

# The Roles of Incubators, Accelerators, Co-working Spaces, Mentors, and Events in the Startup Development Process

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**Abstract.** This chapter aims to explore supporting factors, such as incubators, accelerators, co-working spaces, mentors, and events in the startup ecosystem. To understand these five aspects and to explore their roles in startups, we investigated an Oulu startup ecosystem. In this case study, we conducted research interviews with practitioners working with startups, accelerators, incubators, venture capital firms, and co-working space organizations. By using real case examples, the results discussed in this chapter can help entrepreneurs understand the commonalities and differences between incubators and accelerators, their types (university-based or profit/non-profit), the kinds of business ideas, and the entrepreneurs they focus on. Furthermore, the roles of co-working spaces, mentors, and events and their effects on entrepreneurs and startups are discussed. At the end of the chapter, we also show the interrelationships between these five aspects in the Oulu startup ecosystem and their influence on the different startup development stages.

**Keywords:** Incubator · Accelerator · Co-working space · Mentor · Events · Startup ecosystem · Startup

## 1 Introduction

The financial crisis and the economic recession at the end of the last decade led to high unemployment figures, forcing researchers and governments to focus their attention on the process of job creation [1,6]. Scientific studies, such as [1,9,2], have found evidence that new businesses such as startups create the majority of the net jobs compared to established companies. However, it has been found that 90% of early-stage startups fail during their first two years due to various reasons, such as a lack of problem-solution fit and a failure to learn from mistakes and face challenges, such as building the product, finding team members, developing a business model, creating a minimum viable product, etc. [7,18,13].

Thus, in order to support startups and entrepreneurs with these challenges and avoid failures, a suitable ecosystem needs to be built to support early-stage startups and to highlight a region's speciality in terms of innovation and startup [8,17]. Through a startup ecosystem, a successful startup can be created in a

region. Our earlier work [17] conducted a multi-vocal literature review on the topic, in which various regional and national cases of startup ecosystems were examined and analyzed. One conclusion from the study was that the startup ecosystem is a regional phenomenon, and sub-elements (see Table 1 for description), such as incubators, accelerators, co-working spaces, mentors, and events, act as supporting factors; thus, they can play crucial roles during the early-stage startup’s development [17,11].

Table 1: A brief description of supporting factors.

Supporting factors	Role
Incubator	To run programs (1-2 years duration) to assist early-stage startups. [11]
Accelerator	To run short, intensive programs (3-6 months duration) to assist early-stage startups. [11]
Co-working space	To provide places to work and collaborate with other startups. [11]
Mentor	To guide and coach startup founders and team members to achieve the necessary skills for the business and product development.[11]
Event	Activities happening at specific times and in specific places to enable collaboration and knowledge sharing.

However, a clear understanding regarding the roles and interrelationships between these five sub-elements through a case study is currently lacking. For example, previous studies, such as [3,4,14,10], have explored these aspects separately and not in conjunction through a suitable startup ecosystem case. To address this, our chapter discusses these aspects by taking a startup ecosystem in Oulu city<sup>1</sup> as a research case (see Section 3.2). In Oulu, every year hundreds of startups are created, in which many of those startups get assistance from supporting factors during their early stages. These supporting factors such as incubators (see section 2.1), accelerators (section 2.2), co-working spaces (section 2.3), mentors (section 2.4), and events (section 2.5) are examined and analyzed for their roles in the startup ecosystem and their influence on early-stage startups.

Some brief observations from the case study are as follows, and a detailed description can be found in Section 2.

- Incubators focus on incubating general business ideas, whereas accelerators focus on accelerating business ideas that have the potential to scale fast. Both organizations can work together, whereby scalable business ideas identified through incubators can be accelerated through accelerators.
- Mentors can be successful entrepreneurs, and startup companies in the region can act as coaches during incubator/accelerator programs.
- A co-working space enables the creation of a culture where startups can collaborate to become partners.

<sup>1</sup> <https://www.businessoulu.com/en/frontpage/en/company-networks-2/businessoulu-startup.html>

- Events can enable startups to brand themselves and to get feedback from experts and future investors.

The chapter is divided into four main sections. In Section 2, we provide descriptions of these five sub-elements along with examples, as observed in the Oulu startup ecosystem. In Section 3, we briefly summarize related work and our research method process to support our claims. Finally, in Section 4, we discuss the interrelationships between these sub-elements and the study's implications for entrepreneurs and researchers.

## 2 Supporting factors in the Oulu startup ecosystem

### 2.1 Incubator

To become an entrepreneur and build a startup, a person (experienced or inexperienced) must invest effort and time in order to learn entrepreneurship skills, find/validate different business ideas by discussing them with other people, and identify scalable business ideas. The process could also result in finding potential founding team members and the development of a prototype or a minimum viable product. [C05] The word "Incubator" means to incubate; thus, their main aims are to nurture young entrepreneurs and to raise business ideas for early-stage startups [4]. In the literature, incubators are also described as programs of one to two years duration [11] and are classified into three types [4]: *university-based incubators*, *profit*, and *non-profit* (e.g., government, community-based incubators). They provide services such as *infrastructure*, *coaching*, and *networking* [14].

*University-based incubators.* Two higher education institutions, the University of Oulu (UoO)<sup>2</sup> and Oulu University of Applied Science (OUAS)<sup>3</sup>, are actively promoting entrepreneurship and startup culture and mindset among their students. For example, OAMK LABS<sup>4</sup> is a pre-incubator at OUAS, offering incubator programs to participants to develop new skill sets and create new business and innovative solutions [C05]. The business idea can be general, and the participants get a mentor to develop the business idea further. In addition, Kickstart Oulu conducts a business idea competition<sup>5</sup>, which enables participants to demonstrate their business ideas and to be evaluated by external expert judges. Showing their business ideas can encourage participants to advance their business ideas further into potential startups [C02]. At the University of Oulu, the Business Kitchen<sup>6</sup> incubator works on incubating the students' business ideas. Furthermore, networking services provided by incubators, such as the Business Kitchen, enable early-stage startups to meet appropriate contacts, which aids in

<sup>2</sup> <https://www.oulu.fi/university/innovations-and-entrepreneurship>

<sup>3</sup> <https://www.oamk.fi/en/studies-and-applying/masters-degree/education-entrepreneurship/>

<sup>4</sup> OAMK LABS: <https://oamklabs.fi>

<sup>5</sup> <https://www.kickstartoulu.fi/business-idea-competition>

<sup>6</sup> Business kitchen- <https://www.businesskitchen.fi/>

the development of some product components, since startups' limited resources may not allow them to build the whole product [C10]. Moreover, university-based incubators can also assist with the transferral of intellectual assets from university personnel to startups that are intending to commercialize those intellectual assets [4].

*Non-profit/profit-based incubators.* For experienced professionals, organizations such as Starttaamo<sup>7</sup> and Yritystakomo<sup>8</sup> exist, in which participants discuss their business ideas with other members whom they trust. Thus, they receive feedback on their ideas to determine which business idea is worth developing further [C13].

Another incubator is Kielo Growth<sup>9</sup>, which is fee-based and offers services such as infrastructure and mentorship. Kielo creates an environment in which startups (acting as tenants) help each other by discussing the product and the business development. This, in turn, leads some startups to become partners to offer more value to customers [C13-C15]. Furthermore, incubators' managers can assist startup companies in networking with investors, legal personnel, and accounting advisors, and technology transfer [4].

Another interesting observation was that some experienced startup founders, such as [C01], [C06], [C08], did not seek assistance from an incubator and only used their infrastructure to fulfill their operations. In addition, some reasons why an incubator could fail (as discussed in [14]) include:

- Incubators mostly provide infrastructure services rather than coaching and networking; and
- Alternative resource preferences for entrepreneurs and startup companies are limited.

## 2.2 Accelerator

The objective of an accelerator is to speed up the startup development process. Thus, the main difference between an accelerator and an incubator is the accelerator's short intensive programs, which are usually between 3-6 months duration [4]. Accelerators can function by experienced business people [15] assisting in mentorship, creating the startup team members, and providing seed money. They can also offer a co-working space to develop their primary product, and they can help with recognizing potential customers for the product idea, networking with key people, providing instruction on search engine optimization, and creating events to pitch the business ideas to investors [4,15].

Incubators focus on incubating general business ideas, whereas accelerators focus on accelerating business ideas that have the potential to scale fast. Both organizations can work together, whereby scalable business ideas identified through incubators can be accelerated through accelerators.

<sup>7</sup> Starttaamo - <http://www.starttaamo.fi/>

<sup>8</sup> Yritystakomo- <http://www.yritystakomo.fi/>

<sup>9</sup> Kielo growth - <https://kielo.com/kielo-in-english/>

The two accelerators in the Oulu startup ecosystem were Avanto<sup>10</sup> and Neshtholma<sup>11</sup>. Once the potential scalable business idea is identified during the incubator's program, startup founders can take the assistance of these two accelerators to develop the business idea further. The two accelerators have similar work processes and connections with other stakeholders in the startup ecosystem; however, a key difference is that Avanto focuses on the early stage of the business idea while Neshtholma focuses on the advanced stage [C02].

Avanto is a university-based accelerator that conducts programs of 1-3 months duration and mainly focuses on business ideas that are scalable and have the potential to make money fast [C02]. During the program, different tools, such as the Lean Startup methodology, design thinking, and service design thinking, are used to shape the business idea and to assist with business idea validation and business model development through the help of experts [C04,C11,C18]. Participants are also provided with a co-working space to build a team [C02,C11]. Avanto cooperates with incubators such as Business Kitchen and successful local startups to invite them as mentors during the program. Furthermore, university researchers, who are equipped with technical expertise but who lack business-related knowledge, can get assistance through Avanto programs to create spinoff startups. At the end of an accelerator program, a big event "demo day" is conducted where participants need to do a pitch in front of a large audience and investors [4]. A similar event was also observed in the Avanto program, which ended with a big event. After the program, participants receive study credits for their participation in the program [C12], and more connections and information are provided, which could lead to further development [C10].

The other accelerator, Neshtholma, focuses on experienced persons and provides services similar to Avanto [C03]. For some startup founders, they assist with providing the necessary information during the early stages for further development [C17]. Furthermore, some experienced founding members of startups [C01,C06,C08] did not need the help of accelerators in the startup ecosystem since they were self-sustainable and could support themselves. As interviewee C01 stated

*We have been self-sustainable that way that we didn't use any accelerator, and the simple reason was that our founder was more experienced than plenty of those people who were working in those accelerators. He knew the things already better than those guys.*

Concerning the programs, Cohen and Hochberg [4] mentioned that accelerator programs can focus on the usual startups, but they can also target some specific types of startups, for example, energy startups, education-related startups, or healthcare-related startups. In addition, Haines in [8], discussed the following types of programs wto promote startups and innovation in the region: *school-based (10-week duration)*, *Startup Basecamp (eight-week duration)*, and

<sup>10</sup> Avanto - <https://www.oulu.fi/forstudents/entrepreneurship/avanto-accelerator>

<sup>11</sup> Neshtholma - <https://nestholma.com/collaboration-programs/oulu-startup-accelerator/>

*programs to connect startups with small and medium-sized enterprises.* Some interesting observations related to accelerators reported by the authors in [15] were that, after graduating from accelerator programs, startups were able to find investment and create profit; furthermore, more than 70% were still running after participating in the program.

### 2.3 Co-working space

Incubators and accelerators need to provide startup companies with infrastructures (i.e., co-working spaces), which can include rental offices (including tables and chairs), organizational support (such as WLAN connections, printing), and conference meeting support [4,14]. The co-working space needs to fulfill the following criteria: *access to information, access to knowledge, access to symbolic [i.e. important] resources, access to social capital, and opportunities for serendipity* [12]; assist with providing a place to perform events and programs; and provision of a work location for startups to develop the business idea into a prototype and full-fledged product [8]. Furthermore, six types of co-working spaces are *public offices, third places, collaboration hubs, co-working hotels, incubators, and shared studios*, as discussed in [10], and which were characterized based on *business model (for-profit and non-profit)* and *user involvement (public, semi-private, and private)*.

In the Oulu startup ecosystem, some organizations, such as Business Kitchen, Kielo, and Nnetwork Inn <sup>12</sup>, were providing co-working spaces. Nnetwork Inn's objectives were to provide infrastructure and mentorship to their tenants, build cooperation among startups (tenants), and form relationships so that some startups could offer products/services or work together. As interviewee C14 described about co-working space

*I think the atmosphere here is relaxed and all the companies, they help each other. For example we have had customers from Kielo, from other companies, paying customers and when you need help there are other companies you can ask some kind of guidance and we have been also helping and coaching other companies here.*

The Business Kitchen provided a co-working space to help people work together, which could lead to the development of teams and prototypes [C18]. The co-working space offered by the Business Kitchen is given to the participants in Avanto's program [C11]. Furthermore, the incubator Kielo also offered a working space to startup companies. Some startups [C3] did not require a co-working space while other startups [C8] avoided a co-working space as they preferred confidentiality and a quiet area.

### 2.4 Mentors

Qualified startup coaches and mentors need to spend a significant amount of time during the early stage to provide the necessary support and expertise to inexperienced entrepreneurs [C3], which could help with and lead to the creation of an ecosystem systematically [8]. As interviewee C02 mentioned

<sup>12</sup> Nnetwork Inn - <https://www.nnetworking.com/en/nnetwork-inn-home-company/>

*They are really important because they can give the knowledge and give access to specific networks which is really important in the early stage of a startup so that you get connected to the right people and get the right knowledge so that you can build the best service or product or software, whatever your startup is about.*

Mentors need to be familiar with the startup and their environment, open to new ideas, and able to create an entrepreneurial mindset among the startup founding members [C02]. Furthermore, as discussed in the previous sections, for both incubators and accelerators, the first service is coaching; hence, mentors are an essential part of their programs, who share their knowledge and expertise with program participants during mentor meetings and seminars [4]. For example, incubators such as Business Kitchen and Kiello offer mentorship and coaching to early-stage startups to help with the development of a business model, a development strategy, and making connections [C14]. A co-working space also provides mentorship to their tenants, and managers also sometimes mentor for other accelerator programs [C04]. Also, accelerators and incubators have created strong connections with local startups and entrepreneurs, which can act as mentors during their programs [C11].

According to the interviewees [C10,C14,C16], mentors can assist in the following areas:

- Marketing strategy;
- Pinpointing areas where a startup needs further improvement;
- Providing support in proper decision making since founders cannot make all decisions on their own; and
- Sharing knowledge on how to acquire funding.

Moreover, experienced founding team members did not need mentorship, especially if they had previous startup experience. Also, for some startups [C07,C09], markets and customers were directing their decisions. Furthermore, in one startup [C10], the founder had more expertise in product and business development; thus, he acted as a mentor to his team members. Some startups [C14,C15,C16] only used the infrastructure as they had experience and expertise; therefore, they did not require mentorship. Thus, it appears that mentorship is more useful to people who do not have startup experience.

## 2.5 Events

Events provide an opportunity for entrepreneurs to network with founders of successful startups, growth-stage startups, investors, and large companies [8]. There are plenty of events in the Oulu startup ecosystem, and the most famous one is Polar Bear Pitching<sup>13</sup>, which provides a good channel for startups to connect with investors, media, and new experts [C02]. During the event, founding team members can ask for advice on their problems, brand their product, build trust with potential customers and pitch their idea to attract new investors. As interviewee C04 described

<sup>13</sup> Polar bear pitching - <https://polarbearpitching.com/>

*Events can help as well because the more you meet particular people on different kind of events again and again will build you the trust. Events are there to create the initial contact, but the trust is what you need to build by consistently, going to these events, consistently being in touch with your potential client and build that relationship further, so the events are important*

A pitching event also informs participants about the latest information on startups, and provides startups with global feedback and visibility [C03,C04,C11].

Avanto's accelerator program ends with a significant public event called Demo Day<sup>14</sup>, in which participants are asked to present and pitch their ideas to investors and startup experts to get their feedback. Similarly, Njetworking also conducts an event called Socializing Friday<sup>15</sup>, which usually occurs six times a year to enable networking among the people. Another example of this event in the Oulu startup ecosystem is Startup Weekend Oulu<sup>16</sup>.

### 3 Related work and the research method used in the study

#### 3.1 Related work

Regarding the startup ecosystem, earlier studies such as [8,17,11,5] discussed these aspects. For example, [8] talks about a startup and innovation ecosystem in one Australian city, which provides a model on how to create a startup and innovation ecosystem environment. Similarly, [5] discussed New York City, in which various actors were analyzed concerning the startup ecosystem. Also, in our earlier work [17], we conducted a systematic literature review on startup ecosystems. Regarding previous studies on incubators, accelerators, and co-working spaces, studies such as [3,4,14,10] distinctly discussed some of these aspects.

#### 3.2 Research method

The supporting factors such as incubators, accelerators, co-working spaces, mentors, and events, which were discussed in Section 2, were studied in a case study of an Oulu startup ecosystem [16]. During the case study, case units such as startups, incubators, accelerators, co-working space organizations, and venture capitalist firms in the Oulu startup ecosystem were analyzed by collecting data through convenient sampling by conducting interviews with founders, mentors, and business developers working in case units. More information on case units and interviewees' details are shown in Table 2. During the interviews, an interview script was used, in which one section was to set to explore the roles of the supporting factors in the startups of the Oulu startup ecosystem. A professional company later transcribed the interview recordings. Interview transcripts were

<sup>14</sup> Demo day - <https://www.businesskitchen.fi/en/events-list/2018/4/24/avanto-program-demoday>

<sup>15</sup> Socializing Friday - <https://www.facebook.com/SocializingFriday/>

<sup>16</sup> Startup weekend Oulu - <https://www.facebook.com/startupweekendoulu/>



analyzed using NVivo (a qualitative analyses software) with the use of deductive coding technique to extract information with respect to aspects such as incubators, accelerators, co-working spaces, mentors, and events. The results of the analyzed data are discussed in Section 2.

Table 2: Case units and interviewees' details

<b>Id</b>	<b>Case units (C)</b>	<b>Size</b>	<b>Interviewee role</b>
C01	Startup	1-5	Founder/SW developer
C02	Accelerator	1-10	Business developer/ Mentor
C03	Startup	1-4	Founder/CEO Founder/CTO
C04	Co-working space	1-5	Event manager
C05	Venture capitalist	1-5	Investor/partner
C06	Startup	1-5	Founder/CEO
C07	Startup	1-5	Founder/CEO
C08	Startup	1-5	CEO
C09	Startup	1-5	Founder/SW developer
C10	Startup	1-20	Founder/Product owner
C11	Startup	1-5	Founder/CEO
C12	Startup	1-5	Founder/ SW developer
C13	Incubator	1-5	Mentor
C14	Startup	1-5	Founder/CEO
C15	Startup	1-10	Founder/CEO
C16	Startup	1-5	Founder/CEO
C17	Startup	1-5	Founder/ SW developer
C18	Accelerator	1-10	Business developer/ Mentor

## 4 Conclusion

### 4.1 Discussion on the findings

As discussed in the Introduction (Section 1), this article was designed to explore the supporting factors of incubators, accelerators, co-working spaces, mentors, and events in the startup ecosystem and their roles in the startups. The findings (see Section 2) from our empirical study suggest that the supporting factors play crucial roles in the early stage of the startups, where the founders are aiming to identify the problem-solution fit and to create the team members to establish the minimum viable product or prototype to address product-market fit. One finding from the data analyses is that incubators (section 2.1) and accelerators (section 2.2) focus on students and experienced personnel, and provide co-working spaces (section 2.3) along with mentorship (section 2.4) to the entrepreneurs participating in the programs. They also create events (section 2.5) to attract new entrepreneurs and startup enthusiasts. The difference between incubators and accelerators was that the incubator's objective was to incubate a business idea and create a mindset for the participants to recognize whether the business idea is feasible enough to scale, while the accelerator's aim was to

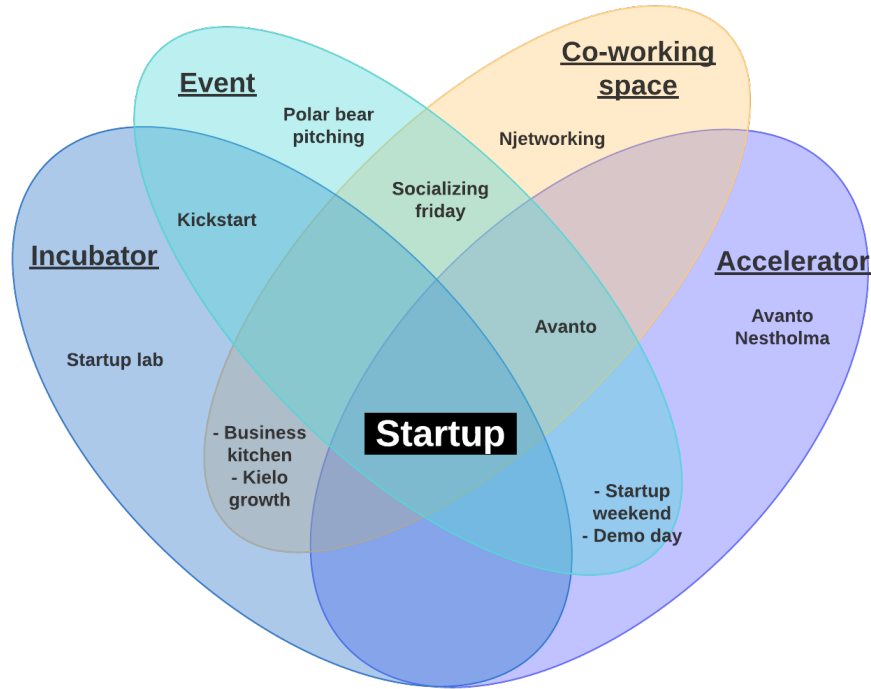


Fig. 1: Dimensions relationships between incubators, accelerators, events, and working spaces in the Oulu startup ecosystem.

accelerate the process of that scalable idea through intensive mentorship and training. Figure 1 shows the interrelationships between incubators, accelerators, co-working spaces, and events in the Oulu startup ecosystem as discussed in Section 2. For example, examples of accelerators are shown in the purple oval shape, and the events they conduct are displayed in the intersection of event and accelerator oval shapes.

#### 4.2 Implications for entrepreneurs and researchers

*For entrepreneurs.* The points discussed in this chapter indicate that inexperienced entrepreneurs interested in starting a new venture, it can be useful for them to demonstrate their business ideas to others by participating in the incubator's program to evaluate whether the business idea is worth scaling. This process can lead to finding potential future co-founders and team members to work further on the business idea toward product and customer development. Furthermore, entrepreneurs can get intensive training from the accelerators, knowledge on different aspects during product and customer development from mentors, possible

		Startup development stage			
Supporting factors		Team formation	Minimum viable product	Validate /Pivot	Establishment
		Problem/solution fit	Vision/ founder fit	Product/Market fit	Business model/ market fit
INCUBATOR	<p>Incubate idea through mentorship to identify problem/solution fit and scalable business idea.</p> <p>Business ideas are discussed with other members during the incubator programs to find and create potential cofounders and team members.</p> <p>Focuses on inexperienced individuals such as students from universities and experienced people looking to create their own business.</p>		<p>During the program, knowledge regarding the creation of a prototype and a minimum viable product is provided that could incorporate vision/founder fit and product/market fit.</p> <p>Networking is also provided with different experts in the field. Connection with accelerators to further accelerate the process.</p>		
ACCELERATOR	<p>The focus can be on a scalable business idea which may be a fresh idea or already incubated by the incubators.</p>		<p>Intensive program provides critical knowledge on the aspects of business and product development.</p>		
CO-WORKING SPACE	<p>Provide an opportunity to work together with other people working in the same space for socializing and networking to create a partnership or joint product development.</p>		<p>Infrastructure such as their utilities can support during the development of prototype and minimum viable product.</p>		
MENTOR	<p>Provide expert knowledge and experience to entrepreneurs during the accelerator or incubator programs on how they can scale their business idea.</p>				
EVENT	<p>Present an opportunity to pitch the idea to experts and investors.</p>		<p>Demonstrate prototype or a minimum viable product to investors, judges and large companies to get their feedback.</p> <p>Market the startup name to event participants.</p>		<p>International pitching event assists in finding big investors and venture capitalist firms.</p> <p>Demonstrating and advertising of the product and company at the international level.</p>

Fig. 2: Roles of incubators, accelerators, co-working spaces, mentors, and events in startup development stages

network opportunities with potential investors, and a place to work on the business idea through co-working spaces. Furthermore, in Figure 2, we also described incubators, accelerators, co-working spaces, mentors, and events effects during

the startup development stages (stages were adapted from Startup Commons<sup>17</sup> which is a recognized startup website).

*For researchers.* This chapter provides strong empirical evidence through eighteen interviews concerning the supporting factors in the startup ecosystem and makes the following contributions to the literature:

- Incubators/accelerators focus on inexperienced and experienced individuals interested in entrepreneurship, developing new ventures, and creating startups.
- For inexperienced individuals, university-based incubator and accelerator programs aim to create an entrepreneurial mindset among the students. In addition, students receive study credits for participating in the intensive programs.
- Mentors provide the necessary skills to develop a business idea and provide program participants with the right connections that can support their venture creation.
- For experienced individuals, profit/nonprofit-based incubators and accelerators can focus on supporting them.

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<sup>17</sup> Startup Commons - <http://www.startupcommons.org/startup-development-phases.html>

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