

Aalborg University
The Faculty of Engineering and Science

Incubator Innovation

Process Report
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ABSTRACT

This report covers the project Incubator Innovation, carried out for the completion of the third semester of the Entrepreneurial Engineering program. The project revolves around the newly created incubator (a property based initiative designed to support new venture creation) at Aalborg University, AAU Inkubator, and how it may develop in the future. An extensive literature review of the field of incubators lays out the foundation, revealing lacking consensus on many key areas of interest among which are impact and the metrics to measure it, criteria for selecting startups and regional factors. In addition to the incubator literature, collaboration between startups and corporations is covered as an effort in understanding how a startup may offer value to the larger, established business. Next, a case study is conducted at AAU Inkubator, with both management and multiple startups being interviewed. Uncovered is a still developing structure, where much of the strategy and many of the day-to-day procedures is being formulated in an ad-hoc fashion. The incubator's successor, AAU Startup Program is then introduced, for which a set of recommendations and points of insights are offered on three areas: Goals and metrics, selection criteria and collaboration between startups and corporations. Lastly, reflections on the overall process is given.

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This project was carried out in collaboration with Supporting Entrepreneurship at Aalborg University (SEA) and I wish to thank Morten Dahlgaard, head of entrepreneurship at AAU Innovation, for giving me the opportunity to use AAU Inkubator as the focus of my work.

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1. INTRODUCTION

This report will describe my work during the third semester of the Entrepreneurial Engineering (EE) Master program at Aalborg University completed during the fall of 2016. The project was carried out in collaboration with Supporting Entrepreneurship at Aalborg University (SEA) and took place at their newly created incubator for startups.

The third semester is the one where we as EE students get our hands dirty. It is the semester of internships and hands-on experience within an organizational context. The focus is on implementation and the application of previously taught theory. Also an option is the format of an independent work process. This is my case. The difference from an internship is not enormous and mostly entails more self-guidance and less day-to-day dealings with the collaborating organization. The focus, however, remains the same and the project is still very much embedded in the organizational context regardless.

At its outset, the case I was given revolved around research on collaboration efforts between startups and established companies, with the central hypothesis being that these efforts create value for both. The startups gain access to the experience and scale of the established companies, and these will in turn increase their absorptive capacity by exposing themselves to the newest, groundbreaking developments in the startups. A win-win strategy. The initial case brief suggested this could come in the form of a purpose built business model, whereby the collaboration did not rely on the charitable spirit of the established company, but rather saw the value readily assessed and hence sold. The result would be a business model that could more easily sustain itself as opposed to current efforts.

The case was offered to me by Morten Dahlgard, head of entrepreneurship at AAU Innovation, and he made it clear that this was mainly an overall framing, rather than a limitation on what I could investigate. And the case did indeed change from the initial outline as the project moved forward. Taking place at the newly created incubator at AAU, it became clear that using it as a starting point for my work could yield many insights. After all, as I would later learn, the incubator is positioned to become the spearhead of the initiative to encourage entrepreneurship among the students and faculty at AAU. By extension, this would also mean that collaboration with outside actors, like established companies, would take starting point here. It was also, perhaps more importantly, the organizational context – per the curriculum – that I was to embed myself in.

Involving the incubator and entrepreneurship initiatives already taking place at AAU also provided a path for the implementation of whatever I would ultimately come up with. Keeping my work secluded and merely an academic exercise in creating a business model in text-form based exclusively on literature would not see my hands “getting dirty” as proclaimed above. One of my earliest goals was to clearly detail what for and by whom the project results would be used. This was not only to satisfy the curriculum and the focus on implementation, but just as much a way to give my work greater meaning than simply being an exercise in learning. Producing actual value for an outside stakeholder is what I consider to be the essence of this semester.

Established in the summer of 2016¹, the incubator at Aalborg University is still very much in its infant stage. Just like the startups it houses, AAU Inkubator is under heavy development in an effort to find the right format for the regional circumstances in Northern Jutland. In order to aid that effort, this project will investigate the current incubator state-of-the-art and current incubator activities to sketch out a possible future for AAU Inkubator and its successor, the AAU Startup Program.

¹ Multiple initiatives have held the name of “Inkubator” at AAU, but here the reference is specifically to the physical incarnation housing startups for a prolonged period of time.

1.1 HOW THE REPORT IS ORGANIZED

The report is organized as follows: First, a literature review of the field of incubators, the ecosystem facilitating startup assistance and startup-company collaboration is conducted. Next, an overview of the work process and the methods selected is given. Having established the context, the incubator at AAU is described in its current form along with the plans for its future development as presently envisioned by the management at SEA. Results from the numerous interviews conducted will then be analyzed before heading into a discussion of possible issues and avenues for future improvement both in the internal organization of the incubator, but also in its collaboration efforts with external partners. Finally, my reflections on the process are covered after which the project is concluded on as a whole.

2. LITERATURE REVIEW

To create an initial and up-to-date body of knowledge on the areas to be covered during the project – incubators, the ecosystem facilitating startup assistance and startup-company collaboration – a literature review was conducted as the first task.

Google Scholar along with AAU's own search engine Primo was used as starting points for queries such as "incubator", "entrepreneurial ecosystem", etc. Where specific publishers were found to have large amount of relevant peer reviewed papers, their databases was used as well. In particular Elsevier's ScienceDirect platform provided most of the papers found, with the majority of the papers here having been published in Technovation. Abstracts were read and, if found relevant, the paper in question was downloaded in full and labelled according to year of publication. The resulting papers, around 30, were then read in chronological order. This provided a good way to follow along with the field's development. Since the oldest paper of the bunch had been published as recently as 2002, the reference lists in this first set of papers were used to find older papers on the field's development until that point. As the earliest mention of an incubator is from the 1950's, the initial set of papers had left a lot out. A similar procedure was carried out for papers on startup-company collaboration, although fewer papers were found here. Additional areas relevant to the project, but which I have had experience with previously in my studies, have been covered according to already known literature and thus were not subjected to the above process. These included open innovation, absorptive capacity, knowledge spill-over based strategic entrepreneurship and creative destruction among others.

2.1 INCUBATOR DEFINITION AND ORIGIN

Let us in proper fashion start with the definition of an incubator. In a very recent paper published in a special issue of Technovation on the *Technology Business Incubator* (TBI), Mian et al. (2016) place a range of efforts, among them the incubator, under the TBI moniker. Also covering science parks, innovation centers, business accelerators and others, they define TBIs as being:

"... property based initiatives providing tenant firms with a portfolio of new venture support infrastructure, including: business services, networking, access to professional services, university resources and capital." (Mian, et al., 2016, p. 2) (Additional in-text references removed for conciseness)

Of particular importance is the fact that these are property based initiatives that thus must have some physical space allotted for tenants to operate from. While virtual incubators without a physical space are also briefly covered by Mian et al., their rise-to-fame as part of the dot-com bubble saw their appeal fall as quickly as the latter, according to the authors. Looking across the reviewed papers, the definition offered by Mian et al. is rather uncontroversial. They all focus on a physical space for entrepreneurs coupled with some sort of support infrastructure.

Starting with just the very basics, an office, the first incubator began in the US in the late 1950's as a solution to lacking demand for large office spaces. The property owner gathered many smaller tenants in the same place and found that some started asking for business advice – essentially the very first support infrastructure [Lewis (2002) and Adkins (2001) via Hackett & Dilts (2004)]. That is one version of the origin story. Others point to a research park in California in 1951 (Mian, et al., 2016) and others again to "conference rooms of large universities" (Finer & Holberton, 2002, p. 23). Actually, the incubator claiming to be the first, the Mancuso Business Development Group, is still around and helping startups to this day (Mancuso, 2016). Regardless of the exact circumstances, it is clear that the incubator arose as the result of demand for not only real estate, but also business guidance. It was demand in

need of a service, not a service looking to create demand. Perhaps it is this genuine need that has seen the incubator survive and even thrive here more than 60 years later.

2.2 INCUBATOR TYPES

For it has indeed thrived. The International Business Innovation Association (inBIA) today estimates that more than 7,000 incubators exist worldwide (inbia.org, 2016). And these are just the self-labelled incubators. As the definition above points to, the support structure around new venture development can take many different forms. Allen and McCluskey (1990) propose a continuum with four primary types, from mostly real estate driven to for-profit seed capital incubators, with non-profit and academic incubators in between. A decade and a half later, we again get four categories with work from Grimaldi and Grandi (2005): Business Innovation Centers, University Business Incubators, Independent Private Incubators, and Corporate Private Incubators. Here they differentiate the incubator types according to 10 characteristics and creates an additional categorization (called models in the paper) to capture the degree to which the incubator mainly provides tangible or intangible resources.

Adapting a typology developed in a study carried out for the EU Commission (Centre for Strategy & Evaluation Services, 2002), Aerts et al. (2007) specifically apply the incubator term to initiatives where management support is high and the technological level is likewise (Figure 1), thus separating it from science parks unlike Mian et al. (2016).

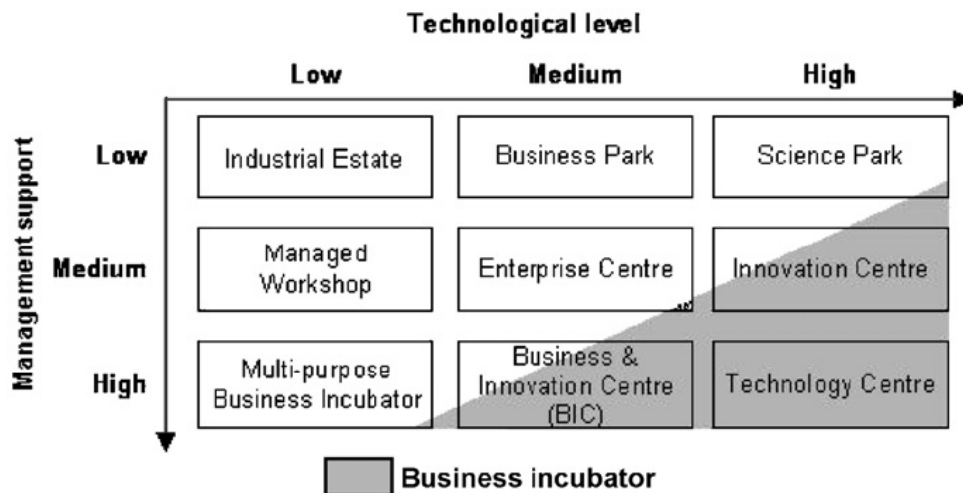


Figure 1 - Typology of Business Incubators (Aerts, et al., 2007, p. 255)

Becker and Gassmann (2006) propose a rather different typology, where the focus is on the initiating entity behind the effort (Figure 2). It can in many ways be seen as a more detailed version of the categorization proposed by Grimaldi and Grandi (2005), although Becker and Gassmann make no reference to their work.

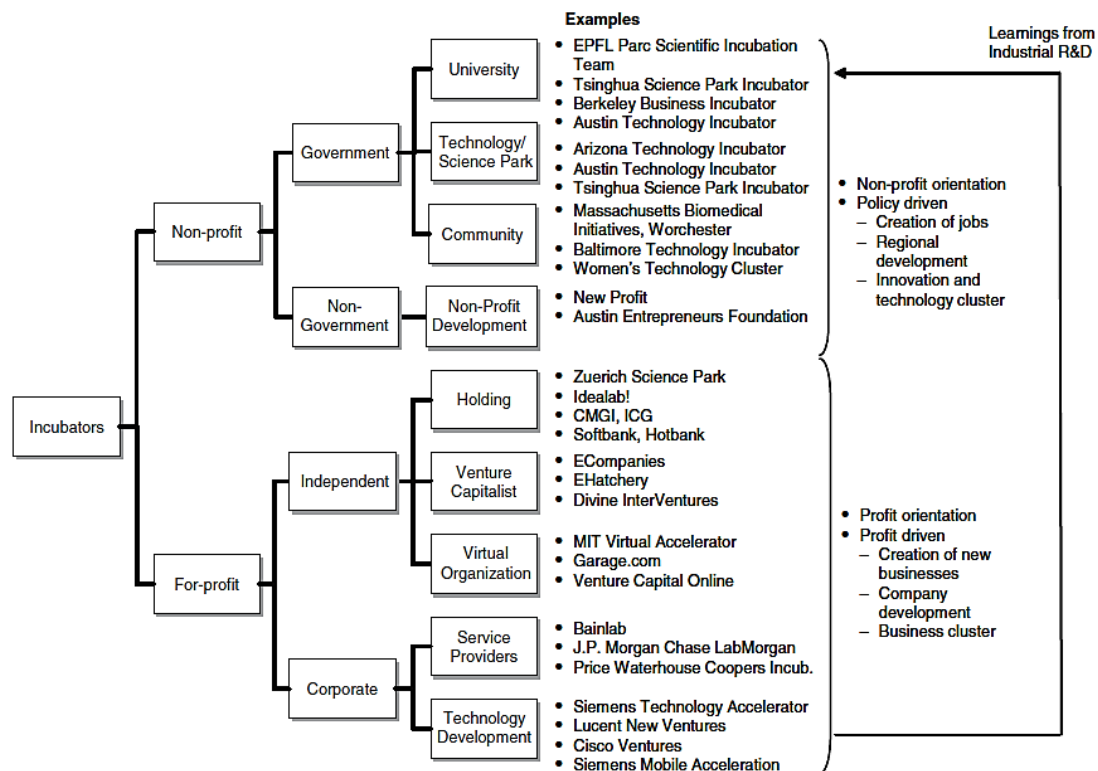


Figure 2 –Typology of incubators (Becker & Gassmann, 2006, p. 472)

A handful more classifications, categorizations, typologies and archetypes (these are readily compared by subsequent authors without regard to term used) were found. Barbero et al. (2012) give the most recent summary in the literature reviewed, noting that new types of incubators are still emerging.

The key point to distill is the variety in the field, which again has implications when looking at results and to what types they are applicable. It is clear that we do not have a case of one-size-fits-all and that regional circumstances and the overall goal has large implications on the incubator format chosen.

2.3 INCUBATOR PURPOSE

Of particular importance is the overall purpose of the incubator. Is it regional development? Job creation? Education of new entrepreneurs? It makes intuitive sense that for the initiatives undertaken to make the greatest positive difference, they must all work towards the same objective, or at least compatible objectives, or risk simply being a chaotic assembly of well-meaning, but ultimately futile actions.

On the basis of a long list of definitions from 1985 and onwards and together with their own fieldwork, Hackett and Dilts (2004) condense the common incubator objective as:

“... facilitating the successful new venture development of the incubatees while simultaneously containing the cost of their potential failure.” (Hackett & Dilts, 2004, p. 57)

And in a follow-up article in the same journal (Hackett & Dilts, 2004)(b), the two authors clearly express the sentiment that incubators are a means to aid vulnerable startups survive until they can become self-sustaining. This sentiment is mirrored across the literature reviewed for the project as well. Along the same line of thinking, Freeman et al. (1983) talk about “liability of newness” and the low survival rates of startups are well reported too (Shepherd, et al., 2000) (Townsend, et al., 2010) (Marmer, et al., 2011). Startups hence experience challenges that are simply inherent in the process of creating a new venture, challenges that can be lessened by an outside actor – in this case an incubator.

A few take a more controversial stance, arguing that the market itself will reject those startups that simply do not produce adequate value. Finer and Holberton (2002) consider incubators little more than a fad, using data on for-profit incubators to show how the incubators – according to the authors – rarely succeed. The authors reference the dot-com-bubble extensively, so perhaps it soured them on the concept. A little more recent, but still critical, is the article by Tamásy (2007). Here, public initiatives are blamed for creating unsustainable incentives, with the ultimate recommendation of never using public funding for them. Yet, these voices remain in the minority. The *market failure view* (Hackett & Dilts, 2004, p. 62) has many more supporters, arguing that the barriers to entry are unnecessarily high and that value can be gotten from lowering them and thus increasing new venture formation.

But let us go one step further: why do we want to encourage entrepreneurship? If go through all this trouble of creating an institution to further its cause, it stands to reason that we better be sure about the core motive behind such an effort.

First, a definition of entrepreneurship is appropriate. If we want to discuss its merits, it seems appropriate to specifically define what those merits are attached to. Turning to none other than Schumpeter, we get the well known description of the entrepreneur as the facilitator of new combinations that continually revolutionizes the economic structure, setting in motion the process of creative destruction by replacing incumbents (Schumpeter, 1934) (Schumpeter, 1943). For this attempt at an entrepreneurship definition not to take up the rest of this report, I shall jump straight ahead to the newest contemporary example. In a very thorough analysis and persuasive discussion, Davidsson (2016) comb through a vast number of definitions (including Schumpeter's) and ultimately proposes:

“... that entrepreneurship be defined as *the competitive behaviors that drive the market process*, alternatively phrased as *the introduction of new economic activity that leads to change in the marketplace.*” (Davidsson, 2016, p. 1)
(Author's emphasis)

It should be noted that Davidsson also includes established companies as a place where entrepreneurial activities can happen, not just startups, but it is of course the latter that is of interest here. From Davidsson's discussion it is made clear that these *changes in the marketplace* are a positive thing, an absolute good. Economic growth is a good thing, ensuring a more prosperous tomorrow for all. Although it may have its pitfalls and challenges, in a broader perspective it increases our standard of living and in turn ultimately decreases human suffering.

Taking that for a given, are startups then a good way to promote economic growth? Nightingale and Coad (2014) deliver a rather bleak outlook on the consequences of new venture creation, writing in response to the anomaly that they claim Silicon Valley is:

“But in many other areas the evidence suggests the contribution of entrepreneurial start-ups to the economy is limited and in some cases can be potentially damaging.” (Nightingale & Coad, 2014, p. 136)

The authors make the argument that instead of blindly encouraging all types of entrepreneurship, policy should specifically focus on what they call *gazelles* – high impact firms – instead of *muppets* – marginal undersized poor performance enterprises. Yes, the latter is an acronym. Addressing the issue of public policy, Shane (2009) brings forth a similar view. It is not simply about increasing the odds of startup success, per the earlier references to poor survival rates, as the continuum of entrepreneurship is so wide that it includes unproductive efforts as well. Thus, for an incubator to achieve the objective of encouraging entrepreneurial activity that also benefits society measurably, it cannot be just any kind. Not everyone can be an entrepreneur. Is this then the kind of entrepreneurship that incubators today encourage?

If we look at the common incubator objective that started this discussion, we see that it is not specific enough to delineate the types of entrepreneurship supported, nor is there any specificity when looking across the literature in general. We could of course assume that for-profit incubators may have a clear incentive to foster gazelles, but it is straightforward to see that this will hinge on their business model. If their revenue stream is mainly focused on renting out office space, then startups that achieve rapid growth, and as a result move out and establish themselves independently, may not actually be valuable. On the contrary, startups that just barely do well enough to pay rent year after year becomes the ideal customer. We thus arrive upon the issue of incentives. Whether for-profit or non-profit, public or private, there will be some feedback mechanism that keeps the wheels going. Universities, dependent on public funding, will be measured according to performance metrics determined by deans and the university board. Even individuals offering office space and coaching for free, will be motivated by some specific outcome.

2.4 INCUBATOR PERFORMANCE METRICS AND IMPACT

What exactly to measure incubator success on is a key issue in incubator literature. Survival rate, as alluded to above, is not an appropriate metric and has been criticized by numerous authors. Phan et al. (2005) delivers a particularly insistent argument on the subject, writing:

“A serious problem with research in this area is that the typical dependent variable, the rate of firm survival (or failure), has little construct validity, since incubators are specifically designed to maintain and increase life span. In short, such studies are selecting on the dependent variable, which creates an endogeneity problem.” (Phan, et al., 2005, p. 167)

Despite this, the authors still see survival rates as a valuable metric when comparing incubators. Recognition of the endogeneity problem² varies. Barbero et al. (2012) reference Phan et al. (2005) in agreement and use completely different metrics in their empirical study, while Aerts et al. (2007) acknowledges the arguments made by Phan et al., and follows their suggestion in using it to compare different incubators. Going back to the article by Hackett and Dilts (2004), they regard the survival rate as fundamental when considering incubator impact. Their work is highly cited in the field and perhaps the inclination to stick to this metric comes from them too. Other authors to use or make reference to the metric are Bøllingtoft and Ulhøi (2005), Bøllingtoft (2012) and Mas-Verdú et al. (2015) to name a few. The newest review article on the field by Mian et al. (2016) does unfortunately not address the issue.

A connection to the research stream exemplified by Shane (2009) and Nightingale and Coad (2014) on the at times questionable output of entrepreneurship is never made in the incubator literature. While there certainly is some discussion on what kind of startups should be incubated – high-tech, medical, etc. – the issue of survival rates never amount to more than a critique of statistical methods (as per the endogeneity problem mentioned).

What else can we measure that might be indicative of a substantial contribution to economic growth? The previously referenced article by Barbero et al. (2012) use a total of nine performance indicators in five categories in their study of 70 Spanish incubators, with data collected through questionnaires. They address growth in sales and employment, participation in R&D programs, input R&D, output R&D and cost per job. One of the authors' influences, Mian (1997), uses a complex model based on the underlying motivation behind the incubator, with a total of ten performance indicators (including survival rate). Many of these are rather “soft” indicators, where a positive or negative evaluation is subject to interpretation, making larger scale comparisons difficult if not impossible. Also referenced by Barbero et al. (2012) is a study by Bigliardi et al. (2006) in which they describe the complicated evaluation criteria

² “Simultaneous causality between the dependent variable and an endogenous variable that is used as an explanatory variable.” (Black, et al., 2012)

employed by four different Italian incubators. A much simpler metric is reported by Allen and Weinberg (1988), where performance is simply measured as the ratio between startups exiting the incubator (to operate independently), to startups seizing operations while still tenants. Other similar studies exist employing a multitude of metrics, but with no clear consensus on what constitutes the most appropriate. Many authors suggest forming metrics in relation to the goals of the specific incubator in question.

Regardless of the measured quantity, the literature is quite clear in the overall judgement of the outcomes: Inconclusive. Mian (1997) argue that the field still too new to be properly evaluated, Chan and Lau (2005) say the effectiveness of the incubator phenomenon is still unclear. Aerts et al. (2007) call incubators a powerful instrument and an important dimension in the innovation ecosystem, but offers little to back it up. Tamásy (2007) is highly critical of the impact of incubators, arguing that they tend to fail at supporting entrepreneurship, innovation and regional development. Bergek and Norrman (2008) critique the lacking framework for adequate evaluation. Schwartz and Hornych (2008) state that no final conclusion on effectiveness is currently possible and two years later the same authors restate the point (Schwartz & Hornych, 2010). Scillitoe and Chakrabarti (2010) come to the same conclusion in their review of much of the same literature. The most recent review article read, (Mian, et al., 2016), call the literature in the field fragmented and anecdotal, sometimes best described as atheoretical, yet remain decisively positive regarding the future of incubators as both a tool and research field.

Regional effects have also been widely reported, further making overall conclusions difficult. In the newest contribution to the issue of contextual factors Mcadam et al. (2016) write:

“This approach contrasts with a universal best practice ethos applicable across all regions and suggests the need to identify and leverage unique and idiosyncratic regional influences on university incubation models.” (Mcadam, et al., 2016, p. 69)

The authors conclude, based on their empirical work, that these variances originate from both the macro and meso environment, i.e. regional and organizational respectively, and thus should have large implications on the chosen incubator strategy. Essentially, we cannot expect to implement the same incubator concept across nations and see great results everywhere. With such a heterogeneous collection of initiatives, expecting a conclusive and easily interpreted set of results is perhaps wishful thinking.

Clearly something is driving the interest from both academics and practitioners and a more pragmatic view may be that this popularity has to stem from some actual impact. Furthermore, current failings of its implementation should perhaps not spark the doom of the incubator as a whole, but rather taken as a critique of its current, underdeveloped form. After all, Aerts et al. (2007) found that of the 100 incubators across Europe they investigated, only a minority actually invested in their tenants and provided real support – essentially what they are supposed to do. Bruneel et al. (2012) too came across an incubator in their case study which offered no coaching or mentoring services.

2.5 INCUBATORS AND UNIVERSITIES

Of special interest to this project is of course the relationship between universities and incubators. Just like the origin described earlier, the incubator phenomenon is tightly connected to universities and the innovation ecosystems surrounding them. The often mistaken equivalency between science parks and incubators is perhaps the best indicator of this. The vast majority of the reviewed articles likewise mention university linkages in at least some capacity.

The university incubator, as covered briefly earlier, is a standard type in the models described in literature. It primarily sets itself apart from the non-university-attached incubators when it

comes to technology transfer, whereby breakthroughs made in university research is commercialized through a link with entrepreneurial talent on campus (Grimaldi & Grandi, 2005). This particularly appears to be the case with specialized universities, like in the instance of the Swedish Karolinska Institute as covered by Baraldi and Havenvid (2016). Unique to the Karolinska Institute is the fact that one of the support organizations behind the investments is on the Swedish stock exchange, an atypical circumstance regardless of university affiliation.

In addition to typical services like office space and business assistance, Grimaldi and Grandi (2005) emphasize student employees, university image conveyance and labs as unique to university incubators. In particular the affiliation with the university, as viewed by external partners, makes a significant difference with regards to the legitimacy of the new ventures. In their article, Grimaldi and Grandi (2005) distill two models of incubator operation and find the university incubator drawing parts from each, both offering tangible assets and market commodities (model 1), and intangible and high value assets with a focus on intensive networking and funding opportunities (model 2).

The connection to another main university function, education, has also been made through more than just access to student employees. Ollila and Williams-Middleton (2011) describe the case of the Chalmers School of Entrepreneurship, also located in Sweden, and how they have integrated a university incubator with an entrepreneurship degree to great success. The approach employed at their incubator is very externally focused, as most of the projects worked on by students are sourced from Swedish companies. While not as complex as the investment model found at Karolinska Institute, the setup used at Chalmers does feature multiple sections with both a holding company and external investors. Barbero et al. (2012) investigate four incubator archetypes – basic research, university business incubator, economic development incubator and private incubator – through data collected in Spain. They find the university incubator in particular is able to find funding through domestic R&D programs and argue, perhaps unsurprisingly, that this is likely due to the competences already held through technology transfer offices. They find the same characteristic holds true for participation in European R&D programs.

In a study of exploration-exploitation strategies in relation to academic spin-offs, Soetanto and Jack (2016) find that both entrepreneurial and networking support enhances performance, but that the former is better with an ambidextrous strategy, while the latter is more appropriate with an exploitation strategy. The authors argue this warrants a flexible incubator service offering, adapted to each spin-off and its unique circumstances.

This finding is particular important to the policy practice in supporting the survival and growth of academic spin-offs. Policy-makers, universities, and business incubator promoters should be aware of their indirect impact on spin-offs' performance. (Soetanto & Jack, 2016, p. 37)

Much akin to the articles discussed regarding incubator impact, Soetanto and Jack likewise note that knowledge of incubators and incubation practice remains fragmented. Just like in the previous areas covered, a general consensus is still far from being reached, which does however also invite new ideas and approaches.

2.6 INCUBATORS AND STARTUP SELECTION CRITERIA

With an incubator being a property based initiative, finite restrictions on the number of office spaces available naturally fosters some startup selection criteria. And even with plenty of physical space, the needed business guidance and additional services can be highly resource intensive and thus likewise impose limitations on the quantity of startups housed.

One of the first articles to deal with this issue is by Lumpkin and Ireland (1988). In it, they explore the use of a set of so-called critical success factors in three categories that address financial ratios (liquidity, profitability, asset utilization,) personal characteristics of the

management team (age, sex, technical skills, creativity, personal investment, ...) and market factors (current size, growth rate, written business plan, ...). The authors propose the financial ratios with some caveats, noting that a new business may not have the financial history to actually produce any measurements of value. In their following analysis of empirical data, they note that of the surveyed American incubators, 15% employ no selection criteria at all. Although a minority, it still highlights the fact that it apparently was a viable option for some incubators. Lumpkin and Ireland (1988) also find that the incubator type (public, profit, etc.) influences selection criteria to a significant degree.

The next contribution to the subject does not happen until the new millennia with the work of Hackett and Dilts (2004), who in their review of the incubator field too note the curiously lacking research in the years between³. Hackett and Dilts suggest differentiating between applicants by dividing them into three overall groups of those that cannot be helped through business incubation, those that should be incubated due to the existence of some resource gaps and those that do not need to be incubated.

“Ideally, only those firms that are “weak-but-promising” (weak due to a lack of resources, but promising in the sense that they have built a compelling business case) should be considered incubation candidates.” (Hackett & Dilts, 2004, p. 62)

With the mention of the business case, the authors appear to put emphasis what Lumpkin and Ireland (1988) would label as market factors.

The next in-depth article exclusively on the subject of selection criteria comes from Aerts et al. (2007). In their review of 100 European incubators, only 3 have no screening practices at all, while 76% of those that do use a committee and the remaining (24%) leave the selection process to one person alone. The authors use the categorization by Lumpkin and Ireland (1988) to divide the incubators into four groups: financial, team, market and balanced screeners. With 61% the market factors dominate easily over team (27%), financial (6%) and balanced (6%). No significant relation between neither incubator characteristics (age, funding, service offers, ...) nor incubator type (for profit, non-profit) with screening type was found. Although the authors use the questionable metric of survival rate discussed previously, they do find a relation between that and a more balanced screening profile nonetheless.

Bergek and Norrman (2008) propose a rather simple matrix of selection strategies that delineates between team vs market focus on one axis and screening intensity on the other (Figure 3).

Selection strategies	Survival of the fittest	Picking the winners
Idea-focused selection		
Entrepreneur-focused selection		

Figure 3 – Selection Strategies (Bergek & Norrman, 2008, p. 24)

³ Despite specific searches to address this apparent gap in the previously found literature, no articles look to have been published on the subject. This is too evidenced when looking through post-2000 articles and their references.

The authors here use “idea-focused” and “entrepreneur-focused”, but they can be considered comparable to the team vs market terms employed by Aerts et al. (2007) and Lumpkin and Ireland (1988). The second dimension addresses the degree to which incubator management engages in the selection process with survival-of-the-fittest being rather loose and picking-the-winners requiring a lot of evaluation and screening work. The authors go on to map 16 Swedish incubators according to the matrix, finding only one using a survival-of-the-fittest approach. Many of the incubators with a very strict selection process had pre-incubation programs with lower barriers to entry, thus acting like a funnel for possible candidates to the actual incubator.

Looking across different generations of incubators (1980s, early 1990 and late 1990s together with early 2000s), Bruneel et al. (2012) end up concluding that the seven surveyed incubators have vague selection criteria and poorly defined exit strategies. While technology focus, innovation height and like characteristics were preferred, a structured set of selection criteria was missing.

It is reasonable to assume that the selection criteria applied at an incubator plays a big part of its subsequent performance, regardless of the metric being used to judge its level. As Aerts et al. discuss, a picking-the-winners strategy should ideally produce more financially viable companies. But is the output then the result of actions by the incubator management or would the startups have succeeded either way? Discussing this exact issue, Bearse (1998) uses an education analogy and provokingly asks if Harvard students do well because of Harvard, or whether Harvard only recruits students who do well. A straight forward answer to this conundrum is likely difficult to come by.

As the startup portfolio grows, a potential for synergy emerges. Hansen et al. (2000) argue that just like a conglomerate, an incubator benefits from specialization because management competences, available services, network partners, etc., all focus on the same field. A diversified portfolio on the other hand would spread the resources too thin, they claim, making the whole not greater than the sum of its parts (Hansen, et al., 2000, p. 80). This sentiment is mirrored by Aerts et al. (2007), whose only reservation is the added risk, should the chosen field face a downturn due to external, uncontrollable circumstances.

Schwartz and Hornych (2010) appear to be the first to deal with the issue empirically. In a case study of a German incubator specializing in media startups, the authors find both advantages and disadvantages to the narrow portfolio. Of the former they list high-quality premises and equipment, improvement of service and consultancy offerings and finally image effects for the location. Of the latter they mention issues with internal networking activities and a negative working environment. While the startups in the studied incubator were not direct competitors, the authors do argue that such may likely be the exception and that this could further hinder internal communication. The problem with actually finding enough startups in a given niche is also brought up. Two years later, the authors tackle the subject once again (Schwartz & Hornych, 2010), this time in a larger study of 150 German incubators. Their findings show that specialization does not aid internal communication, setting it at the same level as diversified incubators.

And lastly on the topic of selection criteria, Wulung et al. (2014) bring out the big calculators to develop a mathematical model incorporating manager orientation into the process. On the premise that a balanced set of criteria produce the best results, the model utilizes three functions that deal with profitability, survivability and ability to reduce unemployment. While the approach is certainly unique and may offer an advantage in the selection process, the chances of getting the incubator management team to actually use it a likely very slim, especially considering the fact that many even struggle to organize any formal process in the first place. Jumping straight ahead to a level of technical expertise that requires a master’s degree in mathematics is perhaps too great of a leap in one go.

It should be rather clear that there is certainly a lot left to be uncovered when it comes to selecting startups for an incubator. Even more so as regional effects play into this area as well.

2.7 INCUBATORS EVOLVED: ACCELERATORS

The newest innovation in the field of new venture support mechanisms is the so-called accelerator. While peer-reviewed literature on the subject is still extremely sparse, only a few published articles exist, it nonetheless deserves to be mentioned as an indication of where the field is heading.

Having been created as recently as 2005, Y-Combinator (based in the USA) is widely reported to have been the very first accelerator and as such has largely formed the definition of the term too (Kim & Wagman, 2014). Accelerators can essentially be considered short duration, high intensity incubators with a strict screening process and an equity stake taken by the management. For Y-combinator the duration is three months and 7% equity (Y-Combinator, 2016). The participating startups receive intense coaching and will at the program's end get to pitch their business to a group of investors, with the accelerator itself aiming to exit early. According to Seed-DB, a site indexing accelerator programs, 187 exist at the time of writing, with Y-Combinator leading by a significant margin in their funding and exit metrics (Seed-DB, 2016).

One of the first articles dealing with the subject is the just referenced one by Kim and Wagman (2014), in which they evaluate portfolio size and information disclosure options in respect to the incentives an accelerator faces. A more introductory article is first published two years later in the form of the work by Pauwels et al. (2016). Here, the authors cover accelerators from the view of them as a new generation of incubation model and explore their function through case studies featuring 13 European accelerator programs. On this basis they identify three distinct accelerator types: The ecosystem builder, the deal-flow maker and the welfare simulator. The first is intimately attached to a corporate entity wishing to develop an ecosystem of startups around their particular field (Microsoft Ventures Accelerator is their example). The second type is primarily aimed at identifying promising investment opportunities for business angels, venture capital funds, etc., and tends to select startups in later stages of development (Y-Combinator is the mentioned example). The third type, the welfare stimulator, is focused on stimulating startup activity and creating economic growth in a region or technological domain. It tends to select startups in their early stages, at times even without a well-developed value proposition (Pauwels, et al., 2016, p. 21). Hybrid types, accelerators incorporating elements from two or more types, were also found and they too give examples of university accelerators. In their discussion, Pauwels et al. also position the accelerator in relation to the traditional incubator, partly addressing the issue of survival rates:

“Earlier, some incubation models have been accused of merely acting as life support and keeping tenants alive in order to secure rent and fill their incubation space. As most accelerators invest in their start-ups the accelerator model has an added incentive to make sure that the selected start-ups survive and scale. Accelerators are a way to shorten the journey of start-ups, resulting in either quicker growth or quicker failure.” (Pauwels, et al., 2016, p. 23)

This is particularly interesting, as it clearly points to a benefit of this new incubator generation. And while the short duration of an accelerator may not fit all circumstances and objectives, it could certainly act as an inspiration to traditional incubators in other areas, like investments.

2.8 INCUBATORS AND EXTERNAL PARTNERS

While the value of a wide network is well recognized in the reviewed literature, more detailed investigations on the specifics of collaboration between startups and established companies is largely absent. Given the open questions in the field discussed earlier, it is perhaps not too surprising that this area is yet to be explored in depth. As such the following section will look at

a selection of literature dealing with not only startup-corporate collaboration, but also innovation in established companies in general. Many different concepts, constructs, frameworks and models exist, so it is certainly not the goal to cover them all, but more bring attention to a few, in order to create a bigger picture of available evidence for the validity of startup-corporate collaboration.

To start with the most direct link to incubators, we shall look at the corporate incubator (and recently accelerator). Here we see the corporation as involved in the incubation process as it can possibly be. In the continuum of incubators developed by Allen and McCluskey (1990), the corporate incubator is not included because, as the authors note, “...few of these exist, and they are more experimental than the other types.” (Allen & McCluskey, 1990, p. 65). The authors regard this type as just starting to be a distinct group at that point in time, and thus we can likely date its origin to the late 1980s. Perhaps the exclusion of the type from the continuum is the reason Gassmann and Becker (2006) so many years later can still regard them as having “...only recently emerged as a prominent organisational form of R&D.” and arguing that “... little research has been undertaken on the increasing empirical relevance of this recent phenomenon.” (Gassmann & Becker, 2006, p. 20). The authors’ argument is validated by the results of the literature search for this report - very little has been published. Gassmann and Becker (2006) define the corporate incubator like so:

“Corporate incubators are specialised corporate units that hatch new businesses and enhance a corporation’s technology base to support its overall development and growth. The object of their support can be external or internal start-ups, or entrepreneurs with a promising business idea, or technology...” (Gassmann & Becker, 2006, pp. 21-22)

As covered earlier, Grimaldi and Grandi (2005) include the corporate incubator in their categorization and their description of it puts it very close to the above quote, although they do not deal with the type in-depth.

A corporate incubator can be regarded as a form of corporate entrepreneurship, clearly evident if one subscribes to the definition of the latter by Arteaga and Hyland (2013):

“Corporate entrepreneurship is the creation of new businesses within and outside the company, which leverage current competencies and evolve new ones through innovation for the purposes of growth and corporate renewal.” (Arteaga & Hyland, 2013, p. 44)

The two definitions are not exactly difficult to get mixed up and the corporate incubator is also listed as a form of corporate entrepreneurship by Arteaga and Hyland. Corporate entrepreneurship is significantly more established in the scientific literature and as such lends some of its credibility to the corporate incubator concept. It also appears to be employed as the unifying topic for many other concepts in the innovation literature.

One such is *open innovation* (also listed as a form of corporate entrepreneurship by Arteaga and Hyland (2013)). First formerly introduced by Chesbrough (2003), it has since been argued that the practice behind the term begun its use long before (Huizingh, 2011). Defined as “*the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and to expand the markets for external use of innovation, respectively*” [(Chesbrough, et al., 2006) via (Huizingh, 2011, p. 2)] is emphasizes an open attitude towards collaboration with outside partners and hence is of particular importance when looking at the incubator-corporate relationship. As Dahlander and Gann, (2010), Cheng and Huizingh (2014) and others show, there is well backed link between openness and innovative capability. Evidence supporting open innovation as a formal, strategic approach to the issue of corporate renewal is not difficult to come across.

Learning has been touted as one of the main activities in startups (see for instance Ries (2011), Blank (2003) and Thomke (1998)) and learning in corporations has likewise been the subject of much research, perhaps most prominently through the concept of absorptive capacity. Introduced by Cohen and Levinthal (1990), it describes a company's ability to recognize the value of new, external information, assimilate it, and apply it to commercial ends (Cohen & Levinthal, 1990, p. 128). As the aforementioned authors on learning in startups argue, this is not just important for a startup's ability to innovate, but a prerequisite of merely surviving, and thus by extension successful startups must have significant absorptive capacity. Gray (2006) has investigated this link specifically. While it is not a question of a simple 15 minute presentation to teach a corporation to have absorptive capacity too, it is conceivable that there is an opportunity for knowledge transfer that would in turn increase the absorptive capacity of the corporation. One major obstacle towards doing so in a corporation arises if it is lacking exactly absorptive capacity in the first place. Cohen and Levinthal (1990) call this condition lockout. It comes as the result of lacking investments in initiatives that can increase absorptive capacity (like basic R&D), which again means that the company will lack the knowledge to correctly value new opportunities, and it is exactly these new opportunities, that – if seized upon – could have further bolstered the absorptive capacity of the company. We thus have a feedback loop. In regards to startup-corporate collaboration, it means that the value proposition of a collaborative effort can be inherently difficult for a corporation to spot.

There appears to have been a tradition of positioning corporations and startups as adversaries. Schumpeter (1943) was perhaps the first to do this with his notion of creative destruction. The creative endeavors of new market entrants displace and ultimately destroy incumbents, then become established themselves, only to be displaced by the entrants of tomorrow in a continuous cycle that “... *incessantly revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating a new one.*” (Schumpeter, 1943, p. 83). These days, disruption, rather than destruction, looks to have become the buzzword, with corporations afraid of being disrupted and startups looking for someone to disrupt. Likely originating from the work of Christensen (1997), disruptive innovation has gathered quite the following. Christensen describes a process in which an incumbent is displaced by a new entrant through a very specific path, but today the term is applied more broadly⁴. The general idea seems to be that the new entrant – the disruptor – will suddenly appear out of nowhere to bring a once great corporation to collapse in a little more than a few years. Since the disruptor came from an unexpected field, the corporation had no chance to prepare a defense and can only watch as their market dies out and they follow along with it. This is the fear, and as fears often go, it is perhaps not the most rational one.

For startups and corporations can just as well coexist and succeed because of one another, not in spite of. Agarwal et al. (2007) turn the notion by Schumpeter on its head and introduce creative construction as an alternative where entrepreneurial effort results in complementary, not competing, value that works to create growth in industries, regions and economies. In a process they dub knowledge spillover-based strategic entrepreneurship, they argue that corporations can purposefully facilitate the creation of new ventures by ex-employees and benefit from the knowledge spillover that such represents. Instead of resulting in ventures that compete on the same parameters as the incumbent, the spillover will lead to heterogeneity in capabilities and performance and ultimately incumbent growth. Although Agarwal et al. (2007) do recognize that this perspective is indeed an optimistic one, their view can in some sense be regarded as echoed by the rising popularity of the corporate incubator. Leveraging strong formal and informal ties to the new ventures should also aid in growing the absorptive capacity of the incumbent as their knowledge network effectively expands as well.

⁴ Christensen has himself addressed the issue of applying the term outside the initial definition (Christensen, et al., 2015). Schmidt and Druehl (2008) have also noted that: “A *disruptive innovation* (i.e., one that dramatically disrupts the current market) is not necessarily a *disruptive innovation* (as Clayton Christensen defines this term).” (p. 347).

With some of the theoretical perspectives covered, I shall lastly in this section bring attention to a few practical initiatives taking place here in Denmark that addresses collaboration between corporations and startups and the ecosystem around it.

Stibo Accelerator is an initiative run by Stibo A/S, a large multinational working in field of information management (Stibo Accelerator, 2016). Despite the use of the accelerator moniker, it is not such in the sense discussed earlier. Rather, it is an offer to master's students to write their thesis in an embedded context within the Stibo environment. There are no contracts or obligations and the student retains all rights to his or her work. Thus, there is no direct monetary value being exchanged, instead it is focused on knowledge sharing:

“Regularly during the projects, the students in the Accelerator are asked to participate in some form of internal meeting or staff session sharing their ideas and research findings with the STIBO staff. This way the students get valuable experience in presenting the business values in their ideas and the Stibo staff members are kept up to date with cutting edge trends and technologies.” (Stibo Accelerator, 2016, p. 5)

The connection to the previously discussed concept of absorptive capacity is not hard to spot here. The initiative was started in 2014 and Stibo currently lists 33 completed or running projects, with two of those having been incubated into self-sustaining business (Stibo Accelerator, 2016, p. 3). Spar Nord aims to adopt a very similar model beginning 2017 under the Future Finance headline.

Closer to the university still is the program led by DTU and supported by The Danish Industry Foundation (Industriens Fond) called Bridging the Gap (Technical University of Denmark, 2016). The program was conducted over a two year period and had as its focus on finding a new innovation model that could aid in increasing the number of university spin-outs. Its main feature, so to speak, is the involvement of an external serial entrepreneur in the spin-out process. Researchers are matched with this entrepreneurship expert (or multiple) in order to commercialize a university-developed piece of technology. The expert not just acts as a consultant, but is expected to take on a key position in the created venture, possible even CEO. Payment comes in the form of a stake in the created venture, as there is no other form of compensation. The initiative is another way for the established organization, here a university, to leverage knowledge that could easily otherwise be relegated to a desktop drawer. By forming a relationship with an entrepreneurially minded entity, this time an actual entrepreneur, greater value is created. The developed model is not far from what takes place in a corporate incubator.

Lastly we get to Connect Denmark. Perhaps best described as a networking organization, it seeks to connect entrepreneurs with its members from various Danish industries. The main activity is what they call Springboard events, where a company (likely startup or other small venture with growth potential) gets to pitch in front a selected group of members in order to get advice on their strategy. Despite the association being a non-profit, the business model is rather interesting, as it is the members giving advice who pays – not the attending companies. It again hints at the value new ventures can offer to senior executives and experienced businesspeople from larger, established corporations.

This section sought to provide evidence for the validity of startup-corporation collaboration and has done so through both the scientific literature and practical initiatives in Denmark. It is strikingly clear that corporations do not engage with startups merely for altruistic reasons. There is plenty of value for them to extract and repurpose in their own fields of business and the startups too stand to gain a lot. The relationship is clearly symbiotic.

2.9 INCUBATORS AND THE THEORY IN CONCLUSION

A reasonable theoretical foundation has now been established on which to begin the closer investigation of the incubator at AAU and the support structure around it. While the incubator literature is very much still developing and a lot is still uncertain, many interesting themes have been identified that can aid in the understanding of what is currently going on in the real world now and what could happen in the future. If the literature is indicative of the practical knowledge held on incubators around the world, then many opportunities exist for adding valuable insights through the work at AAU.

3. METHOD SELECTION AND PROCESS OVERVIEW

The main method of this project is the case study. With an organizational context so easy to access, it is a straight forward way to capitalize on the resources given and the insights that may lie waiting there to be uncovered. The choice is to a large extent influenced by the literature review and the methods selected by a majority of the authors featured. It carries significant weight that these authors chose not only the method of the case study in areas with superficial similarities, but that they have made the choice specifically dealing with incubators and many highly related problem statements.

In his article on university incubators, Mian (1997) argues that the case study approach:

“... allows us to consider those unique characteristics of communities around which these projects have been formulated, and in-depth interviews of the various stakeholders would yield a solid picture of incubator operations.” (Mian, 1997, pp. 260-261)

Chan and Lau (2005) use the approach in their research on incubator programs in science parks, with their data specifically coming from “... retrospective in-depth interviews with the founders/entrepreneurs...” (p. 1217). The same goes for Grimaldi and Grandi (2005), Bøllingtoft and Ulhøi (2005), Becker and Gassmann (2006), Schwartz and Hornych (2008), Ollila and Williams-Middleton (2011), Baraldi and Havenvid (2016), Mcadam et al. (2016), (Pauwels, et al. (2016) and others in the reviewed literature. Most of the authors cite Eisenhardt (1989) as their theory reference and it will too be the main influence for this report.

Eisenhardt (1989) emphasize three key strengths of case study research: High likelihood of generating novel theory due to the juxtaposition of contradictory evidence, high likelihood of the emergent theory being testable with constructs that can be easily measured and finally that the resultant theory is likely to be empirically valid. Of weaknesses, Eisenhardt mentions overly complex theory resulting from the vast amounts of data collected and narrow and idiosyncratic theory with lacking generality. The author concludes:

“... given the strengths of this theory-building approach and its independence from prior literature or past empirical observation, it is particularly well-suited to new research areas or research areas for which existing theory seems inadequate.” (Eisenhardt, 1989, pp. 548-549)

As said, the main drawback of case studies is the issue of generalization. What has been observed in the specific case may not be applicable to the wider population. As the findings of this project have the main goal of becoming applicable at the incubator housing the case study, it is not a significant concern. Opposed to the referenced literature above, theory development is not the focus here, at least not in the same sense. While the result will be an internally consistent and well-grounded prescription of what ought to happen at the incubator, larger implications of the findings will serve as an addition, not the main course.

Of course, choosing one method sees others discarded. As the previous semesters have been vastly different with respect to precisely the method chosen, the decision not to go with the known deserves a remark.

The Entrepreneurial Engineering program and the curriculum are partially built around the discover-incubate-accelerate (DIA) framework created by Arteaga & Hyland (2013) based on research conducted at the Rensselaer Polytechnic Institute on innovation and entrepreneurship. The framework sees an innovation journey – typically concurrent product and business development – as going through three distinct phases that each contains unique challenges. The three faces are Discovery, Incubation and Acceleration. The first and second

semesters both focused heavily on this approach, with supportive pitching sessions in front of an expert audience to guide the process along.

This project, however, was not destined to become an “innovation journey” and in no way included any form of product development. While some have explored the viewpoint of the incubator using a firm analogy (Aaboen, 2009) and privately driven incubators naturally face some sort of business development, neither appeared to reflect the reality very well at AAU. The circumstances of the incubator simultaneously looked ill-defined, yet not for an outsider to come in and dictate the development of. Attempting to carry out an iterative innovation process, like the DIA approach, would be a struggle and likely not produce much value for the stakeholder – AAU Inkubator. The core business, the incubator, is already being developed by the management team there and trying to co-opt such a process and force it into my choice of framework would not be very productive. Taking on a smaller, independent part would of course alleviate this issue, but, as you shall see, the incubator was far from developed enough to have such side tasks. A DIA approach, coupled with fitting tools such as the business model canvas, the value proposition canvas, design thinking methods, minimum-viable-products and the like could in no doubt have been forced onto the project. But that would be the method making the circumstances fit it, rather than the circumstances being the foundation for a fitting choice of method. And as the method itself is not the focus of the project, doing so would be the wrong decision.

3.1 PROCESS OVERVIEW

Eisenhardt (1989) emphasize the importance of the initial definition of the research question, even if made in broad terms, and the focus outlined in the introduction to this report is indeed in broad terms. It mainly dealt with the specific circumstances found in the incubator and to know those, I first had to familiarize myself with the organization. Setting up too narrow barriers beforehand would likely limit the value possible from my work as it would force my subsequent effort into a specific frame regardless of the actual needs found. And as stated earlier, providing actual value to the main stakeholder, AAU Inkubator, was one of the primary goals.

As Eisenhardt (1989) argue, the interview is perhaps the most often used tool in the case study method. Aside from the collection of general information about the incubator, AAU and initiatives in the region, the interviews became the main source of insight. Of the four members in the management team then, three were interviewed. Head of the incubator and my project contact, Morten Dahlgaard, was interviewed four times during the project. This created an opportunity to address my findings with him as they were made and to further allow for reflection on how the incubator was run. The first and last interviews were both with him. The first took place on October 28th and the last on December 13th, with the time from the very first meeting with Dahlgaard to discuss the project proposal – October 10th – being spent on reviewing the incubator literature.

Christoffer Baadsgard and Mark Rosener, both project managers and business advisors at the incubator, were interviewed once each. The last member of the management team, Marie Fallgaard Lund, was not interviewed due to time constraints and the fact that her work primarily focuses on more general SEA activities and not the incubator itself.

Five startups currently housed at the incubator were interviewed. The number of startups at the incubator roughly doubled during the project, so more could have been interviewed. It, however, became apparent that the amount of new information uncovered quickly declined and so more than the five interviews were not scheduled. One person from each startup was interviewed, with the exception of a two-man startup, where both members participated. Additionally, a classmate, Malgorzata Aleksandra Socha, did her project this semester at an incubator at Grenoble Ecole of Management and thus an opportunity to exchange thoughts on

the subject of incubators and regional effects presented itself. These issues were discussed during a meeting late in the semester.

None of the interviews were recorded, only notes were taken. This was judged to be sufficient to capture the information shared and also alleviated any concerns the interviewee may have had regarding such a recording. This appeared especially relevant in relation to the startups and their opinion of the management team. A list of questions was prepared for each group, startups and management, and it continually evolved as the process went underway. The questions focused on getting to know the dynamics at the incubator as well as more general enquiries on incubators, entrepreneurship, innovation and collaboration with external partners. The interviews were kept rather informal and were allowed to stray from the prepared questions if necessary. The duration was typically between one and two hours, depending on how much time the interviewee could allocate. After the interview, notes were amended as necessary. The goal was not to capture every little detail, but more to get a general idea of the interviewee's position on the main themes. Certain leads, like for instance references to other incubator programs or literature, were followed however.

Plans to interview other people with connections to the incubator were considered, but none of them panned out. The newly hired Director of Innovation at AAU, Søren Damgaard, was such one, as he will become the main connection from SEA to the university rectorate and thus larger strategic decisions. The confirmation of this hiring unfortunately came too late in the process to set up an interview.

The final areas of focus for this project, which you will see discussed in the next chapters, did not arise until much later in the process. At that point, all the necessary data had been collected, an extensive amount of literature had been considered and a greater synthesis could be formed. This will be the subject of the last chapter, but first - the data.

4. AAU INKUBATOR IN DETAIL

This chapter will dive into the specifics of AAU Inkubator and the strategy and vision accompanying it as it existed in the autumn of 2016. Even during the relatively short project period, the incubator changed quite a bit, and thus the following description is bound to become dated rather fast. The general observations, however, should hopefully remain valid a little longer.

4.1 A GENERAL OVERVIEW

The incubator was established in the summer of 2016, moving into its now semi-permanent dwelling in August. It is run by Supporting Entrepreneurship at Aalborg University (SEA), a division under the soon-to-be created AAU Innovation. Previously, SEA resided under the Faculty of Engineering and Science, but with recent changes to the structure, SEA has essentially been moved up a “level” and now reports to its own Director of Innovation, the newly hired and former executive at IBM, Søren Damgaard.

The physical location consists of a number of smaller office spaces – previously group rooms for students – and an even smaller office for the management, located in a building used for lectures, administration and other activities related to the Department for Business and Management. The main SEA offices are located close to, but in a different building. The crowded listing is also evident in the building. Many different people not related to the activities at the incubator have their daily routines at the place. The fact that it was established so recently is very evident and the experimental nature is not hard to sense. The incubator itself is very much a startup too. Three people, Morten Dahlgaard, Christoffer Baadsgaard and Mark Rosener, serve as the management team there. A fourth was hired late in November.

As mentioned briefly in an earlier footnote, the Inkubator name has been attached to many entrepreneurship-focused initiatives at AAU through the years. These have taken different forms, but were typically shorter courses or single-day events. This created some initial confusion on my part, as the literature I had already familiarized myself with clearly attached the incubator moniker to property based initiatives, of which none had taken place at AAU until this summer. The confusion went both ways, with others being familiar with the previous initiatives and not yet being aware of the new one. Looking at it as a question of marketing and branding, this is likely to be expected so early on. The earlier efforts were primarily led by a single individual, Christoffer Baadsgaard. The newly hired Director of Innovation also signifies a heightened focus on entrepreneurship at AAU, with the university strategy for 2016-2021 explicitly addressing the creation of an incubator environment.

“9.2 AAU’s entrepreneurial activities for students and staff will be increased. A flexible incubator environment will be included in a programme for the support of idea generation, business development, prototyping, proof-of-concept development, etc.” (Aalborg University, 2015, p. 25)

Although still slightly vague, the inclusion of this point in the strategy was praised by all interviewed members of the management team and emphasized as recognition of the importance they clearly feel entrepreneurship has.

The number of startups housed changed continuously throughout the project period, starting at about 7 and closing in on 15 towards the end. The first startups had gotten in mostly by referral, as many of the teams knew each other from previous education. The screening process for these was close to non-existent and the approval was made by whoever in management was approached by that startup. During the autumn, as office spaces filled up, slightly more deliberation was made (business plans were requested on a few occasions), but any resemblance to an actual screening process it did not have. Of the initial startups, the majority were game developers formed by graduated medialogy students. Three of these startups were nearing completion of their game, while two were in earlier stages. All were

going for traditional business models with regular asset sale as the main revenue stream. The artistic integrity of their creation was paramount for most. Aside from the game developers, the incubator housed a startup creating a platform for choosing meals and restaurants based on dietary constraints and lastly a startup doing a physical product, a snack bar based on flour made from insects. For the interviewed startups, risk appears to dominate over uncertainty, implying a low degree of innovation (Arteaga & Hyland, 2013).

The first social gathering was held shortly after the project started in mid-October. Two more were held before the Christmas holidays. Participation was optional, but strongly encouraged. Many, however, chose not to show up, feeling they could be more productive elsewhere. The same attitude presented itself to be a problem when lectures with external experts were held. Management guidance was given on initiative by the startups themselves and no set time scale or requirement for rate of progress had been put in place. A requirement for startup-created milestones was introduced at the second social gathering and is expected to be implemented in early 2017. Presence of management at the incubator is planned a month in advance, with there typically being someone present two to three times a week for around four hours at a time. The management team holds meetings biweekly.

No explicit strategy has been formulated and initiatives have been largely implemented ad hoc. Goals are likewise ill-defined and there does not appear to be consensus in management on what exactly the greater purpose is or how that may be measured. Recognition of the importance and complexity is, however, very evident when the subject is addressed in the interviews. There is little to no ongoing documentation of the work with the startups in terms of learning and accumulating knowledge at more than the level of individuals. The approach to entrepreneurship tilts towards a Lean Startup philosophy (Ries, 2011), which again indicates effectual logic (Frederiksen & Brem, 2016). Knowledge of the scientific literature on incubators was extremely limited.

Collaboration with outside partners primarily comes in the form of lectures given by external experts on various topics. This thus represents a knowledge and value flow into the incubator. Not directly attached to the incubator is the SPININ (spin-in) program managed by Mark Rosener (also in the incubator management team). Another initiative funded by The Danish Industry Foundation and developed by a university, this time Aarhus University, SPININ matches a startup with an established company in a growth oriented collaboration effort, where both partners ideally benefit equally (Aarhus Universitet, 2016). The introduction of this model at AAU was also funded by The Danish Industry Foundation, although that funding has now ended. The results have so far been mixed, and there have been concerns regarding the incentives behind the funding, as a lump sum of money was granted when a match was made, regardless of the quality or subsequent results. More funding was however available if certain growth metrics had increased at the end of the collaboration period. Currently the plan is to carry on using the model regardless of the now lapsed funding.

4.2 AAU STARTUP PROGRAM

This chapter began with the caveat that the given details only pertained to the current activities at AAU Inkubator. In December of 2016 AAU finally secured a major grant, which effectively increases the budget for incubator-related activities by a factor of 10 beginning in 2017. A total of 55 million DKK has been allocated over 5 years to the so-called AAU Startup Program, a new initiative focused on supporting and encouraging entrepreneurship among students and graduates. As SEA, and thus the current incubator, has previously been managed on a budget of a little over 1 million DKK, this inflow of funds is substantial to say the least. The current plan is to go from the current five employees to ten rather quickly in early 2017.

While the current AAU Inkubator is rather loosely run, the new AAU Startup Program is quite well defined – at least in comparison – and is laid out in the documentation that followed the funding application. This piece of documentation is the main source of information used for

the following. At its core is a three tier system under the headlines of Discovery, Start and Growth (“Vækst” in the documentation). Discovery is for applicants with little more than an idea and focuses on very early validation efforts through design thinking. Up to 10.000 DKK can be allotted for prototype development per project. Start is the tier at which the team gets a spot in the incubator. Here, the business idea must have a well-articulated value proposition and the team is expected to dedicate a significant amount of time for the project. A mentor will be assigned and weekly meetings will be conducted with a business developer. Between 2.000 and 7.000 DKK can be paid per month per team member for living expenses. Finally, Growth is for teams ready to work on the startup fulltime. The business idea must be validated, hold significant growth potential and have a qualified team. The monthly grant is increased to 9.000 DKK and AAU may take an equity stake of 8%.

The underlying innovation method is stated to be based on the Customer Development by Steve Blank (Blank, 2003). As the work of Blank is intimately linked with that of Eric Ries and his Lean Startup philosophy, this choice of theory is largely a continuation of the approach already taken. Design thinking (as mentioned with regard to the Discovery tier) has likewise been connected with Lean Startup (Mueller & Thoring, 2012). Thus, looking merely at the planning stages, the choice of method and general approach is consistent.

As stated above, the overall objective is to encourage entrepreneurship among students and graduates. The reasoning behind it takes starting point in the main purpose of AAU as an institution: Research, education and knowledge collaboration. These three elements are also found in the 2016-2021 strategy as core activities (Aalborg University, 2015, p. 3). It argues that a substantial part of fulfilling this purpose, in particular knowledge collaboration, arises from the establishment of conditions and competences that support business development and entrepreneurship. Thus, at a fundamental level, the goal of the incubator is anchored to the purpose of the university itself. This goal is later in the documentation extended to include job creation in the region, which can again be extrapolated as an argument for economic growth through entrepreneurship (cf. earlier discussion on incubator goals).

A total of seven key performance indicators (KPI) are established to measure goal fulfillment:

- Number of students accepted into the program
- Number of students creating a company following participation in the program
- Investment secured for startups in the program
- Number of AAU students receiving entrepreneurship courses
- Number of mentors involved with startups
- Number of corporate representatives involved
- Number of stories in the media about the program

No specific figures are given for what can be considered a success, but in an interview Dahlggaard mentioned that there have been talks about reaching a certain number of registered companies (CVR's) during the five year period.

Admission into the program will be based upon an application (regardless of the tier) and is put in place to evaluate both the proposed business idea and the applicant itself. For Discovery, this application is described as simple and admittance is handled by the management team. A short statement from a relevant lecturer or the like will be needed too. For Start and Growth, an evaluation panel, consisting of researchers and external partners, will be formed to judge the applications. Although the selection criteria are still rather vague, they do superficially appear to hint at a balanced set, much per the recommendation of Aerts et al. (2007). The documentation also explicitly states that projects, which fail to develop in a satisfactory manner, can be halted. This is in line with the argument made by Hackett and Dilts (2004), who states that an inexpensive failure can still be considered a success as the team is now free to go about more productive endeavors.

The evaluation panels will not be the only place for external partners, as they are heavily involved throughout. The strategic management will be undertaken by a group that will feature external partners from established industry and startups. They will too act as ambassadors for the program, aiding their networking contribution. Next, an advisory board exclusively made up of external partners will be formed, with the aim of bringing mentors, network and input to the ongoing progress with the program. Lastly, an international advisory board will be formed with members from collaborating universities around the world. Other partners, public institutions as well as private companies, are mentioned to be a part of various initiatives and the overall involvement of external partners is certainly planned to be very extensive. The SPININ initiative is also planned to continue.

4.3 THE OLD VERSUS THE NEW

It should be quite clear from the descriptions of the current and future incubators that a lot is about to change and it is thus very difficult to call what I experienced at the current incubator representative of future activities. Making concrete suggestions based purely on what is going on now would be meaningless, as the context for their implementation is gone in a few months at most. Accepting the plans for the AAU Startup Program as an accurate description of what will actually happen going forward is likewise foolish, as there is bound to be significant alterations given the minimal practical experience with incubators at AAU. It will in no doubt be a massive learning experience for everybody involved – students, faculty, rectorate, incubator management and external partners of all kinds – and I would like to take part in this. Therefore, the last chapter will focus on three specific areas in which I see space for improvement and refinement of current efforts and plans for the AAU Startup Program, as AAU Innovation transitions from the old to the new.

5. PUTTING IT ALL TOGETHER – SYNTHESIS AND SUGGESTIONS

We have now reviewed the literature, current efforts at AAU Inkubator and the ambitious plans of AAU Startup Program. All this information and data have revealed three areas, which – as I will argue – are fundamental to a well-functioning incubator with such lofty ambitions as AAU Startup Program. The three areas are goals and metrics, selection criteria and collaboration with external partners. Each will be analyzed, discussed and reflected upon in turn, with the objective of providing a synthesis of current scientific knowledge with suggestions for practical implementation.

5.1 ON GOALS AND METRICS

Any concentrated effort begins with a goal, explicit or not. And for an incubator making it explicit is not a choice, but a requirement for actually deciding on which initiatives should be created, what actions should be commended, how external partners could be involved and on what basis success – or failure – is ultimately measured. The reviewed literature presented earlier makes it clear that everything the incubator does stems from the goal and a common sense argument on its importance should not be difficult to agree on either.

In the previous chapter we saw how the goal of AAU Startup Program has been tied to the purpose of the main stakeholder, the university itself, while also addressing economic growth through entrepreneurial activity and the resulting creation of jobs. Thus, the goal is to some extent multifaceted. I would like to refine it a bit further in order to derive a more unified goal, which makes for an easier to communicate message and encourages more appropriate metrics to measure its success.

The connection to the purpose of the university is specifically regarding the core activity of knowledge collaboration. Reading the 2016-2021 strategy, this collaboration is intended “... to solve key challenges in society and to develop value-creating solutions to such challenges.” (Aalborg University, 2015, p. 23). The essence lies in the creation of value through collaboration, which – when coupled to the incubator – happens through entrepreneurial activity. That is, collaboration between startups, the university and external partners. Startups are what the incubator stands to influence the quantity and quality of. It is essentially a manufacturer of startups. If we accept the premise that it is quality, not quantity, which stands to impact the collaborative effort and the value created, then we can ultimately boil down the goal of the incubator, and by extension the AAU Startup Program, to be about the incubation of successful startups. I shall refer to this as the refined goal of the AAU Startup Program. Of course, “successful” is an incredibly loaded term, so it is fitting to further specify a successful startup as one that creates value at a both a micro and macro level. This is particularly in reference to the work of Davidsson (2016) and his discussion of productive versus unproductive entrepreneurship. Whether to state the goal as being incubation, cultivation or any other term with a similar meaning is less vital, but I will argue that staying away from “creation”, “formation” and the like is important to keep the locus of control with the entrepreneurs themselves, not the AAU Startup Program.

Refined
**The goal of the AAU
Startup Program is to
incubate successful
startups**

Simplifying the goal to this extent could be seen as disingenuous given the complex nature of incubators and their environment as discussed in the literature review. Having a complicated, multifaceted goal on which we are to build the foundation of the incubator, however, is only bound to create more problems than it solves, as we try to appease all sides of it. For a policy tool still so poorly understood as the incubator is, adding so many aspects to fulfill at once, only acts to give a false sense of control and influence – results of which no truly compelling proof have so far been presented. Simplifying the goal unifies efforts and allows us to remain open to what specific initiatives may help us accomplish it, deriving more complex milestones from the simple starting point as we sit fit.

At the surface, the goal of incubating successful startups may not appear to set the AAU Startup Program apart from a regular for-profit incubator. And it is really not intended to do so either. It will be the ways in which the successful startups are incubated, that will set it apart. And in time hopefully likewise the results of those unique efforts. One clear difference exists, however. By defining a successful startup as one that creates not only value at the micro level (the level of the startup itself), but also at the macro level, we further raise the requirements for the kind of endeavors supported. It may not immediately appear sensible to differentiate between the two – after all, how can a startup manage to accrue value if it does not create value at a macro level that it can then capture a part of? But as Davidsson (2016) argues, it is not unheard of. He calls this type of venture redistributive, in that it does not create new value through the more efficient use of resources, but rather creates wealth for the founders at the expense of others. Such ventures are not likely to encourage collaboration and would thus violate the premise established earlier. By differentiating between the two levels on which value creation can occur, we also create a better foundation on which social entrepreneurship can thrive, as these tend to emphasize value creation at a macro level and not the subsequent value capture at the micro level (Santos, 2012).

Just like it was done in the literature review, it is also here beneficial to ask why we want to incubate successful startups. The straightforward answer is to say it encourages knowledge collaboration, which is again a core activity of AAU. The creation of the AAU Startup Program is then based on the belief that such (partially) happens through the creation of successful startups, as just discussed above. And this again is intended to solve key challenges in society (per the AAU strategy), which we shall let stand as an obvious good thing that requires no further argumentation. We have thus come full circle.

The next issue is then to find a way to delineate the value-creating from the non-value-creating startups, which encompasses the more specific problem of finding accurate metrics to judge the success of the incubator on. If we look at the KPIs for the AAU Startup Program shared in the previous chapter, we see that some aligns well with the refined goal, while others fail to accurately be indicators of value-creation. It is reasonable to assume that value-creating startups will attract more mentors, corporate representatives, larger investments and a greater number of media coverage than startups that fail to create much value. On the other hand, the number of students taking entrepreneurship courses is bound to be strictly a question of policy and says nothing about the value created by startups. The latter is just as true about the last two KPIs, number of students accepted into the program and number of startups created. The same goes for counting the number of new CVR entries (to the extent it is different from number of startups created) or even startup survival rates, as discussed earlier in the literature review.

In light of the work by Shane (2009), Nightingale and Coad (2014) and others on productive versus unproductive entrepreneurship, it only seems reasonable to remain skeptical of the survival rate metric, company formation metric and other metrics like them. Just like a heartbeat fails to be a fulfilling indicator of human health, the mere survival of a startup says hardly anything about its value to neither its founders nor the wider environment around it. Survival is necessary, certainly, but to regard it as a metric for success is lazy at best. The same goes for the number of startups created. For an incubator, whose ultimate goal is value creation, these metrics are simply unacceptable. I too reject that notion by Phan et al. (2005) presented earlier, that survival rates are valuable when comparing incubators, not just incubated versus non-incubated ventures, for the same reasons.

Further weakening the survival rate metric is the previously discussed case of a quick failure being considered success. Davidsson (2016) mirrors this sentiment in his discussions on entrepreneurship, arguing that ventures that might fail at the micro level can eventually end up driving the market process.

“Although not successful on the microlevel—perhaps because they are outsmarted by followers or retaliating incumbents—they do “drive the market process” precisely because they bring forth such behavior on the part of other actors. An unsuccessful venture that inspires more profitable successors does not *complete* the entrepreneurial process, but it no doubt contributes to the entrepreneurship phenomenon.” (Davidsson, 2016, p. 13)(Author’s emphasis)

Of course measuring incubator impact at such a scale is nearly impossible, the factors at play are simply overwhelming to accurately get a grasp of. But it does not warrant that we instead resort to bogus metrics. Startup establishment is not a result – it is a necessary condition for later value creation. The same goes for survival.

Looking at the literature, finding insights there is further complicated by the often lacking delineation between the various types of new venture support (incubator, science park, technology center, etc.) in the various articles. Authors doing a study on incubators will happily reference the method and metrics employed by authors researching science parks with no apparent discussion of the applicability. This is for instance the case with Barbero et al. (2012) referencing Bigliardi et al. (2006). Also often absent is the time scale used and concerns regarding exit points for tenants. An incubator that only allows tenants to stay for a year will likely produce different results from those that let tenants stay for three or five years. Just as troublesome is the infamous “patents generated” metric as used by Barbero et al. (2012) and others. On top of all this we have the issue of appropriate metrics for evaluating incubators scientifically versus metrics that can be used by incubator management per the feedback loop mentioned in an earlier chapter. These may not be one and the same. To a large extent the above also deals with measuring the outcome of entrepreneurship in general – a field that in no doubt rivals the size of the one on incubators alone – and by extension the vast literature that studies economic growth. The complexity quickly rises to a point where it can be difficult to grasp it all.

So let us return to the incubator – in singular. What the management team really needs is one or more indicators of performance in order for them to judge the positive or negative effects of their initiatives and continually increase the degree to which the startups create value. The scientific literature has yet to find appropriate metrics, and this project does not have the scope to make any meaningful conclusion of what exactly should be measured. That takes experimentation in an actual incubator, with actual startups, working with actual external collaborators. But I will attempt, based on what has been presented, to point towards areas of interest and highlight issues that have to be dealt with.

Experimentation

The first point is exactly experimentation. No one has yet to find the metric(s) that best measures the output of an incubator (even regardless of the specific goal). And even if such existed, regional effects have been shown to play such a major role that applying them to an incubator in Northern Jutland could not just be done blindly. Hence, the management team must recognize the need to experiment and learn, exactly like the startups they incubate. I strongly advise the management team only to accept metrics that have been proven aligned with the overall goal of incubating successful startups and dismiss all others. The same Lean Startup philosophy they are set to preach to the startups, they should practice themselves. Focus on validated learning, reject vanity metrics and continuously experiment in order to learn. The whole process should naturally be meticulously documented, so as to institutionalize the knowledge and see new experiments use it to build upon.

Incentives

Picking a set of metrics also creates specific incentives for management. Earlier in the report, the issue of for-profit incubators whose main income stream is rent was discussed. Likewise, using company formation (CVR entries essentially) incentivizes behavior that is not necessarily

aligned with the goal of incubating successful startups. A strategy focused on incubating a large number of ill-functioning one-man-startups will be rewarded, whilst one incubating a handful of successful teams is punished. Oversimplified the example may be, it still gets the point across. Finding a metric that directly measures value created, both micro and macro level, is going to be tough, so resorting to less clear-cut metrics, at least initially, is somewhat to be expected. Being aware of the incentives they create is important.

Time

Speaking of micro and macro level value creation, it will likely be wise to find metrics that address each specifically. The value created may be more or less apparent at different time scales for each kind and manifest itself differently as time passes by too. Certain metrics may be appropriate right at venture formation, while others work later down the line. Others again may be valuable should the venture be dissolved.

Valuation

Typically, the value a startup generates, or is expected to generate, becomes quantified at the moment investment is sought. The documentation for the AAU Startup Program hints at this as well, with the plan for taking an equity stake in the startups participating in the Growth tier. As pointed to, however, not all startups that generate value at the macro scale necessarily stand to do so at the micro scale too, and thus going purely by valuation by an outside entity is not an option for all.

ROI

Of course, the value created by the startups must compare favorably with the value spent incubating them in the first place. With a 55 million DKK budget over five years, it should not be immensely difficult to have a number of startups create at least some value at both the micro and macro scale, but as a policy tool meant to increase knowledge collaboration, it will very likely have competition from other tools. Outright proving that surplus value has been created is perhaps not quite realistic in the short term given the other challenges, but the return-on-investment perspective is important to keep in mind as a sustainable business model is sought, even if such one relies on public funding as the revenue stream. Again, the right metrics can have a huge impact.

Research

Rigorously developing a set of well-proven metrics also aligns well with another core activity of the university: Research. Just as the incubator stands to encourage collaboration with outside partners to solve key challenges in society, it also represents a significant research opportunity. As shown, the field of incubators is ripe with open questions and opportunities to contribute with the advancement of our collective understanding of entrepreneurship.

5.2 ON SELECTION CRITERIA

Aligning the choice of selection criteria and selection procedure with the goal is unsurprisingly quite essential. If the two do not align, then we stand little chance of actually fulfilling that goal, even in the unlikely case of it being rather straightforward. Achieving value creation at the macro scale will be very difficult if teams and business ideas with only a focus on micro scale value creation is accepted into the program. If we are so fortunate as to have a set of metrics that aligns well with the goal, then the selection criteria should ideally see the same continuous refinement as all other activities at the incubator and thus over time achieve alignment with the goal as well. This again highlights the importance of meaningful metrics.

Given the lacking consensus on goals and metrics found in the scientific literature, it is no surprise that no conclusive evidence or argument exists for us to rely upon here either. The closest we get is the recommendation by Aerts et al. (2007) to employ a balanced set of criteria. The typical dichotomy appears to be between team focused and idea focused, as

exemplified by the framework of Bergek and Norrman (2008) with their idea-focused-selection versus entrepreneur-focused-selection setup.

Setting up a funnel of potential startups, like the AAU Startup Program proposes with the three-tier Discovery, Start and Growth system, is a sound plan. No one has yet proven a clear ability to pick the winners, so to speak, and providing a path for even the more far-out teams and business ideas to show themselves worthy of attention is a straightforward way of not suppressing alternative sources of innovation. Diversity is often said to be a driver of innovation, and having the barriers to entry too high runs the risk of narrowing the field from which talent is sourced. Like with the establishment of metrics to judge the success of the incubator, perhaps the most important realization to make is that no best practice exists for selection criteria and procedure. Thus, the incubator management team, and the various external partners they involve in the selection process, must accept the humility that comes with it. No one is likely qualified to call their judgement more than a best guess. Continuous experimentation and learning in this area is crucial.

With the theoretical foundation being tied to Customer Development (Blank, 2003), The Lean Startup (Ries, 2011), Design Thinking (Mueller & Thoring, 2012) and effectuation (Sarasvathy, 2001), just letting the idea take front stage would be paradoxical. The emphasis of these is on an agile development process that can pivot, to use Lean Startup vernacular, in order to reach a validated product-market fit. That is, a successful venture is bound to begin with a vastly different business idea than what it ends up actually generating value with. Selecting on the basis of the idea and then expecting the teams to make progress by pivoting is nonsensical and creates unnecessary pressure to stick to a path that may be a dead-end.

The ability to pivot and find the validated product-market fit is much more valuable and that ability resides with the team and the individuals that make it up. We thus get into the area of psychology – not exactly a fact that indicates coming up with useable criteria gets any easier. Further complicating the matter is the expected personal development of the individuals accepted into the program. Assuming we can reliably spot the ability to make pivots and find a product-market fit, expecting it to be evident from the start is likely too high of a barrier to entry for a reasonable acceptance rate and conflicts with the desire for personal development.

So we can select neither based on the idea nor the team and expect to find any correlation with the value created later. Instead let applicants be judged on what they are expected to do at the incubator – create value. Ideas are worthless and good intentions do not necessarily lead to good actions, so instead of trying to predict the future, have the applicants demonstrate initiative and let action be the deciding factor. The funnel of Discover-Start-Growth does exactly this, but the gatekeepers between each tier much naturally learn to focus on the progress made and what the startup has learned in relation to their starting point. Here, progress becomes the measure of success. This puts emphasis on more intimate knowledge of each individual startup and makes the input from external partners less critical. It does not matter how good an idea seems, how energetic and charismatic a team is or how well-executed and slick a pitch appears – without action it will never lead to actual value creation. Ries (2011) perhaps puts it best with his notion of learning being the essential unit of progress in a startup. Action leads to learning, learning leads to knowledge. And knowledge will represent value generated at the micro level. As this knowledge accumulates through continuous, validated learning, we should hopefully begin seeing its impact as value creation on a macro level. A product-market fit has been found and customers and users are finally being served. The argument regarding experimentation and learning with regards to the panel in charge of the approval process still stands, however. Focusing on progress as the unit of success is my educated guess, and what exactly constitutes progress is still ill-defined. With a limited number of spots to fill in each tier, it is also bound to become an issue of relative progress (or any other parameter for that matter). The applicants are not necessarily being compared to a global standard, but rather each other as they compete for the same spots.

This last point also highlights a potential issue. What if there are more spots open than deserving applicants? Will it be acceptable to let those remain vacant, or should the standard be lowered in response? I speculate the latter would happen in that case. And I would agree. Working with something is better than working with nothing, and with the maturity of the incubator in mind, management needs all the training it can get.

5.3 ON COLLABORATION WITH EXTERNAL PARTNERS

Aside from the SPININ initiative, details on how exactly collaboration between startups and external partners is to happen are largely absent. Although there will certainly be plenty of networking opportunities with the extensive outside involvement in strategic decisions, partners who are not chosen or are not interested in participating in such specific tasks risk being left out of otherwise valuable relationships. Keeping the SPININ initiative running, where a specific person of the management team is responsible for finding leads, is a commendable decision. Continuous experimentation and learning is naturally just as important here as in the other areas.

The core premise introduced in the discussion of goals is that successful startups are the main catalyst of successful collaborative efforts with external partners. Startups that create value at the micro and macro scale will certainly be able to get the attention of potential partners, as they see a way for them to aid their own value creation process. But if the startup begins to create this value in the first place exactly as a result of collaboration with external partners, we arrive at a sort of chicken-or-the-egg-problem. Just like there is an adoption curve for consumer products, there is bound to be an analogue for involvement of partners in an incubator. Some will be earlyvangelists, as Blank (2003) calls them, ready to jump in immediately, while others will require a better established reputation of the incubator, before given the idea a second thought.

And this reputation, or an outright brand as Aaboen (2009) refers to it as, appears to be immensely important in order to get the attention and legitimacy that effective collaboration requires. Aaboen emphasizes branding as a key tool for incubators in generating interest from all possible stakeholders, further helping the housed startups create value, that again feeds back into brand-building. Whether this may result in hiring a marketing professional or it can be accomplished through less intensive (and expensive) means is left to be seen. Prioritizing this function is however absolutely necessary for the successful incubator.

But of course the brand is only the first step of getting the attention and legitimacy. Without actual value created for the external partners, the collaborative efforts will hardly be sustainable or lead to value creation at the macro scale. Leveraging goodwill and altruism to get the incubator going is not unwise, but making collaboration mean something for the bottom line of the partners is likely needed to keep the process going. SPININ has to some extent demonstrated this, with the model of mutual value creation at both the startup and the external partner, having proven itself.

While the scientific literature had a hard time reaching consensus with regards to incubators, the impact collaboration between corporations and startups can have is rather well established through a whole heap of theoretical constructs with empirical backing of which only a small fraction was covered. Utilizing this in the initial branding strategy could likely be valuable, so as to bring some outside credence to the idea of partnerships between big and small actors alike. The empirical data and many practical efforts going on in the world at large, but also here in Denmark, is strong evidence to show corporations stand to benefit greatly from working with startups. Benefits that will be evident at the bottom line, not just in the yearly report on community outreach or Corporate Social Responsibility. This is an important message to communicate to the external partners.

As time goes by and legitimacy is gained, introducing a model like that of Connect Denmark, with its paid membership, could be a viable option to further enhance the brand and exclusivity, essentially expanding the range of “products” offered to external partners. Directly working with Connect Denmark may also very well be an option.

6. REFLECTIONS ON THE PROCESS

It is now time for the all-important reflections on the process. The project morphed quite a bit as it went along, initially with a focus on business models and collaboration between startups and established companies without regard to any incubator being part of the process, to almost exclusively being about said incubator. This change was mostly a result of my shifting interest, which came about as I got closer to the organization. Working with what I immediately had access to looked to be the smarter choice and with the incubator being so young, it represented a great opportunity to actually contribute and create value with the project.

Regardless of the changing focus, the comprehensive literature review proved to be very helpful, but not exactly for the reason first believed. My assumption going in was that this field naturally had to be extremely mature and that a best practice had to be found somewhere. I could then take it, modify it according to a well-developed theory of the impact of regional settings and make a clear cut list of suggestions and possibly an action plan for AAU Inkubator. As the report has hopefully made exceedingly clear, this turned out not to be the case in the slightest. While there certainly is a body of literature, it is very fragmented with little consensus on key issues to speak of. This naturally threw that plan out of the window. But I believe it was ultimately for the better. Having no consensus to fall back on actually made the field more interesting, as it now represented a chance to develop something completely new or at least point in the direction, where the ideal incubator could exist.

Going in, I had expected the incubator at AAU to be more developed and structured than it turned out to be. Even with it having been established so recently, the ad-hoc nature of it all surprised me. I saw some resemblance of a structure at the surface and assumed it was indicative of the whole, but it was clearly not. This also meant that there was much less information to be gained through the case study, as those involved simply had not had the time to acquire the expertise and experience of working in an incubator setting. Most of the information gained from interviewing the startups was ultimately rather trivial and very much focused on their unique situation. Much more data from these interviews were collected than what turned out to be relevant for the project and thus included here in the report. None of the interviewees had much of a perspective on the incubator as an entity, let alone as a policy tool, and were completely caught up in the day to day work at their respective startups. With the funding announced in December, the incubator was likewise in a transition state, making it even more difficult to get a grasp of the as-is situation and making the relevance of any findings be questionable to say the least. These issues combined meant the case study lost some of its legitimacy, and calling it a case study is perhaps a bit too generous, the limited content considered. Having additional outside perspectives from higher management levels at the university, or people with experience running a private incubator could possibly have added valuable insights, but these plans did not come to fruition. As it stands, the insights were derived from the literature reviewed and thus represent a somewhat one-sided perspective.

What regional factors may stand to impact the incubator going forward was not explored despite the importance implied by the literature reviewed. The information and the resulting insights just never developed to a point where it was a priority. Given that the incubator is so early in its development, trying to makes assertions regarding what factors here in Northern Jutland that may or may not impact its performance appears a bit foolish. Just like I argued with regards to the goal and making that overly specific, so will I argue that trying to incorporate regional effects into the structure and initiatives and expect it to actually amount to a positive impact on the results, is absurd when that structure is still largely missing and you have absolutely no idea of what may make an appropriate measure of success.

This project has provided more questions than answers, and that does frustrate me somewhat. While, as said, it is great to have a clean slate to develop something new, not being able to actually see it come to fruition is somewhat unsatisfying nonetheless. With the scale being worked on, it is not too surprising, though. The AAU Startup Program has five years to fully implement and achieve its planned form of success. So, as to what value this project has created, there is yet to be a conclusion. This report is the product, the value, and as such is yet to receive valuation by the customer, SEA. But I do believe it adds valuable perspectives that I have not encountered at the current incubator, heard voiced in interviews or seen in the plan for the AAU Startup Program. It takes its starting point in the scientific literature, a source of insight currently underutilized by the management team, and applies it to the startup that the incubator at AAU will be for the foreseeable time.

7. CONCLUSION

This project set out to explore the field of incubators – property based initiatives designed to support new venture creation – and has through theoretical and practical considerations arrived at a set of suggestions for what the future incubator at AAU should pay attention to.

The theoretical perspective came in the form of an extensive literature review addressing the field of incubators, along with a smaller look into the literature relevant for startup-corporation collaboration. Having originated in the 1950s, the incubator is not a particular new phenomenon, yet it was nonetheless shown that little consensus on many key features of it has so far been reached. A number of main types exist, with the overall goal of economic growth through improved startup success rates being rather common, although often implicitly stated. Impact has been measured in survival rates, job creation and patents to name a few metrics, but no conclusive evidence as to the efficiency of incubators has so far been presented. Measuring survival rates has been criticized for representing an endogeneity problem and an argument is later made for why it is – regardless of statistical considerations – an inappropriate metric. The selection criteria by which startups are chosen for incubation can broadly be divided into idea-focused or entrepreneur-focused. Early research suggests that a balanced approach is most beneficial. In general, a significant amount of valuable information was uncovered, despite the lacking “best practice” the review had initially been thought possible of producing. To address collaboration between startups and corporations, relevant literature on innovation in established businesses was covered. In particular, open innovation, absorptive capacity and disruption was discussed, with a quite clear indication of the value proposition startups stand to offer corporations in a collaborative effort.

The practical considerations came about through a case study conducted at newly created AAU Inkubator, the early effort to gain experience with the incubator concept at AAU. Three out of four people then in the management team and representatives of five startups were interviewed, revealing a still developing structure, where much of the strategy and many of the day-to-day procedures were being formulated in an ad-hoc fashion. Selection criteria ranged from vague to nonexistent, with no exit policy in place either. The approach to entrepreneurship was found primarily influenced by the work of Blank (2003) and Ries (2011), with Customer Development and Lean Startup respectively. This indicates effectual logic. The recent creation of the incubator, coupled with little experience with incubators held by the management, ultimately meant that few insights were gained from the case study. Direct applicability to the setting was also compromised by the major changes planned for 2017, for which funding was finalized in December 2016. The AAU Startup Program, featuring a tenfold budget increase compared to earlier, is set to replace the current AAU Inkubator and the plan for this program were then analyzed and discussed.

Finally, the scientific literature is brought together with the practical considerations to offer insights on three distinct areas of incubator creation and management. First, the fundamental impact of the overall incubator goal is discussed, with the current one of the AAU Startup Program being refined to focus clearly on successful startups. As a part of this, a discussion of the issues found with current metrics is presented, with the recommendation that new ones must be developed. Next, selection criteria is covered, with the clear argument that neither the idea nor the entrepreneur matters most. Instead, the selection committee should focus on action and progress through learning in order to pick the most promising candidates. The current plan for a funnel-like setup in the AAU Startup Program is commended for this reason. Lastly, collaboration between startups and corporations is covered. Branding is emphasized as an important ingredient in attracting partners, so as to clearly advertise the many proven benefits corporations stand to gain by collaborating with successful startups. The current SPININ initiative is argued to fit within this and thus the plan to let it continue under the AAU Startup Program is well founded.

This project offers value to the management at SEA in two areas. Firstly, through the comprehensive literature review giving a state-of-the-art-view on the field of incubators and further an overview of the evidence for the value of collaboration between startups and corporations. Secondly, through a list of suggestions in relation to the covered literature on the basis of the current plans for the AAU Startup Program, highlighting key issues critical to creating successful startups.

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