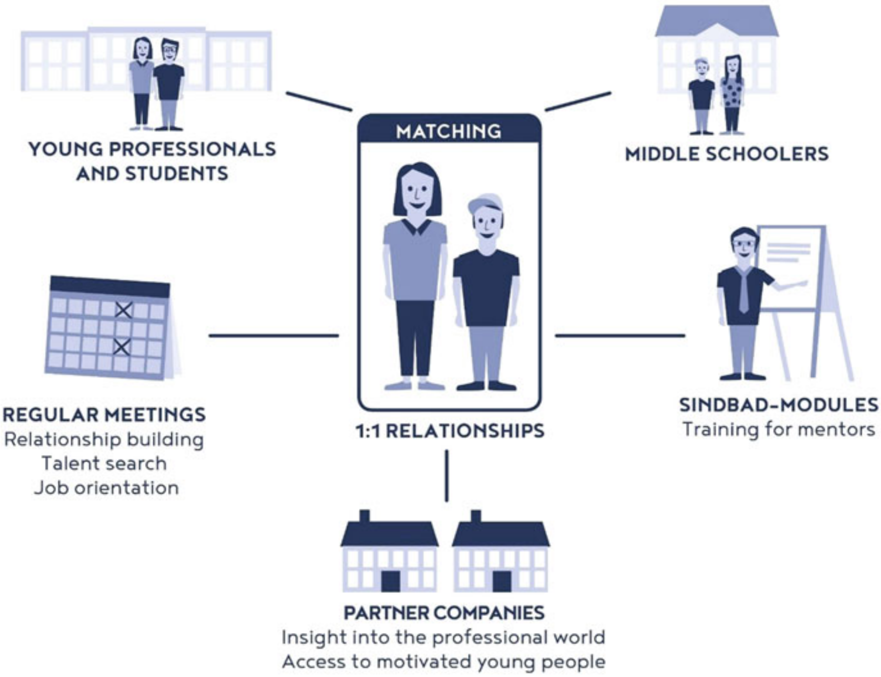
3.1.3 Sindbad Takes a Preventive Approach

We provide support before people drop out of education and become unemployed.

3.2 Approach

At some point in life, everyone has had a “mentor” of some sort, who has shown them new opportunities or supported them in different life situations.

Our approach is based on the idea of opening up new opportunities and perspectives, as well as counteracting prejudices, through an individual mentoring programme between different social strata. Our offer focuses on the relationship between educationally disadvantaged young people (mentees) and students/young professionals (mentors). The pairing generates multiple positive synergy effects due to similar life phases, proximity in age and professional orientation. At the same time, we cooperate with companies/organisations, which thereby gain access to motivated employees.



Sindbad supports socially disadvantaged students in making a successful start to their future. The programme engages committed 20- to 35-year-olds as mentors who accompany one student each individually and continuously for the duration of 4 years on their way to a career. The sustained interaction leads mentees to improve their academic performance, enhance their social skills, enhance their ability to reflect, seize new opportunities and subsequently also substantially improve their chances of a successful start in a training, a job or a secondary school. The mix of individual mentoring, various training opportunities and student-centred materials provides students with a multilayered opportunity to prepare for their personal and professional futures. A mentoring relationship includes two meetings per month, during which the mentors talk to the student about career opportunities, write applications or engage in other activities (e.g. sports).

Young people who take on the task to act as a mentor get the chance to develop vital social skills and are sensitised to their social responsibility. Mentors capitalise on the experience gained from the relationship later on in their careers – possibly in leadership positions. In their training as mentors, they define their own understanding of their role, learn how to deal with different types of challenges and are given concrete methods to enhance the mentoring relationship. Additionally, mentors gain an advantage when applying for jobs and in the workplace based on experience gathered in the social sector and voluntary work.

Sindbad's mentoring programme starts 1 year before the end of compulsory schooling and accompanies young people in their transition to secondary school or vocational training. Students from educationally disadvantaged backgrounds are accompanied in their career or school choice process by trained students during this year and can benefit from networking (e.g. application workshops, trial apprenticeships, etc.) with partner companies.

3.3 Scaling Model of Sindbad

Sindbad is a social franchise system that currently consists of seven location sites. Sindbad sites are geographically defined areas where the Sindbad concept is implemented locally by a local team. Each team aims to establish a "Sindbad HUB" around a HUB leader and 20 mentoring pairs (one mentee and one mentor) at each site.

4 "Innovation" from Our Vantage Point

"Sindbad is old-fashioned - not digital, not innovative."

Since our start, we have sought support from consultancies and external companions. With many valuable insights, we were often confronted by the same assessment that only a wholehearted embrace of digital solutions brings the necessary innovative force.

4.1 Status Quo: What Is Happening in Our World?

Processes of digitalisation have become a ubiquitous force, leading to massive transformations of our societies. All areas of life are affected by it, and the only way to escape this megatrend seems to be social isolation and standstill. So it is not just a trend, it presents a substantial and lasting modification in human coexistence.

Since COVID-19 has been affecting our lives, we feel the digital age more than ever. While it already used to be standard practice to work with CRMs and other digital tools for organisation, administration and filing, at least important appointments were subjected to the idea that face-to-face interaction can create a different basis of trust and thus a better result. Hours of business travel for short appointments were considered normal, interpersonal contact in business irreplaceable. This dogma, too, had to give way to a digital alternative in the past 2 years, as international travel was limited and impracticable. Even in schools and universities, practitioners had to resort to digital spaces to educate and interact. The possibility of digital learning was a blessing, as it could replace some of the missing lessons and business exchanges – but is it desirable in the long run? What does it do to us as people, and is it still innovative to focus purely on digital infrastructure and practices?

Innovation is renewal. The introduction of something new, something original. In what way is digitalisation still innovative?

4.2 Sindbad Creates Relationships

That is the core of our work: we create relationships, on all levels, between mentee and mentor, between staff and volunteers, between clients and interested parties and many other people.

For us, building a relationship means meeting each other attentively, respectfully and in mutual trust and interest. Relationships do not always work out the way we premeditate, but we are committed to ensure that the attempt to create one is at least meant seriously by both sides. The space needed for a relationship to develop is one that is created between two people, and in our opinion, only a small part of this space is created through language. To a much greater extent, it is influenced by a multi-sensorial perception of things: What does my counterpart look like, how does he/she react to me and what does his/her posture mean? How does he/she smell and what memory does this smell trigger in me? These are just a few of the countless factors that have a significant influence on the development and life of a relationship. And only a few of them can be perceived and understood in the digital space. What does that mean for us?

Sindbad creates relationships, with the claim that people – enriched by this experience – can find their professional path in life and choose it with greater awareness and freedom. For this, our model is based on analogue exchange and on face-to-face meetings – a method that many consider old-fashioned and not innovative. However, this perception is strongly dependent on the assessment of the current situation. We should be clear about one thing: digital interaction is the status quo. It has already transformed our social and professional lives and shapes our social reality to such an extent that it is truly innovative only in the fewest areas of social life, where meaningful relationships develop and thrive.

This leads to our self-perception in terms of innovation: Sindbad is innovative because it promotes a form of relationship development that is no longer dominant. With aspects such as time, respect, attentiveness and respect at the core of our model, we encourage personal interactions that might in fact have been hampered to a certain degree from processes of digitalisation. We are convinced that next to the unquestionably desirable consequences brought about by the digital age, addressing social issues will certainly require close attention on how to build meaningful relationships across different social spheres, which will go beyond the mere quest for “digital solutions.”

5 A Sindbad Story

I am even more in my own bubble than I thought. Ajdin (Mentee) and Martin (Mentor)

YouTube and hobbies were the icebreakers – we started to get closer through going to the bowling alley, playing table football and watching YouTube, says Martin. Martin is Ajdin’s mentor. Since autumn 2017, the two have been working together on the professional future of Ajdin, a pupil at a secondary school in

Vienna's 18th district. Martin was a scout in Innsbruck for years, and when he came to Vienna, he saw Sindbad as a good opportunity to get involved in a meaningful activity alongside his studies.

From the beginning, it was important for Martin to get to know Ajdin's environment. The first meeting was at Ajdin's home with his family. While ice skating, the two of them set out the parameters of Ajdin's future education. School or apprenticeship? Ajdin applied at a higher technical institute and chemistry college. However, while his grades in secondary school were insufficient to enter technical school, chemistry college did not appear to be a good match. Ajdin is a committed and interested individual, and it is a priority for him to earn his own money in order to be independent. Together, Ajdin and Martin looked for apprenticeships and applied for jobs such as track construction technician and electronics salesman, but it was no walk in the park. Ajdin had to go through five-stage application process for an apprenticeship as an electronics salesman: application letter, telephone interview, self-assessment test, test and interview. After the telephone interview, Ajdin received a rejection. Then, encouraged by his mentor Martin, he asked for a reason. The follow-up worked. Ajdin was given another chance in the telephone interview and went through application stages 3, 4 and 5 but was ultimately rejected for the apprenticeship.

Martin didn't think it would be so difficult to find an apprenticeship, despite his protégé's motivation and interest. "I'm even more in my own bubble than I thought," Martin says. The official Sindbad programme officially came to an end for the two in spring 2019. The two nevertheless kept meeting each other beyond the formal period, and Ajdin eventually managed to attain an apprenticeship with the support of his mentor Martin.

6 Quality Assurance at Sindbad

Quality assurance at Sindbad has the task of safeguarding the Sindbad brand essence of developing "genuine relationships." We make sure that the core of our activity is equally guaranteed for and by mentees and mentors as well as HUB and site managers at all locations. We distinguish here between measures that enable high-quality support for the mentoring teams and our key performance indicators (KPIs) – the success indicators cast in figures that show whether our measures are having an effect.

6.1 Goals of the Quality Assurance

- Ensuring a high-quality offer for Sindbad's core target groups
- Definition as well as regular evaluation and measurement of key quality criteria
- Monitoring, impact and strategic control of the implemented measures
- Basis for regular reflection on quality with a professional community (experts from the fields of education, social work, youth work and social entrepreneurship)

6.2 The Sindbad KPIs

The KPIs are collected through what we have called the "HUB Check." It is carried out on a quarterly basis.

- **1216**—Number of mentoring teams until June 2022 (mentees and mentors).
- **2432** young people from different walks of life have entered real relationships through Sindbad.
- **82,5%** *—Percentage of mentoring teams that complete the programme. These are young people from different social spheres who are in contact with each other for between 8 and 12 months and work together on the future.
- **83%** *—Percentage of mentees who make the leap into further education. These are socio-economically disadvantaged young people who have made a reflective training decision and have social support in the first 3 months of training.
- (* Average value of all Sindbad seasons completed so far).

6.3 Measures to Ensure Quality

At Sindbad, we have a comprehensive catalogue of measures to ensure quality in the selection and support of mentoring teams. In the following we shall describe two of these measures in greater detail by use of examples.

6.3.1 Selection and Training of Mentors

- The quality of the mentoring programme depends to a large degree on the adequate selection of mentors. A uniform boarding process guarantees adequately trained mentors.
- Mentoring young people at the period of life we aim to address is a challenging task. Anyone between the ages of 20 and 35 can in principle apply to become a mentor. In order to helps us find suitable mentors and prepare them for their engagement, we have developed a five-step admission process. The on-boarding process for mentors involves:
  - An Information Evening.
  - Application via the online form "Expectation Check" and screening of CV.
  - Personal boarding interview.
  - Submission of criminal record certificate, including an enclosure for child and youth welfare.
  - Attendance of a kick-off, in which in-depth preparation for the mentoring programme takes place. The event involves a 1.5-day workshop for future mentors, centred on the topics of role, relationship building and expectations.
- Sources of Recruitment: Our mentors become aware of us through various channels. The vast majority of about 72% discover Sindbad through acquaintances who are themselves active mentors or have heard about Sindbad by word of mouth. 18% come across Sindbad through the company where they work and about 5% each via print and online media.

6.3.2 The Mentoring Team Update (MTU)

The MTU is one of our quality survey tools. We take pride in considering ourselves to be a grassroots organisation and this tool allows us to never lose touch with the base as we continue to grow: the mentoring teams. It serves as a direct feedback tool for mentees and mentors and gives HUB leaders, site leaders and the holding company an insight into their respective relationship.

The MTU functions on multiple levels of the organisation:

- For the mentoring team: Reflection on the work and relationship between mentor/mentee
- For the HUB management: Overview of how the different teams are doing, identifying struggling teams at an early stage and taking swift action
- For site management: quality assurance at own site, feeling for mood in mentoring teams, Sindbad stories, controlling HUBs
- For the holding company: ongoing report on the teams, quality assurance, programme development, Sindbad stories, controlling sites and HUBs

The MTU functions as a monitoring tool of the five stages of the mentoring process:

- Getting to know each other and relationship building.
- Career orientation and relationship development.
- End of school and relationship development.
- Transition to further education and relationship development.
- Conclusion of programme, feedback and relationship continuation if possible. With the qualitative data collected, we aim to assess the impact of relationship work as well as to formulate targeted recommendations for action for the individual mentees and mentors.

7 Epilogue

7.1 A Dystopia

Let's envision a future, a year in which analogous relationships have become obsolete. A time when social and finally emotional atrophy has progressed so far that we can no longer smell each other. Everyone stinks, no one washes anymore. What is the point anyway? We don't meet each other anymore.

Over time, our sense of community has been eroded entirely by narcissistic self-love, and this has led to complete self-sacrifice through the absence of any compassionate exchange and comparable emotional experience. But let us also assume that in each of us, conditioned solely by our human nature, there is an inner drive to enter meaningful relationships, the drive that enables us to reflect on our behaviour and put it into perspective, in which we can share our sentiments with others and take honest interest in each other's motives and behaviours. Even in the distant future, this drive will still be inherent in us humans. Despite social isolation and the lack of analogue relationships, there will still be a need to take part in each other's life. The difference to today, however, will be that the knowledge for constructive, honest "relating" will have been lost. The relationship on an emotional level has to give way to the physical level due to the lack of relationship knowledge. One now at least tries to touch, smell and feel each other, in order to regain at least a small piece of the lost quality of life.

But man has become incapable of constructive interpersonal contact. The desire for a relationship becomes violent, the once constructive human interaction becomes brutal and violent because the deepest longings are no longer satisfied. And so togetherness becomes a struggle, the struggle as the seemingly last quantum of intersubjective experience.

Relationships are complex and sensitive. They hold dangers and can be the source of great disappointment and pain. But if we consciously move towards increasingly trying to avoid the risks of entering into meaningful relationships with each other as humans, we are playing with high stakes. We forget to respond to each other, to tolerate differences in opinions and to question our own behaviour. Every relationship is innovative – after all, if it is well embedded, it creates new values between two people.

That is what we are about.

Matthias Lovrek I was born in 1991 in Vienna, Austria, and raised in a small village in Lower Austria, close to the capital. After studying law for 5 years, longer stays abroad (Spain, Colombia, Portugal) and working experience in different fields, I knew that my future does not lie in the world of legal practice. In 2016 I joined two friends to build up Sindbad – Social Business. For the last years, we have been working on equal access for everyone to education and the labour market. I am married to a Spanish/Austrian artist and since 2021 father of one daughter.

Joseph Kap-herr I was born in Salzburg in 1990 and founded Sindbad during my master studies in political science. Wanting to understand individuals in their social coexistence against the backdrop of differing social realities has been a lifelong aspiration. It lies at the core of my ambition to make a valuable contribution to a highly interconnected world.

Safe-Hub Global: A Replicable Ecosystem for the World We Envision

Marius Gutowski, Oliver Kahn, Jakob Schlichtig, Julia Thiele-Schürhoff, and Florian Zech

1 Introduction

At Safe-Hub, the world we envision is one where all young people access equal opportunities, strive to realise their potential and dare to dream. This vision, as well as our dedication to realising it, is a direct response to some of the most urgent challenges facing our world today, including inequality, poverty and unemployment.

In marginalised communities, young people and their families have limited access to safe spaces and vital services that enable social mobility and development. Unequal access to opportunity ends up perpetuating intergenerational cycles of poverty, preventing young people from realising their potential and preventing entire communities from thriving.

M. Gutowski (✉)
AMANDLA Social Enterprises, Berlin, Germany
e-mail: gutowski@edufootball.org

O. Kahn
Oliver Kahn Foundation, Munich, Germany
e-mail: gutowski@edufootball.org

J. Schlichtig
AMANDLA Social Enterprises, Munich, Germany
e-mail: schlichtig@edufootball.org

J. Thiele-Schürhoff
Knorr-Bremse Global Care e.V., Munich, Germany
e-mail: gutowski@edufootball.org

F. Zech
AMANDLA Social Enterprises, Johannesburg, South Africa
e-mail: zech@edufootball.org

A. Ruthemeier et al. (eds.), *The Global Impact of Social Innovation*, Management for Professionals, https://doi.org/10.1007/978-3-031-03849-5_17

The First Safe-Hub in Khayelitsha, Cape Town, in South Africa

Rising youth unemployment, exacerbated by the ongoing effects of the global pandemic and worsening inequality worldwide, makes the need for effective, creative interventions all the more critical. Already vulnerable communities now face multiple, compounding challenges, many of which are only on track to intensify in coming years. It has become clear that the global community needs to invest in proven solutions to key issues, urgently.

"All over the world, young people growing up in under-resourced environments are not getting a fair chance to create a successful future for themselves. And this problem has been increasing significantly, even before COVID-19. In South Africa, for example, you have a youth unemployment rate of around 50%. The added challenge, and I think need for urgency, is that obviously this is a compounding issue — if one generation grows up in that kind of environment, it's likely going to get worse and worse for the generations that follow." – Florian Zech, Joint Managing Director, AMANDLA Social Enterprises

In an effort to address major barriers to development, the United Nations formed the Sustainable Development Goals (SGDs) as a roadmap for the change our world desperately needs. In recent years, we have witnessed many diverse sectors and unconventional partners come together and take considerable strides to get nations, regions and our collective world closer to achieving the targets set forth in the 17 SDGs. But more is needed. When we consider the global scale of the problems we face, it's clear that we need the scale of social innovation to match.

The Safe-Hub Model in Relation the UN's SDGs

Over the past decade, Safe-Hub has established an evidence base that demonstrates the effective disruption of intergenerational cycles of poverty, inequality and unemployment. Each Safe-Hub represents the world we want to create: a world where young people have all the tools and support they need to achieve their life goals and contribute positively to their community. Now, pursuing our vision urges us to ask big questions about what comes next.

How can we fight inequality on a larger scale? How can we create more opportunities for young people from disadvantaged communities? What would the world look like if more marginalised communities could develop and thrive?

> "In the global south, in general, there is an ever-growing youth population. That has everless access to meaningful opportunities. In an unfortunate way, this really sets the scene for the importance of our work, of a solution that is scalable globally. If there was ever the need to seek a platform for an issue, I think it's now absolutely urgent." –Florian Zech

2 What Is Safe-Hub?

Safe-Hub is a scalable platform for global social impact. Individual Safe-Hubs are physical and emotional safe spaces for young people, their families and the local community. Bringing together a collaborative ecosystem of local partners, each hub offers holistic youth development programmes and community development services that focus on health, education, employability, digital skills and green solutions.

> "Safe-Hub is a true social enterprise — we are paid to deliver a service to people who deserve to have access to our services, services that are desperately needed to address

challenges that haven't been addressed for a long time, or have been addressed the wrong way, in my view. What we are trying to do is pursue a different route, based on the learnings that we observe around us.

We're creating a service culture, where the young person that walks up to the Safe-Hub is not a beneficiary, but a customer. They're not a participant in a development programme that has to be grateful to be part of that programme. This really creates a mindset shift — a shift in how you implement programmes, how you enter a new community, and a shift in the community itself and how they experience Safe-Hub." – Jakob Schlichtig, Joint Managing Director, AMANDLA Social Enterprises

An innovative, carefully integrated infrastructure includes three central components: a multipurpose sustainable sports field, a holistic youth development centre, and an entrepreneurship and economic development zone. This unique collaboration space is designed around one main focus: providing truly holistic support for every participant.

Safe-Hub Infrastructure in Gugulethu-Manenberg (South Africa)

"I think the innovation of Safe-Hub is that we are really trying to create an ecosystem or platform that brings together different sectors — the nonprofit sector, the corporate sector, the government sector and the local community as well — to join forces on realistic interventions around youth and community development.

What makes Safe-Hub an innovative social enterprise, to me, is the combination of two things: first, creating a central, safe space that brings together the important role players to provide holistic and quality services to young people and their families; and second, taking a very professional approach that translates learnings from successful businesses in the for-profit world into the nonprofit space." –Jakob Schlichtig

At their local Safe-Hub, young people can access learning opportunities and support from strong role models. Aspiring entrepreneurs can access start-up support and get the skills training they need to start a new venture. Families seeking health and wellness guidance can access services or get connected to local providers and NGOs. Local community residents can learn about green solutions like urban farming and get the skills they need to implement sustainable initiatives.

Each Safe-Hub offers a broad range of services, opportunities and support, including:

- After-school and work recreation programmes
- Business development services and training
- Skills development, employment and entrepreneurship services and training including accredited learnerships
- Shared office space and start-up support
- Health and wellness support services
- Digital and future skills programmes
- Early childhood development services
- Green economy services and training, including urban farming and waste management solutions

Safe-Hub Emphasises Digital and Future Skills

At Safe-Hub, inclusion is a priority. Offerings are tailored to the needs of the immediate community. Local partners with local knowledge, connections and credibility are engaged to maximise impact and ensure that programmes and services resonate and provide concrete support to a wide range of users:

> “On any particular day, we want to have as broad an offering as possible of different programmes and services for young people from different age groups — whether they are 5, 16 or 25 years old, they should be able to access an offering that's relevant to their development and motivates them to participate and then keep coming back.” –Florian Zech

> “I think another game-changer that makes Safe-Hub unique is our strong focus on top class infrastructure in township areas, in areas where people would expect lesser quality than what we deliver to them. What we’ve seen over the last few years is that the quality our infrastructure can compete with top infrastructure in more developed and privileged areas — and this really does something to the self-esteem that young people develop. It becomes a change-maker, in terms of mindset, experience, equality and value; it creates the feeling in a Safe-Hub user of being valued by their outside environment, which is very important.” – Jakob Schlichtig

Since 2012, Oliver Kahn and his foundation have been dedicated Safe-Hub partners. With support from the Oliver Kahn Foundation, Safe-Hub has been able to grow within South Africa and begin expanding globally:

> “I am convinced that education and sport are powerful drivers of social change. I knew that these elements would be the core of my work through the Oliver Kahn Foundation, and in my search for a partner in this effort, I came across AMANDLA, the organisation that created Safe-Hub, almost 10 years ago now, back in 2012. There was something distinct and uniquely impressive about AMANDLA. What I saw when I visited the first Safe-Hub in Khayelitsha convinced me that this was the organisation I would join forces with and that we could really build something significant together. And that’s what we’ve done.
>
> Initially, there was our shared connection to football, but really it was more than that. What has inspired me and sustained my commitment to Safe-Hub over these many years is its holistic approach. Education, sport, health, employment training — each Safe-Hub is a one-stop-shop that aims to support every dimension of youth development. And when young people growing up in disadvantaged communities can be motivated, supported and empowered to develop their potential, we see remarkable results. What we’ve seen is that these results get replicated at every Safe-Hub location. Because of its proven track record, and success in multiple communities, I think Safe-Hub is poised to scale globally. The problems this model addresses are universal, and I have great confidence that Safe-Hub will positively impact every community it reaches.” – Oliver Kahn, Chairman of the Board of the Oliver Kahn-Stiftung

3 Impact

Over the past decade, Safe-Hub has established an evidence base that demonstrates the effective disruption of intergenerational cycles of poverty, inequality and unemployment. Endorsed as a best practice by the United Nations, the model has won numerous international awards for its ground-breaking impact on the reduction of violence and the improvement of education results in South Africa.

There are currently nine Safe-Hubs in South Africa and two Safe-Hubs outside South Africa that are currently being built in the United States (Philadelphia) and Germany (Berlin).

As a platform for collective social impact, Safe-Hub generates 580% Social Return on Investment (SROI). A global index and an innovative method of accounting for value creation, SROI assesses the value of the impact a project has and expresses this in monetary terms. The SROI ratio for Safe-Hub indicates that for every 1€ invested, there is a social return of 5,80€, which translates into a 580% return on investment.

What this number represents in terms of real-world impact includes a series of benefits for Safe-Hub users and local communities. These include:

- 49% higher education pass rates
- 44% less contact crime
- 90% more youth in employment, education or training

For each individual Safe-Hub, the annual impact of services and programming includes:

- 1500–5000 direct beneficiaries
- 7500–25,000 indirect beneficiaries
- 15–50 learnerships
- 30–200 jobs created for community members
- 10–30 schools and early childhood development centres directly supported
- 3–12 small, medium and micro enterprises operational on a day-to-day basis

Safe-Hub Supports Youth Employment Through Training Programmes and Learnerships

As is true for any social impact model, Safe-Hub results in certain benefits that can't quite be measured or expressed in numbers. The experiences and connections that young people, their families and the local community form are especially meaningful.

> "Safe-Hub has helped me to identify my purpose in life. My purpose is to work with my community, so next year I am going to study social work. I would like to open my own organisation where I can help children in the community." – Athenkosi

> "Some of the things these kids are facing, I faced already. I try to understand what they need. And how I can help. I tell them, whatever you are facing in life, I'm here for you. I believe if we have good role models, young role models, our community will benefit more. If we give young people equal opportunities, we will have a better community." – Siphokazi

> "I love my job because I have a love for our participants and for improving their lives. At the Safe-Hub, it always feels like there is a chance to learn, for participants and for us. This position will help me pursue my dreams through the skills and training I have gained to keep moving up." – Amphiwe

> "I came to the Safe-Hub to play soccer, but I can also get other help here. I come sometimes to ask the programme officers for help with my homework or just to talk. I know they'll always want to help." – Bonga

4 Global Solutions for Global Challenges: Scaling the Safe-Hub Model

It has been more than a decade since the Safe-Hub model was created, and in that time non-profits, the social impact sector, and public-private partnerships have evolved. At the same time, global challenges from inequality to youth unemployment have become even more urgent and widespread. As the landscape within which we work changes, so has Safe-Hub and our vision for social change.

> "The problems we are trying to solve in this sector are overwhelmingly big and overwhelmingly complex. And we experience them in the local environments where we work, but we also translate them into the global context. And you very quickly come to the conclusion that you're trying to solve something that's bigger than Khayelitsha — it's South Africa, it's the world. Inequality, poverty, unemployment, youth violence, gender-based violence — these issues are so big and complex because they've been growing for centuries without receiving the attention that they should have received. They're also a side effect of the current political and economic system that we live in.
>
> But often, the organisations that are trying to solve these problems are very small, driven by the right intentions and a strong emotional connection to the work, but lacking the professionalism, lacking the resources to build an organisation strong enough to fight these massive global problems. In any other sector, this wouldn't be accepted, it wouldn't work." – Jakob Schlichtig

> "What we've observed from the very beginning, and still observe today, is that in the social sector there's often not a very efficient approach to solving problems — it's very fragmented. There's a very siloed approach where big and small organisations struggle to work together. But this is also true for government. And it's also true for the corporate sector.
>
> Because we recognised this, we wanted to take a platform approach and create a mechanism that pulls these different players together behind one vision, aligning each other's programmes, mapping out the differences, so that it's really customer-focused and offers the most holistic, wide set of services to a young person or their family or their community.
>
> This is what underpins our joint venture approach — both on a global level with international partners but also at the community level where we work with local organisations. At the end of the day, we can all come together behind one vision and one measurement system on how we want to achieve change for a community." – Florian Zech

The Safe-Hub Model Can Be Scaled Globally

In pursuit of our vision, in recent years the Safe-Hub team together with partners, including the Oliver Kahn Foundation and Knorr-Bremse Global Care, decided to refine our approach and evolve our award-winning platform into a social franchise model. This strategy has made it possible for us to scale within South Africa and begin expansion into other countries, first with Germany and the United States. Ultimately, this model provides a pathway for enabling social change around the globe. The thinking behind this shift is simple: global challenges need global solutions.

The need for a global approach led to the creation of Safe-Hub Global, a joint venture that brings public and private actors together in a mutual endeavour to achieve social change on a global scale.

"We wanted to have a more strategic intent behind our global ambition. When we were looking at different models of how to do this, we felt like our approach of changing systemic issues through an ecosystem should actually be reflected not only in our programme offerings but in our governance structure as well.

We wanted to break that very established framework of the grant giving side and project implementation side, because this creates an environment where the implementing organisation can't really make mistakes, can't do trial and error or try things out to really solve problems in the time that's needed to solve them. You end up creating these separate worlds, where one side can't really benefit from the resources, skills or knowledge of the other.

So we thought let's look at what works in the for-profit world. And there, if you have two or three players who want to achieve the same thing, but come from slightly different angles, then they often start a joint venture. And that's what we did with Knorr-Bremse Global Care, we joined forces and started a nonprofit company.

We both contribute and we both learn from each other. There's a joint development of strategy and innovation, and a high level of ownership from both parties, that I think is required to solve very complex challenges." – Jakob Schlichtig

"It's been incredibly meaningful to see how the model has evolved and grown over the years, and to play a role in Safe-Hub's expansion outside of South Africa. One of the things that is unique about Safe-Hub is that the model itself is flexible, it can be adapted to different social contexts and specific local challenges, like unemployment, crime or poor access to health services. This ability to adapt, and focus on the particular needs of a given community is part of what makes Safe-Hub so successful, in my view. It's also what engages young people and keeps them motivated and interested in coming back.

With Safe-Hub Global, we are coming together as equal partners, each bringing their expertise, resources, and commitment to the success of this collective venture. I think this model is innovative, ambitious, and it represents the kind of bold thinking we need to take on these difficult, global challenges in the coming years. We need the full force of for-profit and non-profit leaders — genuinely collaborating — to really drive significant social change on a global scale. Where there is trust, respect, and room for creativity, I think we can achieve incredible results." – Oliver Kahn

From early on, the team at Knorr-Bremse Global Care played an integral role in shaping and realising Safe-Hub Global as a truly joint venture. A global non-profit set up by Knorr-Bremse employees in 2005, Knorr-Bremse Global Care supports partner organisations working on education, emergency relief and water, sanitation and hygiene (WASH). As an independent organisation, Knorr-Bremse Global Care works primarily in countries with Knorr-Bremse corporate sites so that it can maintain direct contact with the supported projects, raise awareness of social challenges amongst employees and motivates them to play an active role in addressing these issues. The Knorr-Bremse Group supports Knorr-Bremse Global Care through regular donations. This is one of the manifestations of corporate social responsibility at Knorr-Bremse.

"We have a 'partnership on equal footing' between Knorr-Bremse Global Care and AMANDLA. In addition to financial support, we actively drive the joint strategy and also contribute with our network. We appreciate the agile and innovative way of working together. Entrepreneurial thinking, impact-orientation, and heartfelt action towards our common goals are important principles for our joint work.

What drew us to Safe-Hub is that its model is truly holistic, and it aims to achieve structural change sustainably, with a broad impact in the communities. We are both strongly aligned on the SDGs, specifically around education, gender equality, decent work and economic growth. What stands out with Safe-Hub is its SROI and a proven track record of measurable results.

We find scaling a model of social impact from the global South to the global North extremely promising. Although there is a high spirit of innovation in developing and emerging countries, we too rarely experience scaling from a developing country to industrialised ones.

By leading by example, I believe that companies have the power to positively influence people's behaviour. These behavioural changes can benefit society and the environment. Knorr-Bremse is eager to engage with the communities where we work, as well as the broader society to help closing existing gaps to achieve the SDGs.

At Knorr-Bremse, we not only financially support social impact projects, but also motivate our employees to get involved and raise awareness of social challenges amongst our stakeholders. We see our role not only limited to dispersing funds, but also to use our expertise, capacities and capabilities. Through our leadership team and project champions, we raise awareness and enable all employees to contribute to social challenges and the fulfillment of the SDGs.

Ultimately, we share the vision to create equal opportunities for marginalized youth. Through the joint venture, we are convinced we can make a difference." – Julia Thiele-Schürhoff, Founder, CEO and Chairwoman of the Executive Board of Knorr-Bremse Global Care e. V., member of the Supervisory Board of Knorr-Bremse AG

Young People Celebrate at a Berlin Safe-Hub Event

"With the joint venture, because our partners are close to the process and part of the ecosystem, there's the opportunity for a thought process and a change process to evolve in our partners' space. For example, because diversity is one of our core objectives for Safe-Hub Global, as we implement that objective through resourcing, for example, our partners and their leadership are being exposed to that and they start to think maybe it's something they can translate into their business too.

The hope is that, because we have a values charter that partners sign on to, that we can also have an impact on the privileged side of the inequality problem. And I think that's so needed. Because when we talk about social inequality, we always focus on the poor part of inequality — we have millions of NGOs that are focusing on the poor, but who is focusing on the privileged side and trying to get them to change?

The ambition is that through Safe-Hub Global, through the joint venture, we can bring very powerful and very privileged people into this space and start changing their mindset, so that they can then have a very strong impact on their peers in a very influential network globally. And we're already seeing small signs of that, which makes me positive that this is a very worthwhile journey to pursue." – Jakob Schlichtig

"What success looks like for Safe-Hub Global, to me, is that we manage to create these cells of excellence all over the world that show a pathway out of the intergenerational cycle of poverty and inequality for a young person that lives in an under-resourced environment.

And from these cells, we radiate regional campaigns that start to change how countries approach youth development. Of course South Africa is different to India or Brazil or any other country, so a contextualised solution always has to be developed. But if we can align with regional government and development agencies, and show the evidence from our model, we can kickstart regional scaling campaigns.

In this way, we could start to achieve the impact that we've seen in South Africa all over the world. That's the long-term goal — that eventually, young people all over the world will have equitable access to opportunities and be able to really form a successful future for themselves, the same in South Africa or in India or in Germany." – Florian Zech

Marius Gutowski As a masters graduate from the Berlin University of the Arts (UdK) in the fields of Communication in Social and Economic Contexts, Marius Gutowski understands the importance of social innovation. After the big migration movement of 2015, he joined the NGO "Über den Tellerrand" in Berlin as a volunteer football coach for a team that included refugees and local players. Through this experience, he learned how to use football as an active tool for inclusion and experienced firsthand the impact that sports can have on implementing social change. Marius Gutowski joined AMANDLA in 2017 and is working as a Project manager in the field of Communication and PR.

Oliver Kahn was born on June 15, 1969 in Karlsruhe. After his Bundesliga debut in 1987 at Karlsruher SC, he moved to the German record champion FC Bayern München in 1994. Oliver Kahn grew into one of Germany's most successful soccer players of all time having won eight German championships and six DFB Cups and in 2001 the Champions League – amongst others. For his outstanding athletic and personal achievements Oliver Kahn received the award for best player of the FIFA World Cup 2002 and was three times world's best goalkeeper. In summer 2008, after 22 years as a professional football player, he completed an outstanding career.

From September 2008 to July 2020, Oliver Kahn worked as a soccer expert for international matches and the Champions League for the German public broadcaster ZDF. He has set up his own foundation—the Oliver Kahn Foundation. End of 2011, Oliver Kahn graduated successfully with a Master of Business Administration. Motivation and leadership are central topics that Oliver Kahn deals with as an author, speaker and entrepreneur. Oliver Kahn has been CEO of FC Bayern Munich since July 2021.

Jakob Schlichtig is co-leading AMANDLA Social Enterprises and Safe-Hub globally with a focus on an operations, finance, people, marketing and general business services. He holds a degree in Business Studies from the University of Regensburg, Germany. Before joining the social enterprise sector, he worked in the media and entertainment industry on several projects for national German TV stations. As part of the founding team of AMANDLA, he was driven by the ambition to enable positive social change while developing Safe-Hub to become one of the leading solutions in holistic youth and community development. Under his leadership Safe-Hub has been endorsed by the United Nations Office on Sport for Development and Peace as global best-practice model for youth development and has won numerous international awards including the Beyond Sport Award as a best project globally for its social impact.

Julia Thiele-Schürhoff has been founder and Chairwoman of the Executive Board of Knorr-Bremse Global Care e. V. since 2005. She studied law at the Ludwig Maximilian University in Munich, Germany. From 2002 to 2008, Julia Thiele-Schürhoff was legal counsel of Knorr-Bremse. As she is driven by the ambition to enhance social and corporate responsibility, she initiated the Corporate Social Responsibility unit of the company in 2008, which she had led until 2014. Since 2008, Julia Thiele-Schürhoff has been a member of the Corporate Responsibility Council of Knorr-Bremse. She has played a leading role in the development of corporate values and has closely supported the alignment with the United Nations' Sustainable Development Goals. She has initiated Knorr-Bremse's ambitious climate strategy. In 2016, Julia Thiele-Schürhoff was appointed member of the Supervisory Board of the company.

Florian Zech is the founder of the internationally acclaimed social enterprise AMANDLA and is co-leading AMANDLA and Safe-Hub globally with a focus on strategy, solutions, business development and partnerships. He founded AMANDLA in 2007 when he was 20 years old, and ever since his vision is the driving force behind the organisation's international development. In 2015, Florian was awarded the Medal of the Order of Merit from President of the Federal Republic of Germany as of the youngest Germans ever to receive this honour. He was also awarded the Ashoka Fellowship, which identifies and supports the world's leading social entrepreneurs. Under his leadership Safe-Hub has been endorsed by the United Nations Office on Sport for Development and Peace as global best-practice model for youth development and has won numerous international awards including the Beyond Sport Award as a best project globally for its social impact.

Empowering Women as Key Changemakers: Why Female-Driven Social Innovation Matters

Eva Vosen, Stefan Wilhelm, and André Habisch

1 Introduction

Female leaders assume a key role on the global political and economic stage: as research by the World Economic Forum (2021) and the Harvard Business Review (Zenger & Folkman, 2020) shows, trust in them is increasing. While there is some debate about these findings (see Windsor et al., 2020), one reason seems to lie in their documented ability to continuously learn and develop—while showing empathy, honesty, and integrity. On the contrary, disasters like the Deepwater Horizon (United States Environmental Protection Agency, 2020) and Ford Pinto case (Leggett, 1999) impressively show that a lack of diversity may produce spectacular wrong decisions, entailing massive destruction of wealth as well as environmental and public health hazards. Hence, more diverse organizational structures and decision-making enhances business performance significantly (Hunt et al., 2015) with even investors increasingly requiring companies to adapt (Wiley, 2021). Active diversity management and as a result more female leadership are perceived to promote practically wise decision-making (Stangel-Mesecke et al., 2018) and good governance.

While the given sources primarily concentrate on OECD countries, our contribution focuses on the overall importance of female entrepreneurship in the economic development of the Global South, specifically Sub-Saharan Africa. Negative effects of the pandemic with the burden of building back the economy (Mahler et al., 2020) as well as climate change (World Meteorological Organization, 2020) are hitting this region hardest of all. In this context, according to recent research by the World Bank,

E. Vosen · A. Habisch
Katholische Universität Eichstatt – Ingolstadt, Eichstätt, Germany
e-mail: Eva.Vosen@ku.de; andre.habisch@ku.de

S. Wilhelm (✉)
Bayer Foundation, Leverkusen, Germany
e-mail: stefan.wilhelm@bayer.com

A. Ruthemeier et al. (eds.), *The Global Impact of Social Innovation*, Management for Professionals, https://doi.org/10.1007/978-3-031-03849-5_18

women make up 58% of all entrepreneurs, but earn 34% less profits than men (World Bank Group, 2019). Moreover, female-led enterprises are usually smaller, not as likely to grow (Femi Ademiluyi, 2019), and are more likely to fail than those owned by men (Minniti & Naudé, 2010). Reasons for these facts cover disadvantages such as inadequate access to capital, gender-biased business rules and regulations, or gender unfriendly ethnic cultures (Femi Ademiluyi, 2019). Particularly in societies across Sub-Saharan Africa, most women lack access to finance and education, thus hindering them to realize their full potential (Ndemo & Mkalama, 2019). Nevertheless, entrepreneurship is widely popular and admired across the region, with more women being part of the workforce than elsewhere in the world (ibid.). Given the great potential of female entrepreneurs in the fight against poverty (Femi Ademiluyi, 2019), they represent a key ingredient to developing societies.

With this contribution, we aim to highlight support structures which allow female social entrepreneurs in the Global South to grow their business. We show how international multi-stakeholder initiatives can help women-led social impact startups to thrive. Moreover, the proposal offers an action learning cross-sector framework involving a variety of different stakeholders from industry and academia. Learning through experience, knowledge sharing, as well as network-building, strengthens female-led entrepreneurial solutions and role models for building ecosystems of positive socio-economic development along the lines of the UN SDG Impact Goals (SDG Impact, 2020). We will begin by outlining the key concepts and methods underlying this approach.

2 Theoretical Framework

2.1 Challenges of Social Entrepreneurship

Social entrepreneurship has increasingly gained recognition during the past decades (Light, 2006). While a number of definitions exist, the notion of social entrepreneurship is increasingly defined more narrowly along the lines of Tracey and Phillips' (2007, p. 265) understanding of social entrepreneurship as an "enterprise for a social purpose" that requires the identification and exploitation of market opportunities with the aim to develop products and services that can be reinvested in a social project. However, social entrepreneurs are faced with various challenges, such as balancing market-based and charity-based organizing (Battilana & Dorado, 2010; Tracey et al., 2011), as well as accountability to a wider range of different stakeholders than conventional businesses. As a result, they have to present the organization in different ways toward actors in both the for-profit and nonprofit domains (Tracey & Phillips, 2007).

Such challenges are even more severe for female social entrepreneurs operating in Africa: While Africa is the continent with the highest rate of female entrepreneurial activity, women still struggle with lower education levels and lower asset endowment. As women often operate small businesses, mostly for subsistence (Benarousse, 2020), failure to meet loan conditions and financial self-exclusion prevail. However, the very need to procure for themselves and their families makes them drivers of entrepreneurship: As they often are confronted with limited job offers, they have to create alternative sources of income to survive. Their lack of access to traditional funding makes women important actors of microcredit policies, as they are considered more trustworthy, productive, and less corrupt than their male counterparts. Moreover, an increase in female-led financial structures would make funding more easily accessible to other women (De Panafieu & Benarousse, n.d.). We therefore believe that strengthening the networks of female entrepreneurs—also with respect to expertise and social capital—will increase the success of female-led social enterprises in Africa, thereby contributing to enhancing livelihoods in the developing world.

2.2 Market-Creating (Social) Innovations

To bridge the gap to success at scale for social entrepreneurs, putting the focus on market-creating innovations as described in Clayton Christensen's "Prosperity Paradox" (Christensen et al., 2018) serves as a guideline. Christensen describes three types of innovation: efficiency innovation, sustaining innovation, and market-creating innovation (ibid.). Following his line of argumentation, only the latter of the three has the potential to bring about sustainable economic prosperity for the Global South in the mid- and long term. While efficiency innovations reduce employment opportunities to increase profits (e.g., in the oil and gas industry) and sustaining innovations increase the quality of existing products while cannibalizing its own market share (e.g., new car or smartphone models), market-creating innovations mainly evolve around products and services that bring about new employment opportunities, infrastructure, and therefore increased net worth on a micro and macroeconomic level (ibid.).

A prominent example Christensen gives in an interview with the Wharton University of Pennsylvania (2019) is the case of Tolaram's Indomie Noodles, a company that created a whole new market for their product in Nigeria, including a completely new supply chain, logistics, and sales infrastructure, thereby making nonconsumers into consumers and enabling simple access to nutrition (ibid.). As of 2017, Tolaram had a market share of 70% in the Nigerian noodle market, selling 4.5 billion Indomie noodle packets per year (Mohanty, 2017). Further examples related to Sub-Saharan Africa are the cases of Mo Ibrahim, who laid the groundwork to today's vast African cellphone network some two decades ago, simply because of the lack of landline infrastructure. The elimination of unattainability (through easily built signal transmission infrastructure) and unaffordability (via prepaid cards vs. monthly plans) created a completely new market that enabled accessible an affordable communication to a large part of the population that was completely left out of the market before (Ibrahim, 2012).

Against the backdrop of the enormous societal challenges that especially women entrepreneurs are facing as key changemakers (Benarousse, 2020; Boateng, 2018) in countries across Sub-Saharan Africa (Benarousse, 2020), the approaches featured in our contribution seek to highlight the relevance of female role models that develop (possibly) market-creating social innovations (Boateng, 2018). These innovations do not only focus on increased market share and profits but pursue a societal empowerment agenda that promotes inclusive business (Lashitew & Van Tulder, 2017) for shared prosperity, going beyond Christensen's original approach toward a triple bottom line (Elkington, 1997).

2.3 Business Model Development

Social innovation—the development of better solutions to social and environmental challenges—faces more constraints than tech innovation due to issues like limits in funding or the difficulty of measuring social outcomes (Chang, 2019). By providing support in listening to customers, iterating on solutions, and designing sustainability-oriented business models (ibid.), the lean startup method (Ries, 2017), as well as the Business Model Canvas (Osterwalder & Pigneur, 2013) lie at the heart of the program. The process of developing and enhancing the social entrepreneurs' business models is centered around the so called "build-measure-learn" cycle, which is one of the key concepts of the lean startup methodology (Ries, 2017): Instead of starting with a product, the challenge is to start with a problem that needs to be solved and then developing a minimum viable product (MVP) to start learning to what extent the product is able to solve the problem at hand. This involves measurement and learning along the development process. It should become clear whether the solution is suitable to solve the problem for the relevant user group or whether it is necessary to pivot or make structural changes to the proposal. As the success of each entrepreneurial solution hinges on a number of assumptions, frequent experimentation is necessary to validate or invalidate these assumptions (Chang, 2019). It is therefore that testing of assumptions is a key component of the action learning approach presented in this chapter.

3 The Social Impact Startup Academy (SISTAC)

3.1 Purpose

As we have laid out before, women are key changemakers that have an essential role in achieving the Sustainable Development Goals in Sub-Saharan Africa (United Nations, 2021) while, on the other hand, they face more severe challenges than their male counterparts. However, many approaches to the problem are mainly focused on Western solutions and therefore generally fail to meet the needs of local populations in the developing world. Instead, we propose solutions by which university students work directly with (female) social entrepreneurs from Sub-Saharan Africa to find the best way to implement and adapt the market-creating solutions they propose. Thereby, the underlying thought of founding a Social Impact Startup Academy

(SISTAC) is the notion of market-creating innovations (Christensen et al., 2018) that paves the way for sustainable economic prosperity for the Global South.

3.2 Framework

To foster mutual learning for entrepreneurs and students by working on the real-life challenges of social entrepreneurship, SISTAC was founded—a platform that connects students and social impact startups from seed to exploration stage. SISTAC was co-developed by the Bayer Foundation and Prof. Dr. André Habisch, who teaches a "Social Innovation" program for master students in Business Administration at Ingolstadt School of Management. It was first launched in 2018 with Bayer Foundation as its principal funder. The bi-annual program contributes to Bayer's sustainability ambitions, which in turn support the United Nations Sustainability Goals, specifically #2 (zero hunger) and #3 (good health and wellbeing) (United Nations, 2021). The long-term goal is to implement SISTAC in management education across the Global South in order to effectuate systemic mindset change, inspiring future leaders to recognize the economic and social impact potential of local innovators. With guidance from other partners like university scholars and global players, it aims to battle poverty, malnutrition, and women's health issues using new entrepreneurial approaches—thus helping the young female social entrepreneurs to overcome challenges like lack of public infrastructure and knowledge gaps in resources and applied business. However, the SISTAC network goes well beyond the Bayer Foundation and Ingolstadt School of Management: It is comprised of a variety of companies from different fields, such as the German consulting company Achtzig20 (2021), and female-led Fintech company Unconventional Capital (2021). With respect to access to relevant founder networks, the cooperation with Get in the Ring (2020), a global startup competition has been particularly valuable to increase SISTAC's reach. By establishing the Women Empowerment Award (see below), the Bayer Foundation has been able to reach out to a great number of high-potential female social entrepreneurs who have become part of the SISTAC network.

In its endeavor to help Sub-Saharan African companies to grow their business, SISTAC continues to look for new partnerships with social impact startups—particularly those who are owned and managed by women. The process of selecting partners is a crucial step, as it paves the way for a long-term relationship that requires constant exchange and mutual learning. One challenge in selecting partner companies is to identify companies with the necessary willingness and ability to maintain the communication with the students and respond to their queries. Non-communication and withdrawal from the project with the students have been found to be major issues, so the selection process follows several steps of interaction and clear-cut criteria. First and foremost, the business must have a major focus on Sustainable Development Goals as a whole, with extra emphasis on SDG 2 and 3:

#2 Zero Hunger: Startups focusing on ending hunger, achieving food security and improving nutrition and promoting sustainable agriculture are all in scope.

#3 Good Health and Wellbeing: Startups that focus on ensuring healthy lives and that promote well-being for all ages are the target for this SDG goal.

In selecting suitable partners, the idea of market-creating innovations (Christensen et al., 2018) provides further guidance, as the focus of SISTAC is to collaborate with those companies which have the potential of opening up completely new opportunities of serving the needs of new, mostly less affluent customer segments, creating employment in their target region, providing infrastructure, and thereby increasing wealth for the whole region. Prior to the collaboration, interviews are conducted with selected founders, assessing factors like fit with these goals but also evaluating the maturity and scalability of the business model, as well as the founder's readiness to engage with students on a regular basis.

3.3 Methodology

SISTAC applies an action learning approach that combines the concepts of the lean startup methodology (Ries, 2017) and the Business Model Canvas (Osterwalder & Pigneur, 2013) with hands-on group work and counselling sessions with coaches from different fields. Thereby, student groups from the "Social Innovation" class at Ingolstadt School of Management engage with the course instructors in weekly meetings, while meeting their entrepreneurs outside class in regular intervals. In applying these methods, the students who collaborate with the social entrepreneurs use the so-called Bayer Catalyst Box—a physical and digital box, which provides innovators with tools, learning materials, templates, and an experimentation budget of up to 1500 Euros. The digital box provides access to a step-by-step online course in which innovators learn about the Business Model Canvas and how to run fast experimentation with few resources to gain evidence of customers' behaviors. The Catalyst Box Program includes a variety of tools and methods that allow users to test the underlying assumptions behind the proposed solution through creating mock-ups like landing pages, clickable app prototypes, or flyers that can be presented to relevant target groups. In addition to the online course, the Catalyst Box Program provides access to experienced lean startup coaches for additional 4.5 h of one-to-one coaching. Thus, the students are additionally supported by the lean startup coaches from the Catalyst Box Program, who provide them guidance on testing the assumptions of their proposals. The learning process, which is consistent with the "build-measure-learn" cycle (Ries, 2017), will be explained in the following section.

3.3.1 Problem Identification

In a first step, the students and entrepreneurs identify the most pressing problems in the entrepreneur's business model by means of a rigorous analysis done with a

Business Model Canvas (Osterwalder & Pigneur, 2013). Students and startups meet for the first time in a 3-day workshop, the so-called Social Innovation Bootcamp, where they visualize the startups' Business Model Canvas together. In a next step, the students are asked to identify the most pressing issues within their startups Business Model Canvas. The tools provided in the Bayer Catalyst Box support them with their analysis. Thereby, the entrepreneur's economic needs, as well as the companies' key stakeholder needs, are taken into consideration. Based upon the analysis, the students identify the issues that require the most attention and make a proposal of how they intend to solve them as a group. The process and outcomes of the analysis are presented to the class and the entrepreneurs in order to obtain feedback on the viability of the proposed solution (Fig. 1).

3.3.2 Minimum Viable Product Development

Based on the analysis, the students start working on the solutions that are supposed to solve the key issues in the business model development. The core of this step is the development of a minimum viable product (MVP), as postulated by Eric Ries

Fig. 1 The action learning process in social innovation

(2017). Thereby, based on the startup's needs and the needs of its key stakeholders, the students are asked not only to develop the MVP for their solution (e.g., a customer relationship management system, an online store, a delivery app) but also to test the key assumptions underlying their proposal to validate its viability and fit for the users. Based on their testing, the students are asked to modify their proposal if necessary. The final solution is then handed over to their startup partner in the form of a written paper, explaining how to implement the solution in their company.

3.3.3 Social Impact Measurement and Communication

In the second part of the Social Innovation course, the students are asked to conduct a social impact analysis by calculating the social return on investment (SROI). The SROI was developed by REDF, a venture philanthropy organization in California. It represents a definition and monetization of the impact of particular activities on socio-economic policy indicators (Hall & Millo, 2018). By calculating the SROI for their startups' social impact, the student groups should provide evidence of whether the company's activities really make a social change for their target audience and whether the students' proposal contributes to its success. Resulting from the analysis, further steps need to be envisioned: for example, a high social return on investment should be well-embedded into investor communication and nonfinancial reporting to attract funding. A low SROI should lead to a review of the company's business model and induce questions on the basic assumptions underlying the company's offering.

After completing the program, each student should understand the social role of entrepreneurship in society, analyze a social impact business model, and develop a functioning business solution for social enterprises, henceforth, contributing value for both the students and the startups. The program generates motivation in students as they can create tangible impact with the application of their knowledge and develop personal skills. On the other hand, the startup not only receives qualified support free of charge and access to a strong network of coaches, investors, and partners—founders are encouraged to engage in a constant learning process that challenges them to constantly question and develop their business model. In the following section, we will present selected cases to illustrate the nature of the projects developed by the students and entrepreneurs.

3.4 Selected Cases

3.4.1 Uganics (Uganda)

Uganics is a Ugandan social startup that found a solution to fighting malaria through the introduction of a locally produced organic mosquito soap. The company's vision is to make malaria prevention safe and accessible to everyone without needing to incur behavioral changes. It was founded in 2016 by Joan Nalubega, who had suffered from malaria as a child and decided to address the issue through an entrepreneurial approach (Uganics, 2021) to fighting the life-threatening disease, which mostly affects children under the age of 5: The percentage of total malaria deaths was 67% in 2019 (World Health Organization, 2020). It is therefore that the company targets its activities to provide mosquito-repellent soaps for mothers with little children, along with training to sensitize and educate communities on malaria. While malaria prevention traditionally occurs by means of antimalarial medication, or vector control (insecticide-treated mosquito nets and indoor residual spraying) (World Health Organization, 2021), Uganics opened up a market for integrating malaria prevention into the daily routine of two very different customer segments: tourists and the less affluent local community. In summer 2020, while the world was shaken by the COVID-19 pandemic, Uganics started a cooperation with a student group from the "Social Innovation I" course at Ingolstadt School of Management in Germany. As the business model of Uganics relied heavily on selling soaps to tourists in order to be able to offer them at more affordable prices to the local community, the COVID-19 pandemic affected this income stream very severely. Therefore, the students made efforts to identify alternative ways to finance Uganics' business and its social mission. They proposed a social matchmaking model, whereby both customers and noncustomers from inside and outside Uganda could fund soaps for vulnerable communities so these could be sold at more affordable prices. To support their proposal, the group designed an online payment option to be integrated into the Uganics website, so payment of soaps and donations could be made more convenient.

3.4.2 The Palmoil Honey Company (Kenya)

The Palmoil Honey Company, founded by Deborah Munyekenye in 2017, is an inspiring example of how women can use "feminine wisdom to turn despondency into a bright and wealthy future," as Munyekenye (2018) writes in her story for World Pulse. The company is an agribusiness enterprise that processes palm oil for sale but also offers a variety of other products, such as honey, soap, vegetables, and dairy products. While in principle, this form of agriculture is not new, it represents a market-creating innovation (Christensen et al., 2018) in several respects: With her business, the founder was not only able to offer fresh oil and food to the local community. She also created employment, mainly to the women in her community, as well as a completely new income source for local farmers by buying the berries from their palm oil trees. In spring 2021, a student group from the "Social Innovation I" course at Ingolstadt School of Management started working with the Palmoil Honey Company. The students decided to help Deborah Munyekenye attract more customers by creating a Facebook marketing strategy. Along with a detailed implementation plan, the students created the company profile, fed the channel with information and pictures, and tested the content with relevant target groups. In addition, a corporate design, including a logo (Fig. 2), was created for the company by using the Bayer Catalyst Box.

In the following section, we will describe a further example of how female-led social enterprises with market-creating (social) innovations from Sub-Saharan Africa can be supported in their business model development and growth, namely, Bayer Foundation's Women Empowerment Award (Fig. 2).

Fig. 2 The Palmoil Honey Company logo

4 Bayer Foundation's Women Empowerment Award

4.1 Purpose

As we have laid out above, supporting women as key changemakers is essential in driving sustainable development in the Global South. This has become a central element of Bayer Foundation's architecture and its vision to catalyze science and social innovation for a world with health for all and hunger for none. In 2021, Bayer Foundation has therefore launched its first Women Empowerment Award with the goal to empower female entrepreneurs in the incubation stage to generate social impact in health and nutrition across Sub-Saharan Africa, attracting over 400 applications, 95% of which originated from the target region (Bayer Foundation, 2021). By supporting female entrepreneurs with groundbreaking, market-creating ideas, Bayer Foundation specifically recognizes and celebrates their role as game changers driving sustainability and social impact through entrepreneurial innovation in health, nutrition, and sustainable agriculture.

4.2 Framework

The award includes 25,000 EUR in cash plus an in-kind contribution that equals 25,000 EUR in the form of a 24-week growth accelerator, with the support of the Academy for Corporate Entrepreneurship (2021) and the NGO Endeva (2021). During this period, winners receive tailored support and training for scaling, including active investor feedback. In addition, all winners tap into an extensive network of experts, offering coaching both in health and nutrition as well as sustainable agriculture related focus areas. Furthermore, winners and finalists become part of Bayer Foundation's global alumni and partner network exposing them to investors and other players that can help raise capital and exchange knowledge about experience gained.

4.3 Structure

The growth accelerator is made up of customized workshops and mentoring for all winning teams, including opportunities to exchange with the other awardees. The focus lies on key startup accelerator topics as well as social ecosystem barrier topics that help the social enterprises grow and scale their models. During the accelerator they have opportunities to pitch to investors. The accelerator consists of a training and mentoring program to help teams along their intrapreneurship journey to test and validate new innovative ideas. Teams require external weekly mentoring, assignments, and support in building and executing experiments. This includes 12 90-minute virtual mentoring sessions per team, all educational materials for the accelerator and workshops (assignments, tutorials, mural canvas', etc.) and project management. The mentors "meet the team where they are" and offer the most needed support, leveraging any curriculum or other content mentors have access to. In addition, social enterprises are often constrained by barriers in the ecosystem, such as unconducive regulation, lack of user capacities, or limited infrastructure. A system perspective helps to identify potential allies to address these barriers, as well as solutions to collaborate effectively. Three 1/2-day Workshops are planned throughout the 24-week program to help enterprises define their ecosystem scale up strategy. They can be attended by all five teams using an online webinar format and will be delivered by two mentors (Bayer Foundation, 2020). The structure is as follows:

1. **Customer and Business Model Gaps**
   Analyzing and prioritizing critical assumptions and weaknesses around:
   - Early adopters, customer segmentation, opportunity size
   - Competitor landscape, traction channels, business model
   - Messaging and startup financials
2. **Ecosystem Barrier: Build Hypothesize**
   Identifying ecosystem barriers and potential partners:
   - Introduction to systems approach
   - Mapping the ecosystem
   - Identifying barriers to scale and potential allies
   - Building hypothesis for scaling partners
3. **Go to Market Launch and Scale Up**
   Analyzing and prioritizing the product roadmap with a go to market strategy:
   - Product owner and agile sprint methodology
   - Critical features and Kano Model
   - Customer journey and conversion (pirate metrics)
4. **Ecosystem Barrier: Concretize**
   Develop scaling pathways via new partnerships:
   - Review insights on potential scaling partners
   - Select a pathway to scale
   - Develop partnership approach (incentives/governance)
5. **Ecosystem Barriers: Prepare for Implementation**

Plan for execution and understand challenges in partnership management:
- Develop implementation plan
- Identify risks and mitigation strategies
- Preview exit strategies from partnerships

6. **Customized Mentoring: Pitch Prep and Raising Funds**
   Analyzing your investment requirements and preparing to pitch investors:
   - Understanding your investment requirements
   - Identifying and targeting suitable investors
   - Developing your pitch deck
   - How to deliver your investor pitch

Once the first batch of winners has undergone this process, the program will be analyzed and improved in an iterative process. Along the scaling journey of the winners, Bayer Foundation will furthermore offer access to resources in order to help realize the full potential of the social enterprises and their market-creating innovations.

4.4 Selected Cases

Vetsark (Nigeria)

The Problem

In Sub-Saharan Africa, livestock farming is a major contributor to economic growth. However, the occurrence of livestock diseases like African swine fever, fowl cholera, PPR, and foot and mouth disease is not only rampant but usually strikes without warning. This results in an estimated loss of $2 billion dollars annually. In Nigeria, this problem has worsened because farmers and the federal government alike are unprepared and ill-equipped to prevent and quell outbreaks. Farmers are poorly educated on disease symptoms, farm management, record-keeping, lack affordable tools, veterinary products, and access to quality disease-resistant animal breeds. Similarly, the government tracks disease spread manually, often catching outbreaks too late. All these result in the potential closure of farms and loss of hundreds of thousands of jobs (Vetsark, 2020).

The Solution

Vetsark's Farmgod application is a farm management app which allows farmers to track and monitor their livestock production and financial transactions on a daily basis. Unlike most other farm management applications, Farmgod also offers real-time disease surveillance mechanism for predictive analytics on disease spread so that countermeasures can be implemented quickly Farmgod and uniquely addresses the challenges that livestock farmers face with respect to pests and diseases and poor digitization of their business operations by offering a bundle of agricultural services in one application. Vetsark's product development is guided by design thinking, rapid prototyping, and a Markets for the Poor (M4P) approach. Vetsark has worked closely with 100+ stakeholders and 3000+ farmers to date. Due to its digital nature, it

Fig. 3 The founder of Vetsark, Cynthia Mene

is an easily scalable solution that helps farmers record, track, and analyze data on livestock production and financial transactions. It offers a low-cost tool for sending disease alerts and providing precision agricultural advisory services (Vetsark, 2020) (Fig. 3).

Kaaro Health (Uganda)

The Problem

In Uganda, more than 75% of all private healthcare facilities are located in major urban areas (Dowhaniuk, 2021), while roughly 80% of the population lives outside urban areas (World Bank Group, 2021) and, therefore, have limited access to healthcare services. This leads to severe challenges in access to health and medicine for rural populations, which are typically especially vulnerable (Fig. 4).

The Solution

Kaaro Health provides rural health facilities with remote access to doctors and specialists so that women in rural communities do not have to walk long distances to access healthcare (Fig. 4).

Furthermore, Kaaro Health aims to finance healthcare facilities to support rural healthcare entrepreneurs. The social enterprise supplies healthcare SMEs with financing instruments they need to expand their operations into new underserved areas. Kaaro Health's work helps to provide more sophisticated medical equipment in rural areas. Therefore, Kaaro Health provides targeted financial management training to current and prospective clients, so they have the skills they need to grow and sustain their businesses. Their advisory services prepare healthcare SMEs with growth potential to qualify for financing and to mitigate the risk of lending to these businesses. On a practical level, Kaaro Health manufactures and

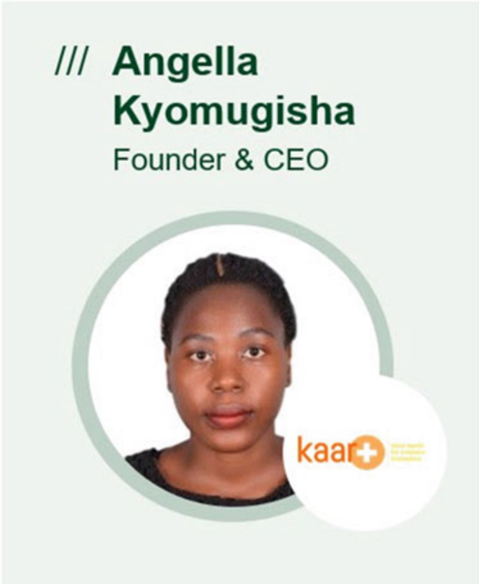


Fig. 4 The Founder of Kaaro Health, Angella Kyomugisha

installs solar-powered, telehealth-connected container clinics in rural and hard-to-reach villages across rural Uganda. Each rural clinic uses the Internet to connect remotely to 24 city-based medical doctors who provide life-saving treatment and public health messaging. Clinics are managed by nurses and local leaders as a community resource, while patients pay a small fee to access doctors remotely, saving up to 85% in costs and ensuring each clinic remains sustainable. In 68 of Kaaro Health's 74 locations, the container clinics are the only health facility within a 20 km radius (Kaaro Health, 2020).

5 Conclusion and Call to Action

In this contribution, our goal was to highlight the social role of female social impact entrepreneurship in Sub-Saharan Africa. Albeit it is facing multiple challenges, it clearly possesses potential to contribute to the realization of UN-SDGs through (market-creating) innovation in their home countries. We have shown how business education could contribute to fill the gap of lacking support infrastructure for these promising entrepreneurial endeavors. As a part of Bayer Foundation's funding infrastructure, SISTAC involves MA and MBA students in business and business engineering in order to analyze and support promising social impact startup founders in Africa and other parts of the Southern hemisphere. One of the medium- and long-term goals of our efforts is to take initiatives like SISTAC and its methodology to other countries and thus to extend the network of academics, practitioners, and startups to a global level in order to use entrepreneurial approaches for achieving the UN Global Goals in as many different areas of the world as possible. A pilot project with Purdue University from Indiana (Purdue University, 2021) was established to teach the action learning approach from the Social Innovation classes in Ingolstadt in different cultural contexts. Thereby, students from Purdue University will work together with Saving Grains, an early-stage social startup from Berlin that provides digital, platform-based solutions to reduce postharvest losses among smallholder farmers in West, Central, and East Africa (Saving Grains, 2020). Similarly, Bayer Foundation's Women Empowerment Award and the connected growth accelerator program described above provide a unique opportunity for incubation stage social impact startups across the Sub-Saharan African region to enhance the reach and impact of their potentially market-creating innovations.

By disseminating the SISTAC methodology and the Women Empowerment Award and applying it in different contexts, our aim is to encourage social innovators from different fields and cultural areas to join forces to achieve the UN Global Goals. In particular, we want to inspire female entrepreneurs to put their innovative potential into action and tap into the networks that help them achieve a greater good and overcome the challenges of being a social entrepreneur. Thereby, they may also serve as a role model for a large number of women across the African continent, who consider founding their own business in order to make a living for themselves and their families as well as contribute to the socio-economic development of their countries.

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Eva Vosen is a doctoral candidate at Catholic University Eichstätt-Ingolstadt (KU) in Germany, researching in the fields of Corporate Sustainability, Business Ethics, and Social Innovation. As a lecturer in the master class "Social Innovation", she is a founding member of the Social Impact Start-up Academy (SISTAC). At SISTAC, Eva is responsible for designing and coordinating Action Learning environments for students and social impact start-ups, managing the relationships with founders, and expanding the SISTAC network. Being the Women and Equal Opportunity Officer of the faculty for business and economics at KU, the role of female leaders in academia as well as in social entrepreneurship are of particular interest to her.

Stefan Wilhelm is a Social Entrepreneurship and Social Innovation veteran with 10+ years of professional experience in the sector and a passion for Impact Measurement and Management. Before joining Bayer Foundation, he helped build and scale two award winning Social Impact Startups in Germany, Colombia and Mexico, where he also worked as a Senior Consultant for CAF—Development Bank of Latin America.

At Bayer Foundation, Stefan is responsible for the Social Innovation program portfolio with a specific focus on high impact ventures in sustainable agriculture and access to health. Stefan holds a diploma in Cultural and Business Studies from the Universities of Passau and Salvador da Bahia as well as a Master's degree in Public Policy from Humboldt University Berlin and Europa University Viadrina. He is a Global Good Fund Fellow, LAJF scholar, and a Vodafone World of Difference Fellow. Stefan is fluent in German, English, Spanish and Portuguese.

Andre Habisch an economist and theologian. He is Professor of business ethics at the Faculty of Business and Economics at Catholic University of Eichstätt-Ingolstadt, where he teaches Corporate Responsibility, Social Innovation and Sustainable Entrepreneurship. As part of his teaching activities in the masterclass Social Innovation, he developed an action learning approach to social innovation that involves cooperations with social impact entrepreneurs. Besides teaching, André is in charge of the university's Entrepreneurship and Innovation master programme and is one of the founding members of the Social Impact Startup Academy (SISTAC) e. V. He also chairs the Board of Trustees of the Bayer Cares Foundation.

How International Student Networks Contribute to Social Innovation in Their Host Country: The Case of DEGIS in Germany

Alexander Ruthemeier, Jonathan Lätsch, and Mikalai Vincheuski

1 Introduction

Germany is facing a crisis. Acute labor shortage and lack of entrepreneurship are hampering social innovation from taking place nationwide. At the same time, international students continue to enroll in German universities in high numbers. International students in Germany, especially when participating in a student network, provide untapped potential for the German labor market. This article examines how international students in Germany, especially when part of an international student network, can positively impact social innovation and looks at the bureaucratic challenges they face in the process. The international student network DEGIS is used as a case study, as it is the largest international student network in Germany, measured by the number of international student members.

1.1 International Students in Germany

German universities are very popular among international students. According to survey data by the German Academic Exchange Service (DAAD), 330,000 international students were enrolled in the 2020/2021 winter semester (DAAD, 2020). The motivation for these students to leave their home country and travel to Germany to pursue a higher education varies. Pull factors include the good reputation of German universities abroad and the strong belief that the program of study will open doors to good career opportunities later in life (ICEF Monitor, 2019). In a survey conducted by the student service provider Expatrio, almost half of the participants indicated their desire to look for job opportunities in Germany after completing their studies (Expatrio Annual Survey, 2021). With the number of international students at

A. Ruthemeier (✉) · J. Lätsch · M. Vincheuski
DEGIS - German Association for International Students, Berlin, Germany
e-mail: alex.ruthemeier@degis.info; jonathan.laetsch@degis.info; mikalai.vincheuski@degis.info

A. Ruthemeier et al. (eds.), *The Global Impact of Social Innovation*, Management for Professionals, https://doi.org/10.1007/978-3-031-03849-5_19

German universities rising annually, it is more important than ever to provide an environment for these students in which they can learn to overcome the challenges of being a *Bildungsausländer*[1] and develop the necessary expertise to succeed in Germany.

1.2 International Student Networks in Germany

International student networks offer international students the opportunity to do what has been stated before: overcome challenges and develop expertise. As part of an international student network, international students can connect and exchange ideas with other international students and develop skills together. In this unique role as a link between international students and a forum for personal development, international student networks act as incubators for social innovation among the international student community of the respective host country and are a major contributing factor to their success. This article adopts the definition of social innovation used by the Organisation for Economic Co-operation and Development: the “design and implementation of new solutions that imply conceptual, process, product, or organisational change, which ultimately aim to improve the welfare and wellbeing of individuals and communities” (OECD, n.d.-a). This article views social entrepreneurship and a skilled labor force as a breeding ground for social innovation. In Germany, international student networks are found mostly at university level or as part of a supranational initiative. International students usually rely on the initiative of *Studierendenwerke*[2] at their university or the Europe-wide Erasmus Student Network. Recently, the emergence of a new national network for international students is filling this gap.

1.3 DEGIS and Social Innovation

The *Deutsche Gesellschaft internationaler Studierender (DEGIS)* [3]is the largest international student network in Germany, measured by the number of international student members. The mission of DEGIS is to help international students across Germany exchange ideas and develop theoretical knowledge and collect practical experience in order to succeed. In doing so, the organization connects and empowers the international student community in Germany. As a member of DEGIS, it is possible to gain access to useful resources and get involved in various projects and initiatives that foster skills and increase future employability. A decentralized, nonprofit organization catered toward international students in Germany, DEGIS is

[1] Students at German institutes of higher education that concluded their entrance qualification abroad.

[2] A university institution that offers support to students.

[3] A nonprofit organization that connects international students in Germany.

shaping the international student community across the country. DEGIS provides international students with the environment and tools to become the social entrepreneurs of tomorrow, counteracts the lack of skilled labor force, and in doing so positions itself at the forefront of driving social innovation in Germany forward.

2 Entrepreneurship

2.1 Definition of Entrepreneurship

Entrepreneurship has the power to fundamentally transform society. In essence, entrepreneurial ideas are answers to problems that already exist. These problems may have different origins, but they all have one thing in common: they stifle growth and progress. By resolving these issues, entrepreneurs are actively contributing to the advancement of society. Progress in this context, like its opposite, can take on various forms, ranging from economic expansion to sustainable development to social reform. As a result, entrepreneurship has the potential to promote innovation and positively influence individuals, regions, and the entire planet.

2.2 Student Entrepreneurship and the Entrepreneurial Mind-Set

To better understand entrepreneurship, it is crucial to realize an entrepreneurial mind-set is not something people are born with but rather a learned attitude. A “collection of skills that allow individuals to harness opportunities, overcome obstacles, learn and implement strategies and thrive in all sorts of competitive environments,” an entrepreneurial mind-set is shaped throughout the course of a person’s life by external factors such as experience and schooling (Constable, 2021). With all the benefits that entrepreneurship brings, developing entrepreneurial skills is important for national governments and regional institutions alike. The channel to do so is often through education. Already in 2007, the European Commission noted that it wanted “to focus on learning about entrepreneurship from primary school through to university (European Commission, 2007). Entrepreneurship at the university level is widely recognized as a catalyst for innovation (Hannon, 2013). At higher education institutions all over the world, entrepreneurship is becoming a staple in the course curriculum to prepare students for success after graduation. In the current job market, entrepreneurship is a valuable skill to have (van Praag & Versloot, 2007). This is applicable in the context of setting up a company and also revitalizing a traditional business. According to the Guardian, “big companies want to employ what are known as ‘intrapreneurs,’ people who can create change within a firm and break through institutional inertia and bureaucracy” (Hodges, 2014).

2.3 Social Entrepreneurship and Different Types of Entrepreneurship

Entrepreneurship is not the same and comes in different forms. For example, small business entrepreneurship takes place when a person opens a small business without the intention of making it a franchise (i.e., local grocery store) (Northeastern University, n.d.). Scalable startup entrepreneurs begin their businesses on a small scale and only grow as a result of external investment (i.e., Facebook) (Northeastern University, n.d.). For the purpose of this section, the focus will be on social entrepreneurship. Social entrepreneurs "are willing to take on the risk and effort to create positive changes in society through their initiatives" (Hayes, 2021). Social entrepreneurship has gained mass popularity in recent years, and more businesses are being created with social impact at their core than ever before. The ascent of millennials into senior positions has acted as a spur for this development. Millennials (born between 1980 and 2000) grew up in a time of global uncertainty and are now betting on the potential of social entrepreneurship to tackle the most pressing challenges of our time (Goldschein, 2020).

In this context, universities provide the appropriate framework for students to delve into social entrepreneurship. Universities are embracing the need to offer social entrepreneurship initiatives for students in order to remain relevant in a very competitive environment of higher education institutions (Păunescu et al., 2013). In Germany, numerous universities offer courses on social entrepreneurship (van Treel, 2021). In addition, students in Germany have the opportunity to receive support from accelerators and incubators to make their social enterprise come to life, including the "Programm Engagement mit Perspektive" (PEP) and "Social Impact" (tbd, n.d.). Unfortunately, these programs are limited to students from Germany or from EU-member states. International students from outside the EU face various challenges when it comes to social entrepreneurship as will be explained hereinafter.

2.4 Challenges for International Students in Germany to Pursue Entrepreneurship

Pursuing entrepreneurship for international students in Germany stemming from outside the European Union is a big challenge due to rules and regulations brought forth by German law. The students must first check their residence permit if self-employment is even allowed (BMWi-Existenzgründungsportal, n.d.). If permitted, non-EU students are able to work for 120 full or 240 half days during the year (IQ Fachstelle Migrantenökonomie, n.d.). This means that non-EU students who are permitted to run a business will need to do so on a part-time basis. If they want to work more hours, they need to apply for it with the *Ausländerbehörde*.[4] If not permitted by their residence permit, non-EU students can apply for self-employment

[4] An office that acts as a touch point for bureaucratic affairs affecting foreigners in Germany.

status at the Ausländerbehörde, a “Erlaubnis zur Ausübung einer Selbständigkeit” in line with § 21 para 6 of the German Residence Act (AufenthG). They will be granted self-employment status as long as the business does not compromise their studies (part-time) and they fulfil the necessary requirements and qualifications in the field (IQ Fachstelle Migrantenökonomie, n.d.). It is important to note that for international students, both applying for more working hours and for self-employment status hardly ever gets granted by German authorities. This needs to change: it needs to be easier for international students to have these permits in the future. The reasons are as clear as they are preventable.

The jungle of German bureaucracy is hindering social innovation from taking place among international students. The international student community has endless potential to contribute to the social entrepreneurship landscape in Germany, yet legislative hurdles are hindering this positive development from taking place. International students bring with them a plethora of skills that could help them when it comes to creating a business with a social impact in a foreign country. First and foremost, they bring with them a new perspective on challenges that need to be addressed with social entrepreneurship in developing countries. The premise that social entrepreneurship may fill a vacuum in aid that traditional techniques fail to fill is broadly accepted in the international development community (Russianvagabond, 2021). The establishment of various funds and initiatives in recent years by the United Nations (Global Development Innovation Ventures fund) and USAID/DfID (Global Entrepreneurs Council) demonstrates this trend. An international student from a developing country studying in Germany thereby may be able to provide valuable insights into the societal challenges faced by their home country that otherwise would have been overlooked and that can lead to more efficient problem-solving in the social enterprise sector in Germany. In addition, the organic connection between international students from developing countries and their home countries is important to drive forward the relationship between Germany and respective countries. Cultural understanding is something that takes years to perfect as an outsider. Communication is key in providing solutions to development problems, and international students have the skills and understanding to provide a valuable asset in this environment. If international students would be more flexible to pursue a social enterprise during their studies, they would be able to contribute to German society and the goal of its national sustainability agenda, which are deeply intertwined with the Sustainable Development Goals (SDGs) of the United Nations.

2.5 How DEGIS Is Fostering Social Entrepreneurship Among International Students in Germany

From a survey conducted by Expatrio, it is evident that international students are not yet very interested in starting their own business in Germany (Expatrio Annual Survey, 2021). DEGIS is looking to fill this gap. As part of the DEGIS community, international students are given the opportunity to gain practical experience at a social enterprise in various functions. This allows them to sharpen their entrepreneurial skills and continuously learn about the importance of social impact. The DEGIS community consists of incoming international students and international students on site enrolled in an institution of higher education in Germany. It is up to each DEGIS member how much time they choose to devote to the community. International students who want to gain access to exclusive workshops and events and also are able to dedicate 2–3 hours per week on volunteering sign up for an active membership. An active member automatically becomes part of (currently) over 50 City Chapters in Germany. An international student can then pursue a role in human resources, events and projects, marketing, and business development as part of a City Chapter (Lätsch & Neemachwala, 2021). In this position, they are able to grow the membership of the City Chapter and the awareness of DEGIS. It is also possible for DEGIS members to take on leadership roles in these departments or become a President of a City Chapter that gives them practical insights into what it means to lead a team and encourages them to take on similar positions after graduation. The role of a City Chapter is to strengthen the community of international students in the City by organizing welcome events for newcomers and meet-ups for established international students. A City Chapter is also responsible for addressing the challenges that international students face on site by corresponding with the universities to find solutions and establishing contact with companies and organizations to provide international students with local internship and job opportunities.

By giving international students the opportunity to engage in building DEGIS by growing the size and impact of their City Chapters, it gives them both a feeling of belonging to a community and at the same time sharpens their entrepreneurial skills relevant to start their own business after graduation. A marketing manager at a City Chapter at DEGIS, for example, has the responsibility to create awareness of the respective City Chapter and its respective services by using digital marketing. Whether they do this through social media campaigns or online workshops or any other method is up to them. Similarly, an events and projects manager at a City Chapter can choose the agenda of how to move forward with the events and projects for the coming semester. By empowering its members, DEGIS sharpens their entrepreneurial skills in the process. Likewise, as part of a social enterprise, DEGIS members are able to experience firsthand the importance of social entrepreneurship. DEGIS aims to fill the social gap international students face when arriving or studying in Germany. By participating in the organization, DEGIS members are driving forward that mission. DEGIS has two initiatives that embody this effort: the Buddy Program (BP) and the Global Ambassador Program (GAP). The BP links incoming international students with international students already in Germany. The aim of the BP is to ensure the smooth transition of incoming students into a foreign environment. The GAP wants to achieve a different impact for members of the DEGIS community. It wants to ensure international students have the opportunity to act as ambassadors for DEGIS and Germany as a place of study towards students in their home countries and likewise function as an ambassador for their home country in Germany.

In essence, DEGIS is both a unique concept and the embodiment of social innovation. In offering the opportunity to take on certain roles within the network for its members at a local level, DEGIS is driving forward social innovation for international students in Germany.

3 Labor Force

3.1 Definition of Labor Force

According to the OECD, the labor force consists of “persons who fulfil the requirements for inclusion among the employed (civilian employment plus the armed forces) or the unemployed” (OECD, n.d.-b). A skilled workforce is fundamental in creating employment, economic growth, and innovation and is well established among the big players in international development. The World Bank determined that certain skills (technical, leadership, problem-solving) are necessary for workers in a continuously transforming global economy (World Bank, n.d.). The International Labour Organization (ILO) went one step further, addressing that G20 countries in particular need to provide their workers with opportunities to develop certain skills in order to foster sustainable development and be prepared for a changing job market (International Labour Office, 2011).

3.2 Why Germany Is Lacking a Skilled Labor Force

Germany has been facing the challenge of a shrinking skilled workforce in recent years that has been exacerbated by the COVID-19 pandemic. In order to maintain a competitive economy on the global stage, securing a qualified workforce will be critical moving forward. It is becoming increasingly difficult to fill open positions in certain industries and areas in Germany, most notably health and STEM-related industries in Eastern and Southern Germany (BMWi-Existenzgründungsportal, n.d.). This negative trend stems primarily from two factors: an aging population and a low birth rate.

Germany is experiencing a dramatic shift in age structure. While the general population is getting older, there will be less working age people coming after (Federal Ministry for Economics Affairs and Energy, n.d.). According to a survey conducted by the Federal Statistical Office, more than a quarter of people in Germany are aged 60 and above (Federal Statistical Office, 2016). The report predicts that by 2050 this number will have risen to one-third of the population (Federal Statistical Office, 2016). The extremely low birth rate over the past decades has contributed to the lack of young people entering the workforce. Many women are putting off giving birth in favor of searching for the perfect job and partner (dw.com., 2021). In 2019, Germany saw almost ten thousand less births than the year before (Federal Statistical Office, 2020). This shift in age structure is widening the gap between innovation and a skilled workforce.

The lack of a skilled workforce is evident in Germany and poses a huge risk for companies and a country globally recognized as an economic powerhouse. In an interview with Süddeutsche Zeitung, Federal Labor Agency Chairman Detlef Scheele noted that “Germany is running out of workers” and that “from nursing care and climate technicians to logisticians and academics, there will be a shortage of skilled workers everywhere.” (Hagelüken, 2021). Achim Deckes, deputy managing director of the Association of German Chambers of Industry and Commerce (DIHK), also highlighted that the lack of skilled workers is a current problem in Germany: “the shortage of skilled workers in companies is back: faster and to a greater extent than many expected” (Bakir, 2021).

3.3 Foreign Workers as a Solution to the Skilled Labor Force Problem in Germany

Germany has responded to its shrinking skilled workforce by tapping into a new resource of skilled workers: qualified professionals from abroad. Recruiting skilled workers from abroad has been an increasing trend in recent years, especially in sectors requiring a degree of higher education, such as STEM. Hiring skilled talent from abroad has been particularly common in small- and medium-sized enterprises (SMEs) across Germany for a while (KfW Bankengruppe, 2017).

In addition to increasing international competitiveness, hiring foreign talent strengthens cultural diversity at firms. The positive impact that cultural diversity has on improving performance at a company and fostering regional development is not to be underestimated (Liu, 2016). At company level, migrant workers widen the perspective of other workers by bringing in new ideas from an outside perspective and influencing their problem-solving skills in the process. This impact can be useful during periods of company innovation and product development.

3.4 International Students as a Complementary Solution to the Skilled Labor Force Problem in Germany

While it is challenging for international students to stay in Germany after graduation, it is relatively common and important. Around half of international students stay in Germany after their graduation (Bruder et al., 2015). International graduates that will be entering the labor market in Germany provide a tremendous opportunity for filling parts of the current gap in the labor market. As such, international students represent the skilled workforce of tomorrow in Germany. On top of all the positives that foreign workers bring to companies and the region, international students bring additional benefits such as educational qualifications and young age.

Education is widely recognized as a driving force for economic growth. The correlation between higher levels of education and a more skilled workforce is apparent (International Labour Office, 2011). In Germany, international students are oftentimes pursuing Bachelor or Master degrees and therefore will certainly embody the skilled workforce in the future on a national level. In a survey conducted by the student service provider Expatrio, almost half of the participants indicated their desire to look for job opportunities in Germany after completing their studies (Expatrio Annual Survey, 2021). The results of the survey indicate that the desire for international students to pursue a career in Germany after graduation has the potential to fill the gap of a lack of skilled workers in Germany. At the same time, international graduates are young when entering the labor market and are already partially integrated into German society through their university experience. In Germany, a country where the population is growing older and there is a strong need for young people to enter the workforce, international students graduating and becoming skilled professionals on the labor market offer an opportunity to both benefit the national economy and fuel innovation.

3.5 How DEGIS Is Helping International Students Become More Equipped to Enter the Workforce

DEGIS is equipping international students to enter the workforce in Germany. As a volunteer organization, DEGIS helps strengthen the competitiveness of international students when entering the job market in Germany. At DEGIS, international students increase their employability by growing their network, gaining practical skills, and boosting their CVs.

DEGIS allows its members to connect with other international students in Germany. This exchange with like-minded individuals not only helps members tackle challenges of living and studying in Germany but also expands their network of contacts and mentors. Having both in a student's network dramatically increases the chances of employability. Mentors can facilitate the transition into the job market by offering useful tips on the application process. Contacts in relevant fields are also able to ease the entry into the labor force. They can provide advice on applying for a specific job and sector and increase the chances of an international student being taken over. Members of the DEGIS community also help each other. After one member of the DEGIS community experienced discrimination during an interview process, they reached out to the DEGIS community, and another member successfully connected them to another opportunity.

Being part of the DEGIS community, the students are also better able to focus on their studies and personal development which strengthen chances of employment. Additionally, DEGIS has partner companies that members can access.

As elaborated on earlier, the international students that are part of the DEGIS community are able to gain practical experience by taking on various active roles in the community. These roles offered in City Chapters span from human resources, events and projects, marketing, and business development to President. They allow students to gain crucial skills needed to lead and be a part of a team in a professional career after graduation.

At the same time, volunteering at DEGIS offers international students the opportunity to boost their CV. Volunteering in general is a great way to demonstrate to future employers that you are capable of balancing your studies and a line of work where you help others. On top of various hard skills addressed above, volunteering at DEGIS also fosters certain soft skills such as time management, communication, and others. Listing a volunteer experience on a CV is also useful for those who do not yet have any other professional experiences to report. It can add an aspect to their CV that sets them apart from the competition and helps get the dream job.

A guest comment by Alexander Ruthemeier, Founder and Managing Director of DEGIS about international students in the context of diversity

Thinking about diversity involves various elements, for example – on the first layer of a circle – the age, gender, and sexual orientation, and, among others on the second layer, the cultural background, socio-economic status, work background, and education (Hubbard, 2004).[5]

Research on expatriates (skilled people migrating abroad for work) has found that companies actively supporting diversity (including all diversity elements as mentioned above) on average have a 19% higher revenue stemming from innovation projects and a 9% higher revenue margin (HBR, 2018).[6] With a specific focus on ethnical diversity, it can be stated that its influence on the outperformance of a company is significant (33–36%) (Mc Kinsey, 2020).[7]

Looking into the youngest coalition agreement of the potential new German Federal Government certain aspects of diversity can already be found: “Challenges for women and people with migration background for the access of financing and subsidies will be reduced” (Coalition agreement, 2021, p. 30) and further “Migrant organizations [. . .] are important partners” (ibid, p.118).[8]

Following the explanations of this book chapter, DEGIS is especially focusing its endeavors on international students, thus a combination of the elements cultural background and education as explained above. Looking into the theory specifically focusing on international students transitioning into the labor market, this specific group has not yet sufficiently been researched empirically; therefore many assumptions must be made from our daily work:

1. International students have the potential to become the social entrepreneurs of tomorrow.
2. International students can help counteract the lack of skilled labor force.

DEGIS is an organization facilitating certain elements of diversity by supporting international students. Those students are needed not only for selfish reasons like

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[5] Jirincova, Helena. (2013). Potential Future Managers and Their Opinion on the Issue of Diversity, Inclusion and Their Possible Use in Management. Journal of Competitiveness. 5. 37–50. 10.7441/joc.2013.02.03.

[6] https://hbr.org/2018/01/how-and-where-diversity-drives-financial-performance.

[7] https://www.mckinsey.com/featured-insights/diversity-and-inclusion/diversity-wins-how-inclusion-matters

[8] https://www.spd.de/fileadmin/Dokumente/Koalitionsvertrag/Koalitionsvertrag_2021-2025.pdf.

filling the pressing gap for skilled labor but especially because the diverse backgrounds foster innovation as intrapreneurs (working for a company) and entrepreneurs (founding an own company). As Founder and Managing Director of DEGIS, I am happy to see the emerging initiatives in private, public, and political space. Our growing association is looking forward to contributing to this overdue human development.

4 Conclusion

This article demonstrates that international students in Germany, especially when part of an international student network such as DEGIS, can positively impact social innovation. International students that are part of DEGIS are able to take on various practical roles that allow them to develop their skills in social entrepreneurship which they can later transfer to the labor market after graduation. Similarly, international student networks such as DEGIS offer the labor market a pool of young professionals that are ambitious and educated. Both aspects highlight the importance of DEGIS and similar student networks, as drivers of social innovation in Germany. Therefore it is not only important that the processes of self-employment for international students are simplified but also that international student networks, like DEGIS, receive support from the German government and academic institutions.

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Alexander Ruthemeier began his career in financial services before he moved from Singapore to Berlin working for Rocket Internet, wefox, and Element, among others. As a seasoned entrepreneur and founder of Expatrio and DEGIS, he is also pursuing his academic path as founding director of the Steinbeis Institute for Global Entrepreneurship and Innovation where he researches and teaches about migrant entrepreneurship.

Jonathan Lätsch completed his secondary education in the US and then returned to Germany to pursue a BA in International Politics and History from Jacobs University Bremen. He then went to study International Affairs at Sciences Po Paris and King's College London, graduating in 2019. Driven by his interest for knowledge transfer and intercultural communication, he is currently responsible for public affairs, public relations, and partnerships at DEGIS.

Mikalai Vincheuski came from Belarus to study in Germany as an international student and finished a BA in Anthropology in the Free University of Berlin. During his study time and beyond, he was engaged in different roles in the international student Organization AIESEC for 7 years, finishing his path as President of AIESEC in Germany. Following his passion for NGO management, leadership development and intercultural understanding, he is currently responsible for organizational development and network management at DEGIS.