

Obstacles to Establishing Venture Creation Based Entrepreneurship Education Programs

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Abstract

While many scholars argue for the value of action-based entrepreneurship education programs compared to traditional theory and lecture based teaching (Mwasalwiba, 2010), seemingly few such programs exist. We hypothesized that this could be explained by the existence of obstacles to establishing action-based entrepreneurship education programs, and that these obstacles may be categorized into three main areas – financial obstacles (Mwasalwiba, 2010), educational paradigm obstacles (Tautila, 2010, Hager, 2005, Kyrö, 2005) and incentive obstacles (Wright et al., 2009). The purpose of the paper is to explore a segment of action-based entrepreneurship educations identified as venture creation programs (VCPs), where real-ventures are created within the educational framework, and empirically investigate obstacles experienced by the facilitators of these programs. Thus, the research question is: What obstacles are experienced when establishing (facilitating) a VCP at a Higher Education Institution?

This paper is part of a larger research study investigating VCPs. We build from an initial investigation of six VCPs from Europe (Gothenburg, Louvain, Lund and Tromsö) and North America (Eugene and Boston), identified through literature and other written documentation, internet resources, peer reference and snowball sampling. Semi-structured interviews were conducted with program directors in order to explore obstacles experienced in establishing the particular VCP.

Among the investigated six VCPs the main hypothesis regarding obstacles in establishing these programs, was not supported – few serious obstacles were identified among the studied VCPs. The main conclusion of this article thus has to be that a rare occurrence of VCPs requires other explanations.

Keywords: venture creation, entrepreneurship education, establishment, challenges

1. Introduction

Many scholars argue for the value of action-based entrepreneurship education programs compared to traditional theory and lecture based teaching (Mwasalwiba, 2010) when preparing students for entrepreneurship. Honig (2004) proposes an experiential learning based model for educating within entrepreneurship, stating that programs that provide real-world experience have proven to be successful in enhancing entrepreneurial intentions. Rasmussen and Sørheim (2006) illustrate that action-based entrepreneurship education adds understanding about business opportunity and context, and can contribute to increasing individuals acting entrepreneurially, both as entrepreneurs, and as complementing team-members. Neck and Greene (2011) argue for the need for a new entrepreneurship education approach based on action and practice, illustrating this with a quote from Plaschka and Welsh (1990, p. 66):

“As the criticisms of business education show, current analytical-functional quantitative, tools oriented, theoretical, left-side of the brain, overspecialized, compartmentalized, approaches are not adequate to begin solving ill-defined, unstructured, ambiguous, complex multidisciplinary, holistic, real world problems”.

Given the increasing consensus among scholars on the virtue of action-based entrepreneurship education and the multitude of available theoretical frameworks for this approach (Revans, 1971, Kolb, 1984, Schön, 1983, Dewey, 1916), it is quite surprising to find that so few courses and programs actually have adopted these principles and theories in practice. Neck and Greene (2011) state that it is only in theory, not in practice, that there is agreement that entrepreneurship should be taught differently from traditional management courses. Mwasalwiba (2010) posits that this can be explained by the higher cost and the difficulty to align action-based approaches to the conventional university system of teaching and awarding. Gibb (2005) argues that the culture of business schools, in which entrepreneurship is predominantly taught, is strongly influenced by the corporate model valuing order, control, planning and compartmentalizing of knowledge. This contrasts with the tacit experiential knowledge gained through learning by doing (Cope and Watts, 2000), seen as a foundation of entrepreneurship education which is action-based (Rasmussen and Sørheim, 2006).

We hypothesize that this can be explained by the existence of obstacles to establishing action-based entrepreneurship education programs, and that these obstacles may be categorized into three main areas – financial obstacles (Mwasalwiba, 2010), educational paradigm obstacles (Hager, 2005; Kyrö, 2005; Taatila, 2010) and incentive obstacles (Wright et al., 2009, Barr et al., 2009, Burg et al., 2008, Ollila and Williams Middleton, 2011).

The purpose of the paper is therefore to explore this issue by studying a segment of action-based entrepreneurship education programs identified as venture creation programs and empirically investigate obstacles experienced by the facilitators of these programs. This type of action-based entrepreneurship program, where real-life ventures are created within the educational framework, seems to be very rare according to empirical investigation conducted by the authors of this paper. After almost a year of snowballing and other forms of search conducted by our research team only 15 programs have been identified globally, a figure that can be contrasted by the 1600 colleges and universities that were offering courses related to entrepreneurship only in USA in the year of 2005 (Kuratko, 2005). And this is despite its seemingly strong positive effects on

student engagement, new venture creation and university-based commercialization structures (Siegel, 2009, Berggren, 2011). Thus, the research question is: What obstacles are experienced when establishing (facilitating) a venture creation program at a Higher Education Institution (particularly financial, educational and incentive related)?

2. Theory on venture creation programs (VCPs)

The theoretical definition of a venture creation program (VCP) used by the research team in this study is derived from the tripartite classification of mental activities often used within psychology (Hilgard, 1980), where the study of mind is divided into three constructs – cognition, affection and conation – i.e. knowledge, feelings and actions respectively. Using two of these three constructs, a VCP is defined as a program where both affective and conative learning dimensions are perceived as very high due to the students engaging in real-life venture creation during the educational program. Note that this does not exclude other types of programs possibly fulfilling this same definition.

The use of these constructs within the domain of entrepreneurship education has been pioneered primarily by Kyrö (2008), Gibb (2005) and Krueger (2005). Kyrö (2008) states that action pedagogies, in the form of affection and conation, are fundamental to learning and thus should be at the core of entrepreneurship education, in contrast to the cognitive learning paradigm prevalent at most universities. The use of these constructs in relation to VCPs has been further elaborated upon Lackéus and Williams-Middleton (2011), originating from the same empirical project.

The conative construct – action orientation – has been thoroughly covered in literature, represented by educational approaches such as “learning by doing” (Dewey, 1916), action learning (Revans, 1971), reflective practice (Schön, 1983), and experiential learning (Kolb, 1984). The affective construct – feelings and emotions – has been significantly less explored in connection to education. Although the adjacent theme of entrepreneurial learning has been discussed in-depth by Cope and Watts (Cope, 2005, Cope and Watts, 2000), stating that the emotional intensity of an experience is believed to increase the resultant depth of reflection and learning, many scholarly disciplines still seem to systematically omit and devalue emotions (Boler, 1999).

There are a handful of single case studies on programs that we have proposed as VCPs (Thursby et al., 2009, Haines, 1988, Laukkanen, 2000, Janssen et al., 2007, Barr et al., 2009, Berggren, 2011, Meyer et al., 2011, Ollila and Williams Middleton, 2011), as well as two multiple case study comparing a proposed VCP to other action-based programs (Rasmussen and Sørheim, 2006, Lindholm Dahlstrand and Berggren, 2010). However in general, descriptions and references to these types of programs seem to be limited, with extremely few contributions before the turn of the millennium. Common themes in the above mentioned literature are action-based learning, the venture creation process, university commercialization, importance of an external network of resources, and regional development aspects.

Our own initial investigations (Lackéus and Williams-Middleton, 2011) have illustrated four main observations of VCPs studied so far:

- There are two typologies of ventures created: ventures based on student ideas or venture based on external ideas
- The importance of interdisciplinarity in program design
- A focus on the process rather than the ‘conventional functional paradigms’ (Gibb, 2005)
- Ownership plays both a legal and an emotional role in the venture created

In addition, the programs studied thus far seem to indicate the importance of association to entrepreneurial ecosystems that facilitate boundary spanning activities, not only across universities’ schools, such as business, engineering and medical, but engagement of local networks, including regional and alumni networks. We speculate that these characteristics of a VCP might negatively influence the likelihood of their existence, such that there are various obstacles to incorporating these characteristics into a program, making them less common than more conventionally-based programs. Building upon previous literature identifying financial, educational and incentive based categories of obstacles to institutionalization of such programs, we continue by exploring possible obstacles previously described in literature around action-based education generally and VCPs more specifically.

Obstacles to establishing a VCP in theory and literature

After investigating five different cases of programs putting special emphasis on the learning-by-doing approach, Rasmussen and Sørheim (2006) found it necessary for universities to employ substantial amounts of resources when establishing such a program compared to most other types programs. It also seemed necessary to include a broader range of activities than in traditional classroom settings. These findings are in line with observations from the recent literature study by Mwasalwiba (2010), stating that the cost of action-based teaching methods is a major hurdle. Therefore we hypothesize that financial requirements could be an obstacle when trying to establish a VCP.

Many scholars point out that action-based entrepreneurship education is experiencing frequent difficulties in aligning to the most common university values and educational philosophies (Taatala, 2010, Hager, 2005, Kyrö, 2005, Gibb, 2005). Kyrö (2008) states that action-focused approaches are outright contradictory to many educational paradigms, such as behaviourism and the cognitive paradigm. Taatala (2010) states that the most suitable educational philosophy for entrepreneurship education is likely to be pragmatism. According to Ardalán (2008), universities have indeed been shown to act according to their underlying philosophies of education when specifying course goals, learning outcomes and content. Based on this, we hypothesize that many of the obstacles encountered when trying to establish a VCP are related to a university’s dominant educational paradigm.

The third area of potential obstacles concerns incentives for starting and running VCPs, or rather lack of incentives. Education being subordinated a disciplinary research tradition (Boyer, 1990) is one explanation to why faculty do not engage into interdisciplinary entrepreneurship education (Bécharde and Grégoire, 2005). Lack of understanding about what entrepreneurs actually do and what is taught in the classroom could make it difficult for faculty knowing what new content to adopt (Edelman et al., 2008). Another incentive-related obstacle regards the integration of educational activities on one hand and university engaging in commercialization and venture creation on the other hand (Ollila and Williams Middleton, 2011, Siegel et al., 2005, Boni and

Emerson, 2005, Nelson and Byers, 2005). Apart from these university actors normally being situated from each other organizationally and geographically, there are also a range of more or less practical challenges identifiable to students actually engaging into venture creation such as screening ideas, forming and supporting venture teams, networking and attracting resources and competencies, regulate ownership, conflict of interest issues, etc. (Barr et al., 2009, Burg et al., 2008). Based on these, we hypothesize that many of the obstacles encountered when trying to establish a VCP can be related to lack of incentives for university employees in regards to venture creation.

The above identified potential obstacles captured into three hypotheses could arguably explain the lack of VCPs. However, there has to our knowledge been no systematic attempt to empirically explore these hypotheses. We will now continue by describing how we empirically investigated the establishment obstacles of six different VCPs in Europe and North America, using a process based thematic framework.

3. Method

A qualitative and explorative multiple-case-study approach has been chosen due to the perceived lack of systematic exploration into this area of research, in line with methodological recommendations by Edmondson et al (2007). Research is conducted by a research team, including an additional member in addition to the two authors of the paper. All members of the research team possess a decade or more of previous experience in championing entrepreneurial value creation both in academic and business contexts characterized by high levels of cognitive and affective aspects. As a first step and in line with the recommendations from Flick (2009), intuition has been used to form a sensitizing concept of what is to be studied, described as:

“Entrepreneurship or business educations at a higher education level with the on-going creation of a real-life venture as their primary learning vessel and thus part of formal curriculum, with intention to incorporate or in some other way indicate future operative status”

This program type has for communication purposes initially been labeled “Venture Creation Programs”.

Initial thematic framework

In order to cope with the large amounts of empirical data that a qualitative approach can result in, the authors developed an initial theoretical framework consisting of ten main themes. These ‘themes’ were developed, from literature, to start and argued as relevant to ‘venture creation’ entrepreneurship education, searching for common processes and themes. It is expected as the research evolves that these ten themes will be revised as theoretical concepts emerge. To illustrate that qualitative research tends to view social life as processes (Bryman and Bell, 2007), the themes are labeled and viewed as “processes”. The framework has been used when designing the semi-structured interview template, as well as when comparing the programs studied. It consists of the following ten themes:

Table 1. Initial Theoretical Framework

Process Theme	Description of activities / components
Marketing to and selection of students	Reaching and screening of prospective students, subsequent admission of students (Burg et al., 2008)
Establishing start-up teams in a creative environment	Composing of student teams with complementary skills and backgrounds, equipping them with office / phone, ensuring creative environment (Burg et al., 2008)
Establishing fair and motivating rules	Establishing rules regarding distribution of revenues (equity), establishing sense of real-life, ensuring correct level of expectations, creating motivational and emotional urgency learning setting (Burg et al., 2008, Cope and Watts, 2000)
Securing collaborative network	Establishing internal and external support for the start-up teams such as business coaches, financiers, advisors, alumni, external entrepreneurs, etc (Burg et al., 2008)
Linking to external outreach activities	Multitude of activities such as but not limited to student consulting, conferences, external collaboration projects, newsletters, presentations, competitions (Burg et al., 2008, Mwasalwiba, 2010, Vesper and Gartner, 1997, Hynes and Richardson, 2007)
Maintaining good academic entrepreneurship environment	Ensuring high commitment staff, good research base, businesslike methods, quality improving culture, appropriate staff awarding systems, presence of role models, top management support (Burg et al., 2008, Gibb, 2005)
Supplying relevant theory content with the right mix	Selecting, developing and delivering educational content of high relevance regarding subjects and focus, delivered by faculty with relevant competence and experience (Mwasalwiba, 2010)
Delivering a well balanced mix of pedagogical methods used	Selecting, developing and delivering relevant and working pedagogical methods, with emphasis on action / active based methods, used by faculty in a well functioning manner (Mwasalwiba, 2010)
Influencing students' attitudes and intentions towards entrepreneurship	Various explicit and implicit personal development activities (Gibb, 1998)
Actual business start-up process (Core process)	The real-life venture creating steps of idea acquisition, idea validation, scale and resource identification, business planning, negotiation, company birth, survival (Barr et al., 2009, Gibb, 2002)

Data Collection and Analysis

In order to identify programs relevant to a terminology not standardized or utilized in practice – ‘venture creation programs’, an initial investigation was conducted of potential programs from the regions of Europe and North America using previously available research, internet resources and snowball sampling. Programs initially identified as having ‘venture creation as the learning vessel of the educational program’ were further assessed through initial email or telephone contact, resulting in a refined group of programs. Of these, individuals at six programs were interviewed utilizing the designed interview template building upon the framework presented in Table 1. Prior to conducting the interviews with the six programs, a pilot interview was held with an inside actor at the Gothenburg-based programs, from which adjustments were made. The six programs chosen for inclusion in this study are:

- Entrepreneurs in Training (EIT) program at Babson College, MA, USA
- Technology Entrepreneurship Program (TEP) at University of Oregon, OR, USA
- Chalmers School of Entrepreneurship / Göteborg International Bioscience Business School (CSE/GIBBS) at Chalmers University of Technology / University of Gothenburg
- Formation Interdisciplinaire en création d'entreprise (CPME) at Université de Louvain, Belgium
- Masters program in Entrepreneurship at Lund University, Sweden
- Business Creation and Entrepreneurship at University of Tromsø, Norway

The three members of the research team conducted interviews independently. Interviews were recorded and then transcribed, and complemented by notes taken during the interviews. Data collected through interviews was also supplemented by available documentation and/or public data found online. Follow-up interviews were conducted (or will be) as necessary to clarify or complement responses.

The six interviewed programs were then compared in order to identify and explore common characteristics, methods and practice. Data from the interviews was compiled into a matrix, again building upon the theoretical framework of Table 1, but separated into categories of basic information, components and establishments/challenges. The compiled data was then discussed by all three interviewers in order to both provide clarification of findings drawn from the interviews and identify potential patterns across the initial six programs. An additional nine programs have been identified with interviews planned with some of these programs within the next months.

The basic characteristics of the selected venture creation programs are indicated in Table 2. All the programs are, thus far, masters level programs or higher – either one or two years in length – with the number of students per year ranging from 20 to 40, with the average being approximately 30 students per year. Four of the six programs were started around the turn of the millennium, with the two oldest programs starting in 1997. All of the programs exist at universities/colleges with multiple faculties, with four of the six integrating business students with students with other backgrounds. All but one of the programs collaborate, to a greater or lesser extent, with an organization involved with technology transfer at the university/college. Furthermore, every program has successfully facilitated creation of new companies.

During the course of the interviews, we discovered publications around two of the cases. Janssen and Bacq (2010) focus explicitly on the obstacles experienced when establishing their VCP in Louvain, Belgium. Meyer et al (2011) describe their VCP at University of Oregon in a recent article, where they emphasize the importance of managing the tension between a university's academic and commercial missions. We have allowed the publications to add richness to our empirical understanding of these cases and will discuss their interpretations regarding experienced obstacles in the concluding part of this paper. It is important to note that these initial interviews, albeit in two cases complemented by identified publications, still only allow us to be exploratory. Interpretations of case findings in subsequent sections might thus suffer from multiple forms of bias including lack of deeper understanding and insights into specific contexts.

Table 2. Overview of selected cases.

Location	Babson, Boston Ma.	Eugene, Oregon	Gothenburg, Sweden	Louvain, Belgium	Lund, Sweden	Tromsø, Norway
University	Babson College	University of Oregon	Chalmers and Univ. of Gothenburg	Université de Louvain	Lund University	University of Tromsø
Program name	Entrepreneurs in Training (EIT)	Technology Entrepreneurship Program (TEP)	Chalmers School of Entrepreneurship / Göteborg International Bioscience Business School (CSE/GIBBS)	Formation Interdisciplinaire en création d'entreprise (CPME)	Masters program in Entrepreneurship	Business Creation and Entrepreneurship
Students per year	25	20	35	35	40	20
Alumni so far	200	400	300	350	90	25
Length	1 year	1 year	2 years	2 years	1 year	2 years
Program start	2000	2001	1997	1997	2006	2008
University size	3.300 students	24.000 students	60.000 students	21.000 students	47.000 students	9.000 students
University TTO a key partner?	No. Babson has no TTO.	Yes, Pacific NW Laboratory	Yes, Encubator	Yes, LLN Science Park	Yes, LU Innovation and Ideon	Yes, TTO Nord
Dedicated student office facilities?	Yes	No	Yes	Yes	Yes	No
Venture team size	1	4	3	3	1-3	3
Interdisciplinary teams?	No	Yes	Yes	Yes	Yes	Yes
Faculty form teams	No	Yes	Yes	No	No	Yes
Idea source	Student	Student or TTO	TTO	Student or TTO	Student or TTO	TTO
Seed funding offered	None	None	10.000 €per project	Minor funds	2-3.000 €from LU Innovation	Minor funds
Establishment process	Core faculty team having support from university president. No external funding or network required.	Three directors of entrepreneurship and innovation related centers agreed on starting up a program for evaluation of market potential for technologies.	Core faculty team having support from university president. High dependence on external grants and seed-funding since start.	University president in the founding team with an influential entrepreneur and alumni. I.e. top-down from start.	Professor recruited by university president formed core team first delivering electives and after 7 years starting the program.	Core faculty team having support from university president and from regional authorities.
Examples of ventures started through school	Seahorse Scientific, FossaMedical	Perpetua Powersource Technologies, Floragenex	Vehco, Avinode, Oxeon, Minesto, Denator, Lumina Adhesives	Greenwatt, Creacomer, Mnemotique, Clickyourcar	Nocturnal Vision, Shojen Eco Media	Globesar

4. Findings

Summaries of findings from the initial interviews are presented in Table 3 – Establishment characteristics of select venture creation programs. The different programs are related to the three hypothesized types of obstacles, by using the initial theoretical framework of process themes such as involving faculty, establishing educational content and the venture creation process. The interviews of program directors have then been interpreted in three basic ways: the obstacle being problematic, unproblematic or partly problematic. By partly problematic we mean that the obstacle has been a concern but not a major issue potentially threatening the overall ambitions of the program. Thereafter a short qualitative motivation follows based upon our subjective interpretation of each interview.

The main empirical finding is that no individual obstacle type (financial, paradigm or incentive) has been perceived as problematic for all of the programs. More specifically none of the three obstacle types were perceived as problematic by more than two of the programs. The paradigm based obstacles were perceived as partly problematic by four programs, whereas the two remaining regarded it as relatively unproblematic. The incentive based obstacles showed particularly differing views on level and magnitude, ranging from unproblematic for three programs to problematic for two programs, with one program categorized as partly problematic. On a more detailed account, involving faculty was problematic for two of the six programs and venture rule-setting was problematic for one of the programs.

The three programs that perceived incentive structures as unproblematic all had strong support from top management of their respective institution. The three other programs seem to have support only at their local level of operation, and were either bottom-up initiative or middle management initiated. This indicates that there could be a correlation between top level public support for a VCP initiative and the perceived level of obstacles related to incentives.

For the younger programs in Lund and Tromsö, it may be too early to draw conclusions around some obstacles impacting program establishment. However, we observe that there may be late-mover advantages in the establishment of these programs indicated by them having indicated fewer obstacles as “problematic” compared to the older programs. The exception from this “early-mover disadvantage” observation is Babson, having experienced obstacles as essentially unproblematic. Babson being an educational college dedicated to entrepreneurship education thus seems to have offered a benevolent environment for a specialized VCP track within the much larger MBA program. However, this may also be related to the program focusing only on student-based venture creation, which minimizes the process obstacles outlined by Barr et al (2009). Furthermore, obstacles that other programs have around involving faculty, connecting to technology transfer support, etc., have been possible to avoid at Babson in part due to their college (and not university) status, and yet they impress by having considerable amount of high-performing ventures stemming from the program.

All of the programs except Babson’s are situated in large multi-school, multi-faculty university environments. All these programs unlike Babson being an internal track, also recruit students externally and internally and from different disciplines. Such diversity and interdisciplinarity have been emphasized as a quality of these programs and in one case – Louvain – even been

argued as more important than achieving new ventures from the programs. Thus, there is a difference in ambitions of the programs as regards emphasizing competence development and/or different types of venture creation results, such as diversity of ventures (i.e. not just high-tech but also services and low-tech) or long term venture sales growth. However, all programs except Louvain and Eugene, state that they do see long term venture creation results as important to measure and accomplish. Louvain, apparently being the most interdisciplinary setting student-wise, does not any longer strive for long venture creation success of student ventures and instead emphasize competence development, indicating a potential trade-off between diversity and venture creation.

To sum up, findings among the selected cases do not support the main hypotheses that VCPs are rare due to challenging obstacles. At a closer look, only one program – Gothenburg – had challenges with financing (one of the hypothesized obstacles). As regards educational paradigm obstacles, these were not either identified from the interview – basically the respondents had had the autonomy to develop a pragmatic action-oriented pedagogy. As regards incentives – the last of the hypothesized obstacles – the findings are more difficult to interpret and consequently this will therefore be discussed more in detail in the next section.

	Financial obstacles <i>resource magnitude and variety needed for a VCP creating problems.</i>	Paradigm based obstacles <i>traditional analytical / theory focused university values causing problems related to goals, outcomes and content of a VCP.</i>	Incentive obstacles <i>research traditions, lack of understanding and commercial aspects leading to faculty, staff and / or students not deeming it worthwhile to participate.</i>
Babson, Boston Ma.	Partly problematic. Class size is small compared to all other courses provided, thus increasing the cost of faculty involvement.	Unproblematic. Deans prioritize the program despite small class size. Content in alignment with Babson venture creation approach. A two-year rule of experimentation with curricula made the set-up process smooth.	Unproblematic. Faculty prioritize the program despite small class size. Students run their projects while faculty focuses on courses. Students are very committed and receive strong support from faculty and alumni. Students own their own ventures fully, and some do their own negotiations with TTOs and other IP actors.
Eugene, Oregon	Partly problematic. Inexpensive in the beginning. But as the program is growing the financial needs have grown. Federal grants have been used, but is ending. In the future they will rely heavily on donors.	Partly problematic. Reasonable freedom to operate but tenured faculty is not engaged. Importance of establishing champions in each department across the university was emphasized, something that was much easier at this university than at others.	Problematic. Program run by adjunct faculty feeling a distance to tenured faculty. Adjunct faculty is used for venture and business issues. Most students choose other careers than ventures after graduation. Perceived lack of seed financing incentives have resulted in few start-ups. Most people are not willing to work across organizational structures due to the silo structure of a university – runs against human nature to work across silos.
Gothenburg, Sweden	Problematic. External funding has been a continuous issue up until recently.	Partly problematic. IP related content was difficult to include to a balanced extent. A difficult issue was to maintain reflection vs venturing balance. Developments have never been hampered. But, the program has been administratively integrated only post-Bologna.	Problematic. Expanding a small core faculty took many years. Action-based pedagogy has implied challenges to attract and sustain faculty. Initially students did not choose venture positions after graduation, but this improved substantially after initiation of a TTO based seed financing entity integrated to the program. Securing student shares in ventures was a key development, resulting in increased incentives for students.
Louvain, Belgium	Unproblematic. In the years 1997-2000 there was a lot of money donated to the project of starting up the program by large companies in Belgium.	Partly problematic. At start-up the support from rector allowed them to by-pass most of the existing structures of the university. Interdisciplinary student background is causing complex adaptations in courses such as finance, and also tension in the mixed groups. Initial objective of producing start-ups is today revised towards developing entrepreneurial competence. The program has been administratively integrated only post-Bologna.	Unproblematic. Program is run by a core interdisciplinary faculty team from entrepreneurship, law and engineering. The program directors have deprioritized starting ventures, partly due to low amount of ventures stemming from the program. Students have ownership only in student ventures, not in ventures from university TTO.
Lund, Sweden	Unproblematic. Financing was in place before actual set-up activities were initiated.	Unproblematic. A process based course design was applied from the start with few problems. Focus was on balancing reflection with venturing. Faculty is team-working around real venture student counseling while ensuring academic reflection. Formal approval decisions from university took time partly explaining long time from idea to program launch.	Unproblematic. Tenured faculty were strategically recruited specifically for program. Students choose either to start their own fully-owned company or are offered a minor share in TTO venture.
Tromsø, Norway	Unproblematic. Financing was in place before actual set-up activities were initiated.	Partly problematic. In-house competency was gradually built up, sourcing lacking competency externally. High-tech content of ventures does not yet align with student and faculty background. Problematic with master thesis legitimacy. Envy from other departments due to program success has been a problem.	Partly problematic. University “practitioner” initiated. Soon professor and additional PhDs were engaged. Program has relieved legitimacy issues of the local TTO. Challenges with tensions in highly diverse teams. Challenging to incentivize students to start ventures in a Norwegian oil-economy.

Table 3. Establishment characteristics of select venture creation programs

5. Discussion

Based upon our empirical findings, we found no strong support for obstacles being the main reason for VCPs being a seemingly rare phenomenon in higher education. The obvious explanation for this refutation of our main hypothesis is that we have only identified and thus interviewed VCPs that have been successful over many years – and thus they obviously have overcome or avoided any obstacle potentially faced by less successful VCPs. This explanation certainly has strong merit and should be addressed in future research, but is beyond the scope of the current study. Instead we will in this discussion focus on why our studied VCPs have encountered so few major obstacles and speculate around how incentive structures might be set up at universities wanting to have a VCP of their own.

All the studied VCPs started with or later obtained support from the university leadership - some of the VCPs were even initiated by university leadership, i.e. Lund and Louvain. For all programs except Eugene, this support included the strategic support of the university president. Also notable was an external and more or less financial sponsorship behind all of the programs except Lund as a precondition for starting. Finally, all the programs except Lund had at least one internal operative champion from the start. In the case of Lund a former university president instead initiated a strategic recruitment of a full professor who then together with other attracted faculty became champions – a process seemingly with lesser obstacles but also notably the slowest establishment process of the six studied cases.

Once a sponsored and strategically supported program is initiated, there seems to be little to learn about which steps to take and how to specifically organize the VCP. A variety of paths and organizational forms seem to work. Notable is instead that, with the exception of Babson, our VCPs have a high degree of interdisciplinarity as well as intense structured collaboration with commercialization actors at and around the university (TTOs, incubators, institutes, etc.). Babson being a college specialized in entrepreneurship education instead benefitted strongly from an entrepreneurial faculty and alumni network.

With the above reflections in mind, three new propositions can be generated and subsequently discussed:

- Without strategic support, from university president, etc, and external sponsorship there is little incentive for faculty or subunits at universities to initiate VCPs.
- Once a VCP is initiated, operative champions of such programs do not lack incentives to continue developing the VCP.
- However, the incentives for VCP initiators are radically different than traditional incentives for faculty operating in more established teaching and educating environments.

While not possible to support other than in anecdotal terms in the current study, the first proposition would potentially strongly explain the rare occurrence of VCP programs: if there is no strong strategic commitment and sponsorship, why should then faculty start to champion a program which is highly interdisciplinary and involves partnering around commercialization and venture creation, well beyond the borders of any university department dedicated to research and

education? While Kenney and Goe (2004) find that sub-cultures supportive of entrepreneurial activity can counter the disincentives of a university environment ambivalent to entrepreneurial development, this may be in terms of independent entrepreneurial activities, and differentiates from entrepreneurial activity that include shifts in educational paradigms. VCPs, according to this proposition, are not easy to build bottom-up only, which on the contrary might be easier in the case of for example business plan competitions and student incubators. VCPs instead seem to require clear strategic intent from the top to allow an operative champion, or team of champions, to initiate concrete developments, as these involve shifting from conventional paradigms (Gibb, 2005).

One possible explanation for this assumed need for strategic support could be the focus on interdisciplinarity and boundary-spanning activities shown in various degree in all of the studied VCPs. Since a VCP seems to demand interdisciplinarity and boundary-spanning activities for its operation, the need for strategic support, preferably from the university president, becomes almost mandatory for individuals (champions) wanting to setting up a VCP at their university. It seems reasonable to expect interdisciplinarity and boundary spanning activities to be very difficult without strategic support from university leadership. Janssen and Bacq (2010) seem to support this idea in their article focusing explicitly on the obstacles experienced when establishing their VCP in Belgium, and conclude that the interdisciplinary nature of a VCP both generates many cultural challenges and offers very few rewards. Thursby et al also (2009) reflect on challenges in establishing their VCP at Georgia Institute of Technology, a VCP not part of this study. They too point out the inherent complexity of an interdisciplinary program as a major obstacle, and emphasize the importance of receiving external funding for the program as a means to catalyse cross-school collaboration.

The second proposition is partly supported by the current study. The respondents did give strong personal accounts around not only the meaningfulness of running VCPs in terms of producing ventures and entrepreneurs, but also in terms of these programs also offering research opportunities and involvement into building more entrepreneurial universities. With the exception of Eugene, all studied VCPs at least after a while had strong involvement of tenured faculty. In many cases faculty constituted a research group taking collective responsibilities for the interactive components of the program and also seeing the program as an entrepreneurship and venture laboratory for relevant action research. The second hypothesis in combination with the first, if further substantiated, offer promise that VCPs might become much more common at universities if only the right mandates and support are created and faculty learn about the career opportunities stemming from VCP involvement.

The third proposition stipulates that faculty operating in more established educational and research settings have radically different incentives than faculty engaging in strategically supported VCPs. This proposition is certainly not supported by the current empirical study. However, previous research around entrepreneurship education (Gibb, 2005, Neck and Greene, 2011) gives good ground to propose an almost paradigmatic shift in the type of incentive – from an incentive based upon autonomy of the university bureaucracy (“do this and that course per year then you are free to do research”) to an entrepreneurial incentive to be a key-actor in developing university entrepreneurship potentially long-term affecting the entrepreneurial ecosystem of a region. For example, Ollila and Williams Middleton (2011) argue that facilitating a venture creation approach requires faculty and staff to act entrepreneurially. The latter

incentive arguably is not only related to education and university venture creation but also to promising research around how different action-based educational measures actually help develop entrepreneurial behavior and entrepreneurial competence – whether that research is labeled entrepreneurial behavior, entrepreneurship education, university entrepreneurship or incubation.

6. Conclusions and Implications

The current study has investigated six identified venture creation programs exploring the hypothesis that obstacles in establishing these programs can explain why they despite being advocated by research and policy are so rare. The hypothesis was not supported – few serious obstacles were identified among the studied VCPs. The main conclusion of this article thus has to be that a rare occurrence of VCPs requires other explanations. Three new propositions were generated for further research:

- Without strategic support, from university president, etc, and external sponsorship there is little incentive for faculty or subunits at universities to initiate VCPs.
- Once a VCP is initiated, operative champions of such programs do not lack incentives to continue developing the VCP.
- However, such incentives are probably radically different than traditional incentives for faculty operating in more established teaching and educating environments.

The current study, although valuable as a first systematic account of VCP experiences, should be complemented with further empirical investigations to substantiate any of the new hypotheses, as well as others relevant to realize the potential of VCPs. We, however, do hope that this initial study will encourage such efforts. Other interesting but unexplored questions raised through the current study are:

- Is the Northern European setting and perhaps in particular the Scandinavian arena more benevolent for VCP? And if so, why?
- What explains the late rise of VCPs in the late Nineties and onwards? Are there knowledge economical or other understandings to be gained?

The main implication from the current study is that VCPs, if started with strong strategic support and sponsorship, offer few large obstacles while producing important effects for surrounding society as well as for the universities where they operate.

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