

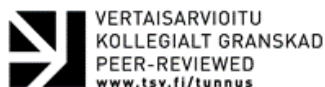
Article

Leading and Managing Areas of Innovation: The Multi-Stakeholder and Startup Perspectives

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Abstract: It takes a village to raise a child, and it takes an entire ecosystem to scale an innovation. The increase of areas of innovation (AOIs) globally reflects the need to nurture innovation for the overall industry success rather than waiting for it to emerge organically. With a great number of entities in the business of supporting innovation (accelerators, incubators, business associations, regional development offices, science parks and others), this in itself has become an industry that is dynamic and evolving, with the need for the greater understanding of how to establish and operate AOIs effectively. This conceptual management perspective paper models the AOI leadership considerations in relation to multi-stakeholders and startups. The aim is to bridge the innovation stakeholder viewpoints with the management practices required within AOIs for fostering innovation and business processes. The paper introduces the AOI stakeholder reflections in reference to startups, corporations, investors, universities, regional impact and community at large; with the application to the AOI life-cycle stages. Startups and entrepreneurs are placed at the heart of an innovation ecosystem, being the center of gravity, around which innovation ecosystem participants or bit, relate and interact.

Keywords: area of innovation, innovation ecosystem, multi-stakeholder perspective, startups

1 Introduction – Areas of innovation in the today's world

Expanding on the concepts of science parks and universities, AOIs are dynamic integrators with their surrounding city or environment and, therefore, are visible and impactful to the community at large.

In a conversation about innovation ecosystems, the Silicon Valley in the USA often surfaces as an example, not least for its capacity for continuous reinvention and renewal (Koh et al., 2005). Areas of innovation, however, are of varied constructs. Some of them aim at connecting innovation process and the city, such as Ann Arbor SPARK in USA, or upgrading the city infrastructure for the purposes of developing innovation communities, as is the case with Porto Digital in Recife, Brazil. Other areas of innovation create entire knowledge valleys or innovation cities from scratch, with the examples of these being

Sophia Antipolis in France, Skolkovo Innovation City in Russia, Yachay City of Knowledge in Ecuador.

In a more contemporary vision of an AOI, it does not need to be characterized by physical borders – the place can be a virtual one, supported by the digitalization. One example are the innovation centers created by Cisco in a virtual community format around the world. So, a startup entrepreneur in Barcelona can engage with a local innovation center there and use it as a platform to interact with companies, fellow-startups and experts in Berlin, Australia, South Korea, or other centers in international locations. They can share ideas or collaborate on new products, giving startups an easier path to become global actors. Gradually, some studies have begun to tap into the discussion of digital innovation ecosystems, their emergence and evolution (see e.g. Chae, 2019).

With a great number of entities in the business of supporting innovation, such as accelerators, startup schools, incubators, business associations, regional development offices, technology parks and others, this in itself has become an industry that is dynamic and evolving, pushing for the continued learning, flexibility and comprehensive leadership perspectives in AOIs. The essence of the article is bridging the innovation stakeholder viewpoints with the leadership and management practices required within AOIs for fostering responsible and sustainable innovation processes.

In the recent literature references, there have been increasing calls to deepen the understanding of how a closely related concept of an innovation ecosystem forms and evolves (Feng et al., 2019; Dedehayir et al., 2018; Gawer, 2014; Autio & Thomas, 2014), along with attempts to integrate the rather scattered literature of the innovation ecosystem perspectives of the startups (Ojaghi et al., 2019). At the same time, the evolutionary processes of such ecosystems have only gained limited attention (Dedehayir et al., 2018).

The present article considers this gap, introduces the multi-stakeholder perspective, including that of startups, investors, corporations, universities, region and community at large – eventually linking the management of these elements to AOI life-cycle stages. The approach taken in the creation of the article is practice-oriented management-centered insight with the reference to extant literature, and the examples of the lived experiences of innovation leaders, such as a founder of an accelerator, investors in startups, entrepreneurs, corporate leadership. The discussion of the interests, priorities and roles of the stakeholders demonstrates the multi-dimensional environment of the innovation governance within the context of AOIs. The article offers managerial implications and practice-oriented considerations relevant to single and combined needs of the key AOI stakeholders.

The article builds up to the conclusion that modern innovation management practices within the context of AOIs are no longer focused merely on separate needs, wants and interests of the key innovation process stakeholders, but rather on the proactive search for sustainable and effective networks and partnerships, enabling open innovation structures.

2 The multi-stakeholder perspective of AOIs

In the spheres of innovation and entrepreneurship, there is a steady increase of interest towards the better understanding of the construct of an innovation ecosystem (Gomes et al., 2016); and the concept has been associated with multiple definitions looking at it from the perspectives of various contexts and implications. In this manner, Colombelli et al. (2019) look into the governance of entrepreneurial ecosystems, Fransman (2017) and Nepelski (2019) model a digital innovation ecosystem, Chesbrough et al. (2014) advance the understanding of an open innovation ecosystem and e.g. Isckia and Lescop (2015) and van der Graaf and Ballon (2019) address platform-based ecosystems. On the one hand, such uses might be associated with the relevance and flexibility of concept, while on the other different conceptualizations could lead to contradictory and even competing concepts, and the terminology and the scope of perspectives surrounding the concept of innovation ecosystems can be rather diverse. As an essential addition to the conceptualization efforts of the term, Gomes et al. (2016, p. 16) have made the critical link to the stakeholder perspective, indicating the need for the further dialogue into the topic, by stating that an innovation ecosystem is “composed of interconnected and interdependent networked actors, which includes the focal firm, customers, suppliers, complementary innovators and other agents as regulators”. This definition suggests a co-evolution process, in which the separate entities interact via collaborative and competitive practices.

In the past two decades, the topic of the network of actors that part in developing and in commercializing innovations has received increasing attention in the literature (e.g., Gomes et al., 2016), and complex innovations tend to involve a series of actors (Adner & Kapoor, 2010). In order to address this process of joint value creation, scholars proposed and developed the concept of innovation ecosystem (e.g., Adner, 2006; Adner & Kapoor, 2016; Gomes et al., 2016), which draws upon the former concept business ecosystem, initially proposed by Moore (1993), and builds upon the concept of a science park environment.

Whereas business ecosystems are primarily aimed to capture value, innovation ecosystems focus on value creation – with the stakeholder dimension being essential to the latter (de Vasconcelos Gomes et al., 2018). Ritala et al. (2013, p. 5) defined value creation as “the collaborative processes and activities of creating value for customers and other stakeholders”, while value capture “refers to the individual firm-level actualized profit-taking; that is, how firms eventually pursue to reach their own competitive advantages and to reap related profit”. Furthermore, Adner and Kapoor (2010) argued that value creation precedes value capture.

AOIs bring together a vast scope of stakeholders, some of which would otherwise be in direct competition, such as startups and corporations from the same industry or incubators and accelerators that curate startups. The multi-stakeholder perspective adopted in this paper demonstrates the synergies that are notable within AOIs where learning, resources and sometimes even office space is shared – placing effective networks and cooperation at the heart of a thriving and growth-oriented innovation community.

A working innovation ecosystem will encompass and enable the interconnectivity between its’ key actors, including corporations, investors, universities, regional governance, the press and the public, and entrepreneurs (Harthorne & Nikina, 2016). In addition to the above, accelerators, incubators, science parks and other innovation spaces and development organizations

constitute the AOI support infrastructure and are there to empower startups and offer support in the diverse aspects of business.

For the purposes of the present paper the following stakeholders are further introduced and discussed: startups, corporations, investors, universities, regional and community impact.

2.1 Startups – the center of gravity

By far the most significant variable of an effective AOI are the startups and entrepreneurs that it is able to attract. Influential corporate leaders are certainly able to support innovative activities, but in contrast promising startups on their way to become the next Googles and Ubers of the world create far greater value than any other group through their impact potential translated to the number of jobs and revenue growth they create. All the other participants in an AOI are there to support and sustain the value made possible by high-growth startups. Therefore, startups and entrepreneurs serve as the center element that other stakeholders gather around, relate and interact. (Harthorne & Nikina, 2016.) Moore (1993) proposed that managers and business leaders should think of companies as part of an ecosystem, which consists of a loosely interconnected network of actors (a community), including companies and other entities, coevolving their capabilities around an innovation, sharing knowledge, technologies, skills and resources, cooperating and competing. An innovation ecosystem is composed of entities and actors that relate, interconnect and create interdependencies. These include anchor companies, entrepreneurs, innovators, customers – all of which are complementors with the more or less immediate and powerful effect on each other's business. In their article, Iansiti and Levien (2004) draw a comparison to individual species in a biological ecosystem, where each company and organization within the same ecosystem – while having its own predisposition and strengths – eventually shares the fate of the network as a whole.

While startups are, indeed, the heart of any sustainable innovation ecosystem, it is to be noted that the extensive support that AOIs are able to provide is not to be taken as crutches, and it is primarily up to startup entrepreneurs to create, follow and successfully implement their visions and strategies.

The primary aim for any sustainable AOI leadership is to attract, engage and promote the best-value startups. From the startup perspective, AOI is there to act as an aggregator of the needed resources, making them available through one window rather than seeking out individual sellers: IP experts, investors, lawyers, customers, partners, media. Science parks within AOIs offer expert support infrastructure, accelerators support with trainings and partner match-making, universities provide access to knowledge and R&D, corporations and VCs contribute with financing; each element aids the work of startups towards establishing and promoting a new business and building its network.

2.2 Corporations – navigating towards startup groups

In order to grasp the relationship to innovations from the perspective of larger corporations, it is essential to understand that the speed of business and innovation is faster now than ever before. Companies that were once considered successful, but have failed to reinvent themselves, have disappeared, with examples of Nokia, Kodak and others still fresh in mind. The integrative role of AOIs is essential in bringing research and industry closer together to enable the next growth stage. In the industry helix, R&D activities

that produce marketable outputs and knowledge are of the primary focus (Fortune & Shelton, 2012, 2014), which drives the formation of networks involving a diversity of educational and research entities and companies.

In unveiling the future opportunities and bringing in the startup perspective, it then becomes a decision of a corporation whether to invest in innovative explorations in-house (considering the potentially narrow focus of such exploration, internal bureaucracies, investment in infrastructure) or to direct a more moderate investment towards accelerating selected startups, providing them access to resources, mentorship, and network.

Large corporations tend to navigate towards startup groups rather than individual startups, aiming for higher chances for them to be successful. For example, Cisco had recently established an innovation center in Barcelona, Spain, that focuses on how Internet of Things (IoT) applies in cities. Barcelona already had a track record for smart city innovations, was the annual host of the Smart City World Congress, and has developed an area of the city called 22@Barcelona that is a hub for innovation. Therefore, the Cisco's Barcelona Innovation Center became a place for companies from the region and beyond to collaborate on new ideas, develop new solutions that City of Barcelona would provide live cases for. (Satyam, 2016.) This innovation center, like the others that Cisco has established in different cities around the world, is to play a key role in attracting local and global talent to concentrate expertise on key technology areas relevant for the company and industry at large.

From the co-competition angle, it has become a common notion that no single industry entity can innovate alone. Referring to the IoT example, a disruption of this magnitude will impact across industries. Cisco recently announced the creation of a 150 million USD investment fund that will be used to identify, prioritize and nurture innovative ideas sourced broadly – and this is done in conjunction with several other large companies including GE, SAP, Siemens, Schneider and others (Satyam, 2016).

AOIs' role is in this context to enable connections to the best-matched startups possible for corporates to engage with. AOIs are uniquely positioned in their ability to spot technology trends early. The key is then to involve professional business leaders early on to help to develop the initial commercialization frameworks, with the focus towards practical outcomes.

2.3 The investor perspective

Any effective AOI requires sustainable investment structure – both in the physical infrastructure and the startups at various stages of their development.

Despite the global phenomenon of startup movement, VCs often tend to focus their investments locally, within the market that is well understood by them and making it possible to work closely with the projects, follow their progress and to support immediately and efficiently, when necessary.

Geographical considerations might have further impact on the investor's perspective: for example, in Europe (heterogeneous market) due to the differences in culture and language the startup pool is rather fragmented –as opposed to, for instance, USA (more homogeneous market). Similarly, the success-failure mentality will impact the readiness of VCs to invest: there has to be notable tolerance towards risk-taking and seeing failure as a learning experience for an entrepreneur to be considered in the eyes of an investor.

Among the startup trends globally there has been a notable increase in startup supporting activities, idea competitions and events. Interestingly, not only high-tech entrepreneurship overall, but also women entrepreneurship is on the rise, with the increased attention being given to the immediate stakeholders, such as family, spouses, children, as well as discussing the outcomes for entrepreneurship from the perspective of balancing work and entrepreneurships with family and life priorities (Le Loarne-Lemaire et. al., 2012; Nikina et al., 2013a, b).

At the same time, the gender aspect has been found to have its influence in a startup's ability to attract funding. In the recent field study, Kanze et al. (2018) discovered that male entrepreneurs were able to reach better funding outcomes for their businesses as compared to their female counterparts. The underlying reason for this was found in the kind of questions that investors posed to the business owners and that guided the investment negotiations. In the case of male owners, investors' inquiries were promotion-based with the orientation towards growth gains resulting from investment and, for example, plans for expanding the customer base. In contrast, women owners were asked more of the prevention-based questions and maintaining the non-losses of the investment, such as a strategy for customer retention.

Overall, from the perspective of an investor success-failure ratio tends to be stable with the average of three out of ten startups succeeding. Therefore, the number of investment-ready startups in an AOI makes the biggest difference for a prospective investor.

The role of areas of innovation from the investor perspective is multi-dimensional: for VCs and larger companies AOIs provide additional opportunities for finding relevant partners, new technologies, current ideas, out-of-the-box solutions, potential investment targets. Sharing of information, skills and resources is considered the new norm, and areas of innovations are the way to do it (Ingels, 2016), making them essential knowledge and networking hubs.

A capable investor aims at forming a bird-eye-view, to see complementarities and putting the main elements together—finances, ideas, philosophy, team, clients, companies, partners. In order for an investor to compile these elements into a meaningful entity, several components are needed: focused expertise and experience, visibility and positioning, the market understanding and the grasp on the current trends internationally. AOIs are instrumental in supporting these processes (Ingels, 2016).

Beyond the actual investor's work of selecting and developing startups, it is equally important to be immersed in the innovation environment in order to understand the community, pinpoint the upcoming trends and note emerging talents. Being a part of an AOI helps a knowledgeable investor to keep an ear to the ground.

2.4 Universities – technological and entrepreneurial skills

Business idea competitions, campus co-working spaces, startup schools and clubs, trainings in innovation management and dipping toes into launching entrepreneurial projects – these are just some of the ways for AOI leadership to engage universities comprehensively and beyond the fundamental research.

In a practical example of a serial entrepreneur Didac Lee (Leys et al., 2016) and his company “Materialise”, the company sought to partner with a university to have a solid, reputable base for company operations, to be able to recruit students and new talent and to have access to valuable research equipment for its innovative work, which the company would not otherwise have been able to afford.

Possible geographical and cultural considerations apply to university-industry cooperation. According to Cooke (2001), technology parks in Germany, Austria, and Northern European countries tend to follow the “entrepreneurial strategy,” which is characterized by close fostered partnerships between universities and industries. In order to move forward private sector cooperation, the university professors and teams are best equipped, when being in touch with the market and having some former business experience.

From the university-startup/SME relational perspective, the capabilities of smaller companies to network and collaborate with universities is correlated with innovation capabilities (see e.g. Imanto et al., 2019). The learning orientation of the company is proposed as the key enabler for the process.

There are several aspects that make a university an irreplaceable part of an area of innovation, including growing new talent, conducting scientific research, sharing knowledge about innovation management and entrepreneurial atmosphere creation. For the most prominent outcomes, an AOI needs to be based on an established, functioning university, to be located geographically close to such a university (ies) or to establish a new university within the ecosystem. In order to form a powerful human resource base for innovation it is equally essential for the universities to provide new talents with technological knowledge and entrepreneurial/managerial skills.

The notable conceptual development of the role of a university within an AOI has been the evolution of the Triple Helix model. The Triple Helix model of the university-industry-government relations (Etzkowitz, 1993, 1996; Etzkowitz & Leydesdorff, 1995) serves as a conceptualization, a model for transitioning from linear to networked and interactive avenues for innovation. The Quadruple Helix integrates the viewpoints of society at large, public, the impact of media while the ecologically conscious Quintuple Helix adds the perspective of the natural environment (Carayannis & Campbell, 2009, 2011; Carayannis et al., 2012).

From the managerial perspective, every university is different in its basic predisposition, focus areas and preferences: the mind-set of students and faculty as well as the vision for the university make a difference from the perspective of an AOI. Universities with professors and researchers having both an academic and hands-on business experience might benefit from the more industry-centered initiatives, effective matching of students with local startup and business communities, involving students in addressing industries’ challenges and new opportunities that businesses might want to explore.

2.5 The role of regional focusing in AOIs

When a region focuses its efforts, it makes funds available and new firms are created. As previously demonstrated, the focusing strategy makes it easier also for larger corporations and investors to direct their resources and capital.

To provide an example, Belgium has an established reputation in logistics, biotech and financial technologies—meaning that with centering development efforts within these spheres it is possible to build companies that will become notable industry makers with a global outreach. This serves as a spark for new AOIs to emerge. One example is a new fintech hub currently being created in Brussels, which will unite corporations, banks, financial companies, emerging startups and VCs. (Ingels,2016). In contrast, in some other sectors Belgium might not be equally visible, because there is less industry or core strength for it or traditional focus.

As a result, understanding and aligning the efforts with the regional focus becomes important for AOIs in the work of supporting innovations.

2.6 Press, public, people – the community impact

Press and public provide an effective check to the realities of how compelling an innovation is for the market. At the same time, they are an important force for validation of new products and services. (Harthorne & Nikina, 2016.) The public and people in the context of an AOI, however, has a broader and infinitely more diverse meaning.

For the new and emerging areas of innovation the tasks of the creation of a physical infrastructure and developing the community around the AOI are rather interconnected. This is in contrast with many of the earlier examples, where one is often developed first, before the other. For instance, Silicon Valley, USA, was first a community, which developed into an infrastructure around a geographical area; or Adlershof, Germany, like many European ecosystems, put its efforts first into the creation of a physical infrastructure, bringing the community-building dimension later.

In addition to the outside stakeholders, entrepreneurship research is increasingly focused on understanding the dynamics of the immediate circle of entrepreneurs, their close communities: friends as a source of venture financing, spouses as unofficial partners for a startup and business developers, the growing participation of women entrepreneurs across sectors and the implications for work-life balance (Nikina et al., 2013b). Including this critical group of people within the AOIs' world requires vision and leadership.

Each region has its own complex scenery (Etzkowitz & Leydesdorff, 2000), where a range of industrial, governmental and academic institutions interact, unintentionally or by design, and shape their own learning capabilities (Doloreux, 2002). There are numerous studies pointing towards the fact that young people with careers in innovative and creative sectors choose where to live before who to work for, and their choice globally has become inclined towards an urban lifestyle and vibrant areas. This is a consideration for an emerging AOI and the choice of the surrounding community in which it will be placed. Similarly, in creating a new AOI the respective elements need to be in place with schools, shops, sports infrastructures, movie theatres, parks – all conveniently available within AOI's reach.

3 Stakeholders within a life-cycle of areas of innovation

Each area of innovation is different in more ways than one, reflecting the community actors involved, the regional characteristics and other aspects; and no two AOIs are identical. Therefore, management and leadership styles of

AOIs are likely to be adapted, with one possible interpretation through a life-cycle phase of an AOI (Engel et al., 2016). Furthermore, AOIs may be viewed as adaptive entities in their movement through life-cycle phases and evolution – requiring for an equally dynamic approach to their governance.

In the launching phase of an AOI – the critical phase in retaining talent and attracting investors, focal institutions play a foundational role in providing of knowledge, expertise and connection. Institutions such as universities, major corporations or reputable startups may adopt a principal role, serving as innovation catalysts. The focal actors have the ability to connect with science parks, startups and investors, business incubators, startup schools and accelerators, in the creation of an innovation ecosystem that aligns research interests with business needs and community impact. For example, Massachusetts Institute of Technology a focal institution in the formation of Kendall Square in Cambridge as an AOI around it.

Engel et al. (2016) highlight that focal institutions are necessary, but at the same time the innovation community needs to make the effective use of its own resources, leverage core competencies, engage with similar or like-minded communities (local and international) – in order to identify and enhance the potential and the added value of an AOI. According to Isenberg (2010), the bottom-up processes and driven, growth-oriented entrepreneurship are to be favored in the launch phase of an ecosystem.

In the growth phase of an AOI, the stakeholder value is in developing sustainable patterns of collaboration. At this stage, AOI value proposition to its' stakeholders has already been formulated and communicated. The growing community around it begins to accommodate and reinforce it as an attractive place for establishing and expanding business. The AOIs ability to serve as a networking hub, understanding and supporting prominent synergies and collaboration efforts of the stakeholders within its ecosystem scope. For instance, this stage may require the focus on attracting investors for new ventures, advancing industry clustering and offering networking opportunities.

The leadership and strategy challenge will be around aggregating scholars, researchers, entrepreneurs, students, industry companies, regional experts and international partners to work together on mutually beneficial joint projects, benefiting from the potential synergies. Fostering horizontal links creates professional and cross-organizational connections that promote open innovation practices and the enhance integration of new ideas, talent and companies. (Engel et al., 2016.)

The case of innovation district 22@Barcelona can serve as an example. Establishing the AOI was based on a long-term aim of economic and infrastructure revitalization, and a cluster strategy was adopted with the focus on IT, media, tech-media, clean energy and design – and for each a public-private-partnership was established for the vertical interconnectedness. In application of the horizontal links, the 22@Network was established to promote interactions and involvement of key stakeholders, encompassing universities, research and innovation actors, larger companies and startups.

The maturity phase calls for the integration within the global fabric and focuses on the implementation of activities that maximize the connection with other international hubs of innovation, and between the ecosystem stakeholders, startups especially. According to Engel and del-Palacio (2009), the adoption of a

global perspective contributes to reaching the economies of scale; enhanced stakeholder mobility and multiplied interactions with other AOIs contribute to cross-fertilization and give firms a global view and reach based on orchestrating diverse networks to exploit new opportunities and gain access to international markets and resources. These connections are established by mobile people and their personal relationships, whose linkages, weak ties and durable bonds form formal and informal exchanges that create tangible and intangible value, raise the level of startup performance. To illustrate this, in Global Startup Ecosystem Report (Startup Genome, 2018), the Swedish capital city Stockholm was acknowledged to have successfully launched more Unicorn-startups per capita than any other ecosystem in the world aside from only Silicon Valley, and one of the very key ingredients to this was perceived to be the global connectedness of knowledge, ideas, people that resulted from the multitude and quality of founder-to-founder relationships between Stockholm-based startup entrepreneurs and those across other countries.

In this phase the AOI is also shaped to the daily life needs of its community, with the consideration of cultural, entertainment and educational institutions that enrich the living conditions, make the AOI attractive and help to retain talent long-term. Active engagement through international aspects, such as welcoming international talent, forming cooperation with other AOIs unbundle the business opportunities within AOI and accelerate the acceptance of the AOI as a reference model for other areas. (Engel et al., 2016.)

4 Managing the multi-stakeholder and the startup perspectives

In bridging the discussion of the article and tying together the implications for AOI management and leadership considerations, Figure 1 is proposed. The considerations for AOI management and leadership arise from the combined understanding of an AOI life-cycle stage in application to key stakeholder initiatives.



Figure 1. Managing the multi-stakeholder perspective within AOI.

Recognizing the life-cycle stage of an AOI helps to set the priorities and enables the respective strategy adoption in regards to the AOI stakeholders. The approach to prioritizing the work with and dealing with the key stakeholders will depend on the larger context set by the development stage of an AOI. This

is a dialogue between the stage strategy and understanding of the key stakeholder, ideally explicit and translated to management practices.

Importantly, in the model above only the kind of aspects that management practices can influence on and/or to change are taken into consideration, while some others that AOI stakeholders: Startups Corporations Investors Universities Region Community AOI life-cycle stages: Launch Growth Maturity AOI management practices and leadership considerations management does not have the direct impact over are left out, for example, the parameters of the macro-environment.

In regards to the AOI stakeholders, the management attention needs to extend both to the key categories as well as the processes of their co-evolution. Depending on the development stage of the AOI, the six key stakeholder groups highlighted in the article will be in the interplay within the AOI conceptualization, while growing or decreasing in the significance for the management attention. Additional stakeholder groups to the ones addresses are certainly possible, yet again their implications for the management actions follow via the same process of the consideration against the AOI life-cycle.

As AOIs go through the life-cycle stages, the relations among stakeholder groups and within each of stakeholder groups advance and reshape in the face of cooperation and competition in the innovation ecosystem. As one example, in their recent study Arora et al. (2019) advance the link between the substitution of corporate research with startup invention (and innovation activities gradually moving from in-house corporate context to external startup settings), this may result in insufficient variety in the innovation ecosystem. The discovered connection between university, corporate and startup research suggests that when universities and startups take a highly active part in research, larger corporations have the increased opportunities and motivations to engage in “open innovation”. The management considerations, therefore, include the attention to these implicit and explicit processes of co-evolution between the stakeholder groups and their innovation activities.

With startups being at the core of an effective AOI, forming an understanding of the multi-stakeholder connected interfaces from the startup perspective is essential. Figure 2 offers the summarizing view of the aspects introduced in the paper in application through examples of the startup interaction surfaces with other key stakeholders.

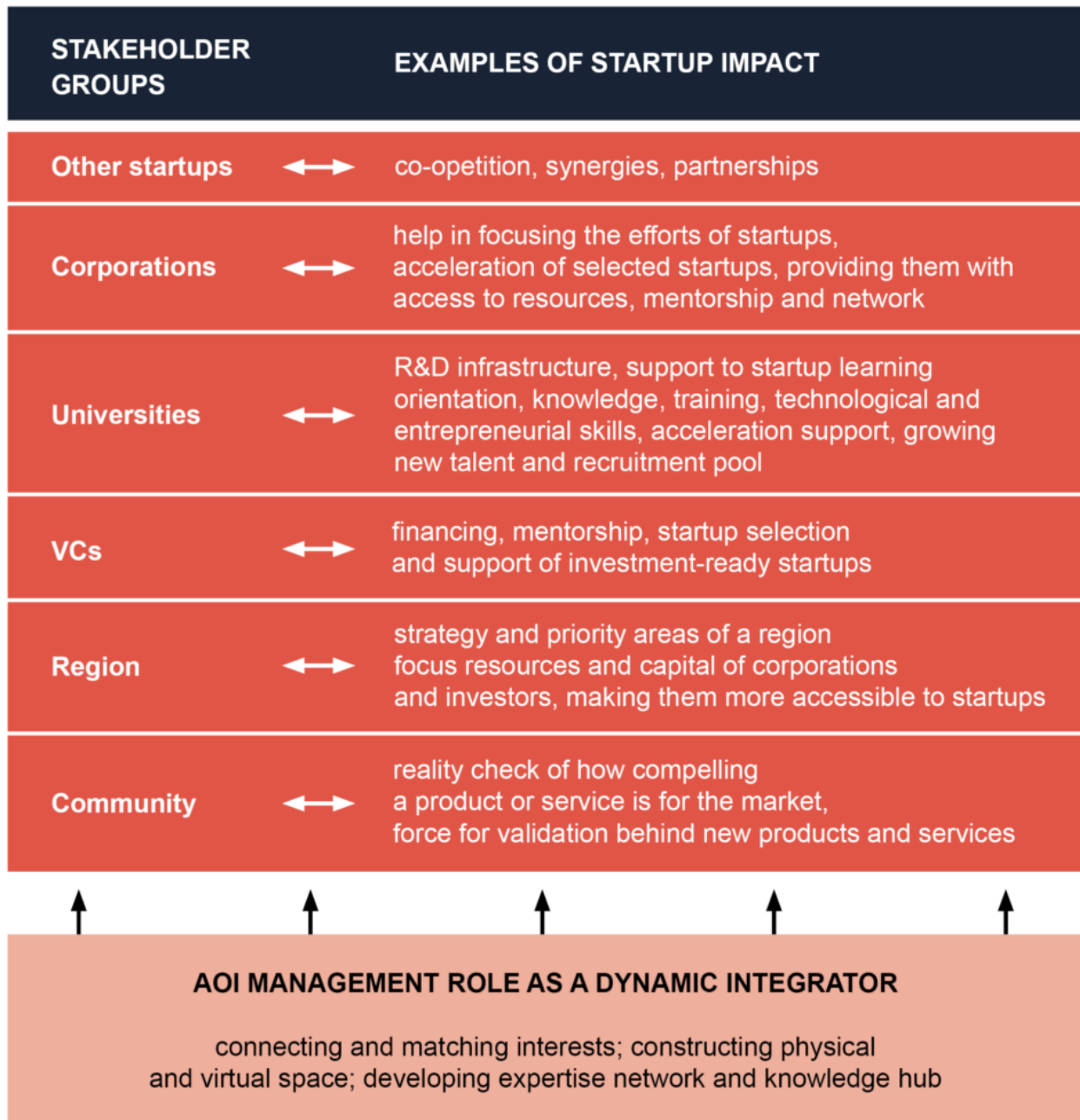


Figure 2. The role of AOI in supporting the startup impact across AOI stakeholder groups.

The startups within AOI environment are in the central role and in the active interaction with other key stakeholders. In the above figure, the provided examples of startup interaction highlight the mutuality of the impact with each of the stakeholder categories, demonstrating the nature of dialogue, iteration, mutual benefit. For example, stakeholders engaging in the work with startups, such as corporations, universities, VCs gain this way the insight into new and future product and service development, uncover the potential to be further explored jointly with startups. The figure visualizes the AOI management aspects and implications, emphasizing the role of AOI as a dynamic integrator that actively connects and matches the interests of stakeholders, provides the space for synergies to emerge, develops as expertise and knowledge network.

5 Conclusion

The multi-stakeholder perspective in the management of AOIs presents a dynamic, varied and evolving landscape of challenges for innovation leadership. The modern innovation management practices within the context of AOIs are no longer focused merely on separate needs, wants and interests of the key innovation process stakeholders, but rather on the proactive search for sustainable and effective networks and partnerships, enabling open innovation structures.

Managerial implications are practice-oriented considerations relevant to individual and combined needs of the key AOI stakeholders, including startups, corporations, investors, universities, region and community at large; with the application to the understanding of an AOI life-cycle stage. In leading AOI structures startups and entrepreneurs are placed at the heart of an innovation ecosystem, being the center of gravity around which varied stakeholders orbit and interact. The paper has demonstrated how with the support of AOIs, established business approaches of separate stakeholder groups are matched with community, synergy and cooperation practices. The effort was made to demonstrate the adaptability and evolution of the concepts within the contemporary AOI environments and their application to management and leadership practices.

Looking into the future of the related research, strategizing, management practices, value and business modeling will continue to be perceived as prominent research areas (Gomes et al., 2016). Furthermore, the work by Adner and Kapoor (2010) highlighted that relations in an innovation ecosystem have their own specific patterns and characteristics, might be more unstable, evolving in unforeseen ways, moving from cooperation to competition and vice-versa. In this sense, the governance of an innovation ecosystem might be less clear and requiring further studying to generate the understanding of the underlying processes.

The present paper proposes that future academic research would benefit of further conceptual and qualitative exploration into the sustainable leadership practices within the AOI context across a wide geographical reference. Further quantitative work may thereafter be attempted in the realm of establishing measurement parameters for effective AOI management inclusive of multi-stakeholder considerations and viewpoints.

The main value of the article is, however, in taking a practice-oriented and management-centered approach in successful AOI establishment and operation from the perspective of involved startups and other key stakeholders, and to assist in productive management practices.

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