

EGOS 2020

THE ROLE OF TRANSFORMATIVE BUSINESS ECOSYSTEMS IN PURSUING SUSTAINABLE ECONOMY – CASE OXYGEN2050

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Introduction

Social entrepreneurship (Mair & Marti, 2006; Zahra, Gedajlovic, Neubaum, & Shulman, 2009) and impact investment (Bugg-Levine & Emerson, 2011; Höchstädter & Scheck, 2015) have garnered interest especially in the realm of practitioners, and to an extent also among academics. Social entrepreneurs and impact investors have a twofold perspective to the global environmental and social problems: on the one hand they are intrinsically motivated to contribute to a ‘better tomorrow’, and on the other hand they view the problems as also business opportunities. These viewpoints also constitute a continuum between fully philanthropic activities and fully profit oriented activities (Brandstetter & Lehner, 2015; Sainio, 2018; Seymour, 2012), where the endpoints are populated at one end by NGOs and philanthropists, and at the other by traditional corporations and investors. The social entrepreneurs and impact investors populate various areas on the continuum, joined together by their belief in the possibility of combining the perspectives. In this article we cluster these entrepreneurs and investors under the label of ‘transformative business’, explicated in more detail later.

As the awareness of the looming global environmental calamities (IPCC, 2018) meets the global socio-political turbulence (Kobrin, 2015, 2017; Rodrik, 2018), the faith in the aptitude

and abilities of the established corporations to contribute to a more sustainable future is wavering (Jones, 2015). Both social entrepreneurship and impact investing can be viewed as phenomena symptomatic of this loss of faith: an increasing number of the individuals represented in either category have a background in the more traditional business settings (Engström et al., 2019), with personal histories characterized by an internal dialogue resulting in a change in their working lives. These types of social entrepreneurs and impact investors enter the realm of transformative business equipped with the acumen and knowhow accumulated through their experience in more traditional business settings, and utilize that experience in pursuing the intrinsically motivated goals.

One of the insights imported from the traditional to the transformative business is the appreciation of social capital (Lee & Jones, 2015; Nahapiet & Ghoshal, 1998), aptly coined in the familiar saying of “it’s not what you know but who you know”. Taken individually, the possibilities of social entrepreneurs or impact investors to invoke systemic level change (Schuelke-Leech, 2018) are scant, especially when compared to the socio-economic might of the behemoth corporations deeply embedded in the prevailing socio-economic regimes they have for the last century been shaping (Geels, 2010; Giddens, 1984). However, equipped with the personal level networks and networking skills, and the appreciation of the impact of social capital, the types of transformative business people here discussed see potential in creating ecosystems of like-minded individuals: through loosely coupling together the skills and resources of a variety of transformative business people, it could be possible to trigger something – to exploit the architectural leverage embedded in ecosystems (Thomas, Autio, & Gann, 2014) in order to create momentum for larger socio-economic systemic change.

One of the emergent ecosystems grounded on this type of reasoning is a Scandinavian network called Oxygen 2050, which defines itself as follows: “Oxygen 2050 is a grassroots movement of entrepreneurs for transformative, inclusive and sustainable 21st century society.”¹

¹ See <https://oxygen2050.com>

Founded in 2018, the “movement” brings together self-selected social entrepreneurs and impact investors without an explicated agenda or fixed operational forms. The ideology underpinning the Oxygen 2050 builds on the notion that through creating an unrestricted and loosely governed space for the likeminded individuals to meet, it is possible to “combine the genuine good with the profitability... build genuinely good and profitable businesses to create a better society and to protect the nature”².

It is the aim of our research to explore the mechanism through which these aspirations embedded in the ideology of Oxygen 2050 may or may not be realized. As such, our research contributes to filling the lacunae in academic knowledge in two contemporary and relevant areas: first, we contribute to the understanding of the role of interorganizational and interindividual networks in tackling the ‘wicked problems’, and secondly we contribute to the nascent literatures of social entrepreneurship and impact investment from an ecosystem perspective. Our research question is simple: How does the value of transformative business ecosystems materialize?

Our paper unfolds as follows: first we outline the theoretical framework orienting our study, followed by introducing our case context and elaborating our empirical methodology. In findings we flesh out the emerged insights we subsequently discuss. To conclude, we highlight our contributions, address the limits of the study and propose further research avenues.

Theoretical background

The focus of our research in terms of unit and level of analysis is on the interorganizational networks, not their constitutive parts. Therefore we synthesize the literatures of social entrepreneurship and impact investing under a more generic label of transformative business that we conceptualize as follows: transformative business entails actions and agents that follow business logic and operational models in pursuing profit, but simultaneously view profits in

² Ibid.

themselves as insufficient motivator for economic activities, instead finding the motivation from ambitions to improve social or environmental wellbeing through business. While a heterogeneous group, the transformative business people share a faith in the possibility of business to contribute to reaching the Sustainable Development Goals of the UN³ (SDG), and a willingness to act accordingly.

To delineate the interorganizational networks in transformative business, we draw from the insights in the ecosystem literature. Originally imported by Moore (1993) from the realm of ecology into the realm of economics, the subsequent discussions have spanned business ecosystems (Carliss Y Baldwin, 2012; Basole et al., 2015; Clarysse, Wright, Bruneel, & Mahajan, 2014; Jacobides, Cennamo, & Gawer, 2018; Mäkinen & Dedehayir, 2012), innovation and knowledge ecosystems (Adner & Kapoor, 2010; Valkokari, 2015), entrepreneurial ecosystems (Autio & Levie, 2015), service ecosystems (Akaka, Vargo, & Lusch, 2013) and platform ecosystems (Thomas et al., 2014), resulting both in an increase in understanding the interorganizational structures, and in a notable confusion about the constitution of the ecosystem concept (Aarikka-Stenroos & Ritala, 2017; Corallo & Protopapa, 2007; Mäntymäki & Salmela, 2017; Möller & Halinen, 2017). However, for the purposes of our research, we conceptualize Oxygen 2050 as a representative of an ecosystem with features similar to business, innovation and entrepreneurial ecosystems.

Underpinning the emergence of an ecosystem are the leverages perceived to materialize from the interorganizational relationships. Thomas et al (2014) identify three types of leverages, namely production logic (economies of scale and scope), transaction logic (economies of search and network effects), and innovation logic (economies of innovation and complementarities), whereas Jacobides et al (2018) and Baldwin (2012, 2015; 2000) emphasize the role of unique or supermodular complementarities grounded on the discussion of network effects (Katz & Shapiro, 1994). In our research we combine these discussions to explore the nature of the

³ See <https://sustainabledevelopment.un.org/?menu=1300>

leverages that emerge in transformative business ecosystems to better understand such leverage mechanisms that aim primarily at socio-economic change instead of increasing profitability.

Underpinnings of ecosystems: mechanisms of leverage

Firms and markets offer the two traditional logics of transaction. Within the firm, the control mechanism that enables assembling and utilizing the resources to create and capture value is the mechanism of hierarchy: resources are controlled based on ownership or (work) contracts that enable utilizing them as the governing organ of the firm sees fit. In turn, the control mechanism of markets is price: when there is no central organ in the possession of a) complete knowledge of everything pertinent regarding the value of objects of transactions, and b) the power to orchestrate the transactions, price acts as the mechanism of mediation that enables transactions (Barney, 2018; Hayek, 1945; Williamson, 1975). The boundary between the firm and the market is set at the interface between whether the transaction costs are smaller when the resources can be governed through hierarchy or acquired based on price (Buckley & Casson, 1976).

Ecosystems provide a third, increasingly familiar alternative. Like markets, they are decentralized, but like firms, they enable orchestrating resources. The logic of transactions in ecosystems is the control mechanism of complementarity-based leverages that enables the participants of the ecosystem to find shared solutions to shared needs. To open this sentence up, the *raison-d'être* of an ecosystem is the belief that an ecosystem provides an “alignment structure” that enables the participants to benefit from pooling resources so that they can be utilized without ownership or contracts (Adner, 2017). This alignment structure is grounded on the modularity and complementarity of the resources, and the leverages build on the complementarity benefits known as network effects (Carliss Y Baldwin, 2015; Jacobides et al., 2018).

Modularity means that the resources are deployable in such forms that enable assembling them in diverse constellations throughout the ecosystem: for example, there are standards that

enable the different members of the ecosystem to utilize the same technologies. Complementarity means that either 1) A cannot exist without B, or 2) A is more valuable with B. There are three types of complementarities (Jacobides et al., 2018).

Generic complementarities are grounded on availability that enables anyone for whom something is necessary to access that something. Electricity is a complementarity without which most firms would not function and is available as a basic utility.

Unique complementarities refer to entities that cannot be produced or consumed without some kind of coordination, often enabled by standardization. For example, the standardization of car tires enables all car producers and tire manufacturers to pursue their aims without needing to sort out the specific requirements case by case.

Supermodular complementarity underlies the network effects, and refers to a phenomenon where the value of something grows exponentially the more users or producers there are. Direct network effects underlie for example the telephone system: it made little sense to own a phone before other people had one too, but the more people you could call, the more desirable it became to have one. Indirect network effects define the platform economy: the more users there are in the App Store or Google Play, the more appealing it is to create applications for them, and the more applications there are available, the more appealing it is to be a user of the App Store or Google Play.

The appeal of an ecosystem is dependent on the types of leverages that emerge from the types of supermodular complementarities that the participation in that ecosystem can offer. The familiar approach to those leverages is to view them as something that have the potential of adding financial value, however in this paper we argue that the leverages can also add other types of value as is the case in the ecosystem of transformative business. This viewpoint is elaborated next.

Non-financial value of ecosystem leverage

Underlying all discussion of firms, markets and ecosystems as mechanisms of transaction are the notions of value creation and capture – and regardless of the empty value discussions found on the marketing materials of most firms, ultimately the notion of value translates purely to financial profits. However, if we problematize the synonymousness of value and money, these mechanisms of value creation and capture can be used as lenses to better understand the emergence of also such collectives that come into being for other reasons than merely pursuing profits. This is why we are viewing the Oxygen2050 association as an ecosystem, not a loose cluster or network of individuals.

In the discussions where value is understood as financial profit, the identified leverages include the economies of scale (the more something is produced, the cheaper it is to produce one of that something), economies of search (the more firms there are scouting for financial opportunities, the more likely it is to stumble on something profitable for the participants in the ecosystem), and economies of innovation (the more resources there are available for the R&D, the more likely it is that such innovations materialize that can subsequently be taken advantage of by the participants in the ecosystem) (Thomas et al., 2014). However, in our empirical study we are exploring the possibility of identifying other types of leverages that could exist beyond the financial benefits ensuing from these leverages.

Drilling down to the very core definition of complementarities as phenomena where A cannot exist without B, or is of more value with B, and narrowing it even tighter to encompass such supermodular complementarities where the value of A builds on the (direct or indirect) network effects realizable only in interaction with B, we ask what would the value look like if not defined through financial measures? In other words, what types of value can be accessed only through participating in an ecosystem of transformative business people – and how is that value exponentially more, well, valuable the more participants there are in the ecosystem?

Methodology

*Context: Oxygen 2050 (www.oxygen2050.com)*⁴

The ecosystem here explored, Oxygen 2050, is a network of entrepreneurs, investors and changemakers for transformative, inclusive and sustainable 21st century society. The driving motive for Oxygen is to create a movement to change the world via business for the better. Hence, Oxygen aims at bringing entrepreneurs and impact investors together on the same side of the table when investing in transformative solutions to build scalable businesses. The aspiration of the entrepreneurs is to build genuinely good and profitable businesses to shape a better society and to protect the environment.

Founded in 2018, the ecosystem now involves some 700 persons through social media, and 500 persons have attended the events arranged so far. Oxygen 2050 operates on a non-profit basis and is largely dependent on the contribution and sponsorship of volunteers and community partners. Main activities so far comprise arranging events, supporting peer connection and communication, providing tools and opportunities for personal development. The events are intended to be safe spaces where everyone's voice is heard, where networking and discussion flourish inspiring to make new connections and discover new perspectives, possibilities and solutions. Storytelling on experiences from practicing impact business is an important instrument of the event structure as well as the communication of the ecosystem's mission. Furthermore, a business accelerator program was launched in 2019. This program focuses on the entrepreneur's development path through the support of experienced angel investors, serial entrepreneurs and life coaches.

⁴ Description originates from one of the founders of Oxygen 2050

Philosophical grounding

The philosophical underpinnings of our research are staunchly pragmatist (Dewey, 1922, 2013; Ormerod, 2006; Ulrich, 2007), because pragmatism allows for both the search for descriptive findings (“what is”) and a normative stance (“what should be”) suitable for our research aims. In terms of practical approach, the research builds on semi-structured interviews of the founders and early members of Oxygen 2050, observations at the events and secondary material accessed through the internal documentation of the ecosystem. As one of the researchers of this project in one of the founding members of the ecosystem, as a group the researchers have both an emic and etic perspective to analyzing the data.

The theorizing, the data collection process, the roles of the researchers and the contribution aims mandate an abductive approach (Welch & Piekkari, 2017; Welch, Piekkari, Plakoyiannaki, & Paavilainen-Mäntymäki, 2011), where the insights from theory and empirical material are constantly juxtaposed and reflected to create understanding. As such the process follows hermeneutical reasoning (Alvesson & Sköldbberg, 2009; Dilthey & Jameson, 1972), underpinned by pragmatist underpinnings, especially suited for our research, where one of the authors provides an emic perspective to support the etic observations of the other two authors.

The qualitative, in-depth empirical approach is also suitable in terms of the two-fold perspective of our research question: in addition to scrutinizing what has so far happened, we also seek understanding of the aspirations and motivations of the individuals self-selecting into the transformative business ecosystem. As mentioned, the pragmatist underpinnings also allow for a more normative research approach: in addition to seeking descriptive understanding of the phenomenon assessed (the ecosystem leverages grounded on non-financial value), we were also interested in identifying possibilities and future trajectories that could lead towards the established aims of transformative business ecosystems, namely systems level social change towards socio-environmental sustainability.

Practicalities

In practice, data collection was carried out as six semi-structured interviews conducted by one of the co-authors who joined the process later than the other researchers. The interviewees were identified and accessed through one of the co-authors of this paper, a founding member of Oxygen2050. They were selected on the grounds of representing deep level of familiarity with the ecosystem, including founding members and attendees of the very first event. Through this hand-picking process we endeavored to find such people who had a longitudinal perspective to the emergence and form-taking of the ecosystem.

The interviewees were informed about the research process and the uses of the data thus gleaned, and each consented to participating voluntarily. The semi-structured nature of interviews means here that there was a list of questions as a starting point with each interviewee, however should the interviewee bring up additional information, or the interviewer deem some answers in need of clarification, the discussion proceeded accordingly. For reasons of confidentiality, the background information of interviewees is anonymized, however in ways that enable the reader to understand the perspective of the respondent. Table 1 includes their background information, however in a format that enables anonymity.

Data analysis began by making verbatim transcriptions of the recorded interviews. Data was subsequently read by the researchers and thematically color coded as guided by the existing theoretical framework of transformative business ecosystem leverages explicated above in this paper. The data would have yielded itself to also other theorizing approaches, but to maintain the original focus of the paper, the additional insights were not imported where they were assessed to not contribute to the chosen theoretical aims. The emerging insights were then discussed between the four researchers, each representing a unique take on the study thus inbuilding a level of triangulation into the process of analysis.

Table 1: List of interviewees

Interviewee	Connection to transformative business	Background	Involvement in Oxygen2050 since	Founding member?
Female 1	Entrepreneur with the aim of saving girls with blockchain and AI	Worked in retail, became passionate about saving girls and launched a firm	November 2018	Yes/No
Male 1	Daily work is involved with a fintech company that works in Africa (raising money from Nordics to develop projects in Africa), wants to make also money, not only to be “social entrepreneur”	Entrepreneur for several companies, traditional software consulting industry	Since the beginning of the idea (summer 2018)	Yes
Female 2	Wants to do meaningful work. Sees that being a highly educated foreigner she can help other foreigners. Believes that person can actually make an impact	Background at IT, corporate world	November 2018	Yes/No
Male 2	Entrepreneur who builds companies with CEO’s, chairman as a service, helping companies with daily decision making	Studied at Aalto and abroad, worked with growth companies, founded a think-tank, translator, book writer, university teacher	Since the beginning of the idea (November 2018)	Yes
Male 3	Made a thesis later in life about how entrepreneurship could be a force for good	Fairly long tech background 20 years, underwent fundamental change: “can do something good to the world”	Since the beginning	Yes
Male 4	Angel investor, helping Start-ups which have higher net positive impact	Actively working on startup field for more than 15 years, in 2010 went through a personal transformation	Since the beginning (November 2018)	Yes

Findings: emerging themes

1) Sense of belonging: “Somebody just needed to sort of put up a banner and say, Hey, it's OK to be a like an entrepreneur who has a business for good”

One of the most notable themes that kept repeating throughout the interviews was the (self)-perception of a social entrepreneur. Several of the interviewees shared a similar narrative: they had been thinking about the need of doing something “good”, but had felt alone in that desire. Serendipitous encounters and discussions led to a realization that they might not be the only ones seeing the need of change, and the founding or finding the Oxygen2050 network confirmed those thoughts.

Some of the interviewees had been engaged in social entrepreneurship or impact investing already before the founding of Oxygen2050, but for the majority, having a banner under which to rally gave them the confidence to start working towards aims they felt personally important. One of the interviewees explicated that before being involved with Oxygen2050, they had had no idea that something like social entrepreneurship even existed, even less that there were investors equally oriented towards societal or environmental aims. Even for the ones having been involved in “doing good”, the number of individuals pursuing similar aims came as a surprise.

This was exemplified in the narrative of putting together the first event. The organizers were hoping to get maybe 10-20 participants into a round table discussion, but ended up having 150 people attending the event, discussing eagerly about “how we can change the society and business practices for the better”. There is still a lingering sense of continuous surprise as to how many individuals there are actually thinking about these things, how not-alone the “do-gooders” are.

The importance of peer support, the knowledge that there are likeminded individuals was emphasized in all interviews: *“It's important because it gives you hope and it gives you determination to move forward and continue, and there is always someone that you can reach out*

to, and say that I feel that I'm lost. The community is supporting you and the peer support is really important in this type of missions.”

The awareness of not being alone in wanting to make a difference appears to be one of the strongest cohesive elements of Oxygen2050. It is not necessary to actually engage in any business activities together, as the mere sense of belonging into a larger community seems to empower the individuals to pursue what they deem worth pursuing. *“It's like coming home in some ways, with a lot of people with big hearts and big minds... I guess one could also call it like this place of love in some ways.”*

2) Personal meaningfulness: “I went through a personal transformation, which was absolutely fantastic awakening to some deeper meaning in life and values I want to advocate in life”

Another shared theme that turned up in all but one interviews was a similar path of personal transformation. Apart from the one individual who had been working their whole life to improve the lives of those around, all others could be characterized as business professionals (entrepreneurs or corporate employees) with lengthy, in the most part successful careers in traditional for-profit business contexts. All of these five share an experience of personal transformation – more gradual to some, more radical to others – that led them towards the path of pursuing “doing good”.

In Oxygen2050 the personal growth, “inner values”, play a notable role already on the level of event practicalities. Each session begins with a moment of meditation, and the coffee table discussions are notably different from what one might encounter in more traditional business gatherings, as people openly share their diverse paths of “enlightenment”. There is a lot of talk about the internal drive, passions, “frustration and anger” towards perceived wrongs – even spirituality is not a taboo subject.

This theme can be captured by defining it as a collective pursuit of individual meaning. The involved individuals want to matter, to make a difference, to live meaningful lives, and they see that through engaging in social entrepreneurship or impact investing they are making their own personal lives more important. This is also a vibrant undercurrent in the peer mentoring program initiated in Oxygen2050: “... *also this inner world, meaning our inner development as human beings, how we operate – and bringing the spiritual and materialistic worlds together, so to speak, providing people ways to get connected, to make their true self open up... We want those things and emotions and feelings...*”

3) Agentic outlook: “Somebody will always make that future world. It doesn't sort of happen in the vacuum – there's always somebody who's active and makes it happen.”

A third theme that resonated throughout the interviews was a strong belief in the might of individual level agency. The interviewees – as well as the wider Oxygen2050 ecosystem – represent individuals with strong internal attribution of causality and internal locus of control (Galvin, Randel, Collins, & Johnson, 2018). In other words, they believe that their actions have a direct impact on what happens, that they **can** make a difference regardless of the external events and factors.

This fundamental, shared psychological disposition is in the collective setting of Oxygen2050 accompanied by a positive outlook on the future. While the transformative business people are in the business of transformation because they see the need of changing things for the better, instead of lamenting the wickedness or size of the problems, they have a surprisingly unwavering belief that they, and others like them, can fix them. While they cherish the collective emotional support and experiences they draw from the ecosystem, beneath it they are highly agentic and individualistic.

At the same time, the background of having notable experience in the traditional business realms shines through as assumptions of the general population outside the bubble of Oxygen2050. *“In all aspects of life there are people who actually doing things, being busy doing things. And then there are people who are having ideas, but they're not actually doing things – and then there are people who are basically just criticizing others doing things. And then there's probably the fourth and the biggest group of people who are basically passively participating, eager to follow, but not too much in the front row.”* The unstated assumption seems to be that the doers constitute the majority of the active participants of Oxygen2050, and the majority of the individuals hoping to see change happen from the sidelines can be harnessed into helping – not by expecting them to do anything, but through charging them money in exchange of the chance to see desirable things happen. This insight brings us to the fourth emergent theme.

4) Profitability: “Profitability is needed to create impact.”

Identifying impact investment opportunities and mechanisms has from the start been one of the aims of Oxygen2050: *“Entrepreneurs who want to change the world are often considered social entrepreneurs, which means that they are not necessarily looking for profit in their businesses – they rather seek to employ the underprivileged people, or they are importing for example something handmade to western markets in order to economically empower people in the emerging markets... and then at the same time it seems that people tend to look at companies so that they have to be only for profit, and they can't have sort of positive impact on society, on the planet. Either you're full in for profit or your full in for impact and there's nothing in between.”* However, the view of the role of profitability is more nuanced than that.

Among the interviewees, there is some experience of working with the NGOs or government organizations who are doing their part in tackling the SDGs. However, driven partially by a disillusionment, partially by a worldview developed in the business realm, the shared sentiment seems to be that people vote, participate and express their values by their wallets. Additionally,

the notable benefit of profitability is that it enables independent longevity: unlike NGOs or other non-profits that need to be continuously seeking funding to carry out their operations, having a profitable business doing good means more operating resources, more independence from the funders, and more predictability in terms of funding endurance.

Unlike in the traditional business where the profits are the end goal, in transformative business profitability is a tool with which the end goals can be reached. Money is also the mechanism of appealing to and drawing from the good-will of the passive part of the population: in their optimism, the active participants of Oxygen2050 believe that in the silent and passive majority of people, there lurks an unspoken desire of seeing the world changed for the better. However, for reasons of human nature or a more pessimistic outlook, the majority never engages in action of pursuing the better future. What the agentic individuals in Oxygen2050 believe is that it is however possible to appeal to these quiet sentiments by offering the majority such opportunities where they can easily and painlessly pay what they can afford and thus support the cause.

There are four types of mechanisms based on this view at play in Oxygen2050: first, the participation in the Oxygen2050 events is not for free, but a fee is charged, as it is viewed that people value more that for which they have paid. Secondly, some of the firms in the context of Oxygen2050 have this idea at the core of their business model. Thirdly, Oxygen2050 is currently looking deeply into crowdfunding as a possibility of increasing funding opportunities for social entrepreneurship; and fourthly, enticing investors into engaging in impact investing builds on this thought. Regarding the last point, a part of the impact investors involved in Oxygen2050 are in impact investing because they believe in the causes of the social entrepreneurs, but there is additionally a number of investors, for whom impact investing is a relatively painless way of feeling involved in doing good through doing what they would be doing in any case.

5) Network building: “Everybody is now 100 milliseconds away – only... I don't think we have sort of really realized that it's that easy.”

The emotional, experiential level sentiment of collectivity discussed as the first theme is something less tangible and more profound than practical networking, but the aspect of creating networks of collaborators is also present in Oxygen2050. All of the interviewees recounted serendipitous meetings with people with whom they are now engaged in business pursuits – either as collaborating entrepreneurs, co-founders of one business project or another, or as an investor and an investee. This aim of connecting transformative business people to enable practical collaboration has also been one of the very first drivers of founding the ecosystem.

The basic format of an Oxygen2050 event is called “Unconference”, and it is designed to maximize the engaged interaction between the participants. Unlike in traditional conferences of business events where the individual interaction takes place predominantly on the coffee breaks and by the bar, the unconference format encourages people to engage in meaningful conversations already as a part of the content program. An unconference flows as follows: there are a few short keynotes showcasing diverse aspects of the chosen theme, and based on those keynotes, the participants write down questions they would like to dig deeper into and submit the questions into a mobile application. The all of the participants review all of the questions and vote for a few they would personally like to discuss deeper. A set number of questions are chosen as the topics of group discussions (the number of chosen topics depends on the number of participants, the idea is to be able to create small enough groups that support engaged discussion), where the one proposing the question acts as a moderator. People self-select into diverse group discussions, contribute as long as they want and may change the groups if they want to engage in several discussions.

The professional business background of the interviewees is evident also in the attitudes towards events: unless there is genuine value in participating, attending an event is a waste of time: “There was a business angel club meeting with probably 5000 people... a lot of these sort

of similar events going on, and one of the comments was that he had better quality contacts in the office... you know, not finding these people he likes to meet. And that was sort of one of the comments and I think this is the aspect of finding the right type of people, I think that's valuable." Networking is facilitated also by deliberately extending the geographical reach of Oxygen2050 by utilizing diverse digital technologies, with the idea of "*being local global*". The physical events emphasize the locality whereas the overall reach emphasizes the globality.

Discussion: towards understanding the leverages of transformative business ecosystems

Returning back to the bare bones of complementarities, there are two types of them: 1) A cannot exist without B, and 2) A is more valuable with B. Both types of complementarities emerge from the five themes brought to the fore in the interviews, recapitulated here: 1) sense of belonging, 2) personal meaningfulness, 3) agentic outlook, 4) profitability, and 5) network building. These building blocks are in this discussion synthesized in two identified leverages of Oxygen2050 ecosystem, the leverage of empowerment and the leverage of action, discussed next.

Leverage of empowerment

As was expressed in the interviews, many of the participants did not know that their private thoughts resonated with the private thoughts of other people, and that acting upon these thoughts was actually something that could define their identity. Finding and founding the collective of like-minded individuals enables identifying oneself as a social entrepreneur or impact investor, and being able to self-identify as one empowers the individuals to act on their ambitions.

In addition to the sense of belonging driven self-identification, the explicitly shared personal transformation paths have also empowering impacts. Sharing the stories of individual level search of meaningful existence enables seeing ones' life as part of a bigger narrative, and lays the foundation for engaging actively in the pursuits of creating positive transformations.

The third pillar of the leverage of empowerment rises from the agentic outlook nurtured in the collective of the like-minded. When the people around you believe in the possibility of one individual being able to make a difference, that strengthens your similar inkling, and supports and encourages you to believe in your own agency.

The leverage of empowerment has features of the both types of complementarities, however telling them apart without the counterfactual case example of what would have happened had Oxygen2050 not existed is difficult. In all likelihood, had the B of Oxygen2050 not existed, at least a part of the A of its participants would have never felt empowered enough to pursue their ambitions of creating a better tomorrow. But more important are the direct network effects: the more people there are in the ecosystem, the more appealing and mainstream it becomes to engage in making a difference. And the more empowered individuals there are who can and want to pool their ambitions and resources into pulling more people into the widening circle of making a difference, the more they are making a difference. Which, again, becomes more and more the norm, having potentially far-reaching outcomes.

Leverage of action

Where the leverage of empowerment impacts the internal drivers of what makes people engage in transformative business endeavors, the leverage of action facilitates the practical executions of such ventures. Establishing the networks of collaborators, finding funding and coming up with business models underpinned by such profitability that ensures the longevity of the transformative businesses are the practical, and as such evident yields of the ecosystem.

Again, missing the counterfactual example, it is not possible to know to what extent the business ventures now underway due to the networking or funding possibilities gained from Oxygen2050 would have materialized without it. However, the indirect network effects are evident.

Indirect network effects refer to three sided markets, which in this context apply to social entrepreneurs, impact investors and the customers of the social entrepreneurs. The more customers the social entrepreneurs have, the more appealing do such firms become for the impact investors. The more impact investments are made into social entrepreneurship, the better such firms are and the more they appeal to customers. A textbook example of indirect network effects, together with the immeasurable impact of the facilitation of such opportunities that would not exist without Oxygen2050 it constitutes the second identified leverage of this ecosystem, the leverage of action.

Conclusion

This research set out to explore how the value of a transformative business ecosystem materializes. Our analysis built on the established knowledge regarding the mechanisms of leverage underpinning the emergence of other business ecosystems (Carliss Y Baldwin, 2012; Jacobides et al., 2018; Thomas et al., 2014), but with a twist: instead of taking the financial profits as the standard of desirability, we looked at the other types of value provided by the case ecosystem.

Based on our qualitative empirical study we identified two mechanisms of ecosystem level value creation: the leverage of empowerment and the leverage of action. Outlining these leverages contributes both to the general ecosystem literature, but more importantly to the research concerned about the potential of social entrepreneurship and impact investing (Brandstetter & Lehner, 2015; Bugg-Levine & Emerson, 2011; Mair & Marti, 2006; Zahra et al., 2009), especially as it could be supported by ecosystems of the like-minded.

As any study, also ours has limitations: a single case study offers at best a view to how things can in a specific context be, without providing insurances of whether the identified leverages are at play in other similar ecosystems. However, this opens up one potential avenue of future research: viewing other transformative business ecosystems through the lenses of ecosystem

leverage could yield invaluable information about the potential of such ecosystems to genuinely contribute to solving the wicked problems.

And, as we're sure most of us agree, any little step towards eroding even the tiniest chunk of the wicked problems is worth the effort.

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