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## **Competence and Customer Journey based Curriculum Design, Case SmartUp International Master Programme in Entrepreneurship**

*By Suvi Starck & Jonna Pääkkönen, Haaga-Helia UAS, Finland*

### *Introduction*

This paper introduces briefly the background of the competence and customer journey based SmartUp master programme design and how it was developed, as well as the preliminary results of the research on how the students experienced their competence development and “SmartUp learning journey” during their SmartUp master studies in 2018. The research contributes to the SmartUp for Academia deliverable and quality reporting of the SmartUp project by emphasizing the successful and critical points of the journey and by providing recommendations for future purposes.

First, the SmartUp master programme was designed in co-creation workshops together with the SmartUp project partners, entrepreneurs and prospective students in 2017. The curriculum was designed as competence-based, focusing on strengthening the key skills and competences of future entrepreneurs. According to Jones & Vorhees (2002) competence-based curriculum (CBC) design includes three main methodologies: a description of the competences, a means of assessing the competence and a standard for acknowledging the student competent. Furthermore, the design process requires a common vision of competences (shared point of view) for learning and has to consider instructional strategies on how the learning context is formulated based on the type and structure of the competence, which enable the lifelong learning and respond to the needs of work life (Soare 2015). The key skills identified were 1) leadership competencies emphasizing being visionary and inspirational, 2) managerial competencies emphasizing problem solving skills and change, stress, time and project management, 3) creativity emphasizing innovativeness and design mindset, 4) social competences emphasizing communicating, sharing, listening, influencing, collaborating, networking, as well as the SPACE referring to situational awareness, presence, authenticity, clarity and empathy, and 5) emotional competences emphasizing self-awareness, self-regulation, motivation, relationships, being passionate and empathetic. (SmartUp 2017a, see SmartUp 2017b for a more detailed description of the programme.)

Second, the competence-based curriculum was enriched with lean startup and design thinking methodology of Stanford University to emphasize customer perspective meaning to entrepreneurs in their learning process. (SmartUp 2017c.) These methodologies are taught globally in a growing number of universities. The lean startup methodology is a less risky way to start a company, as “it favors experimentation over planning, customer feedback over intuition and iterative design over traditional ‘big-design-up front’ development”. The key elements include business model canvas (for quick a business plan), minimum viable product (through

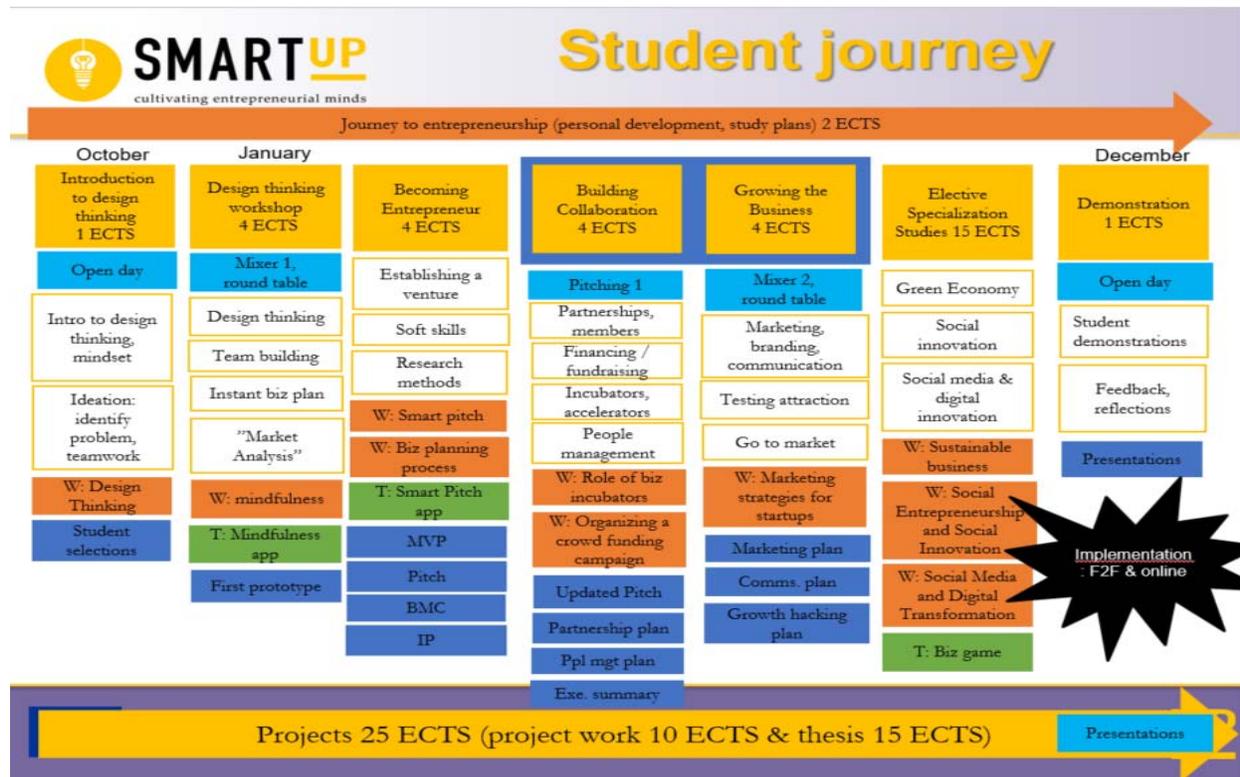
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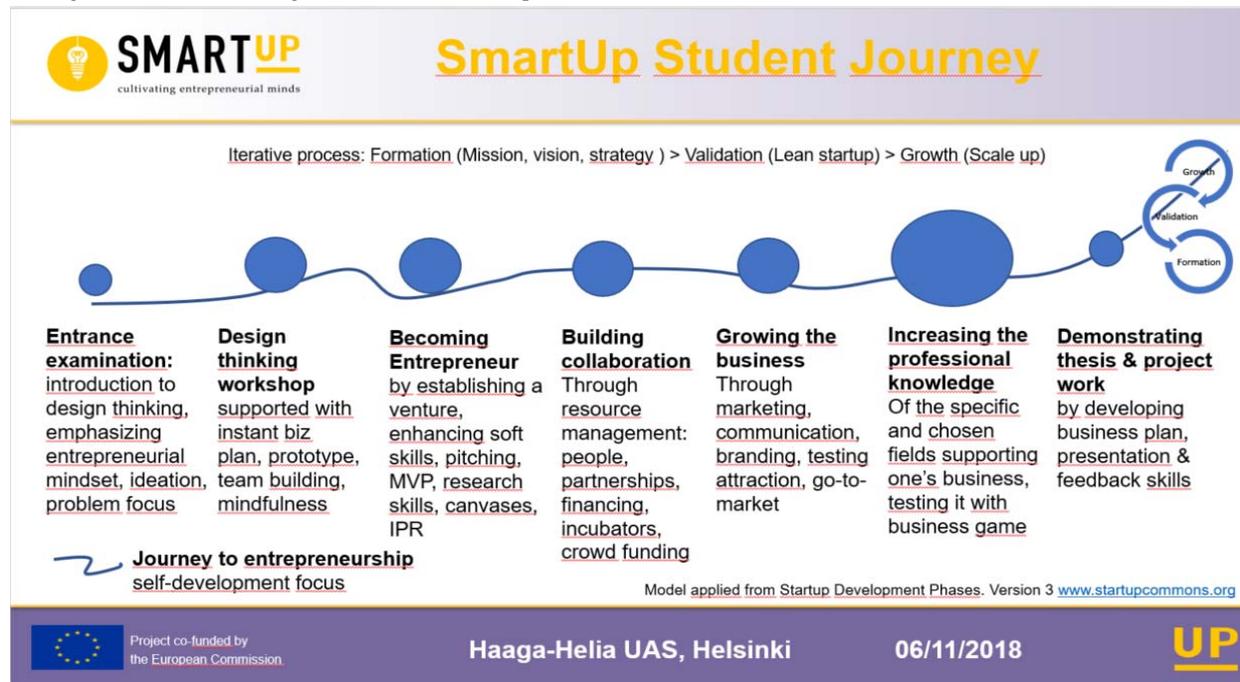
agile development) and pivoting (iterations) (Blank 2013.) It aims to effective productivity through three steps: vision, steer and accelerate. This means maximizing the functions bringing added-value to the customer, optimizing the functions enabling added-value to customer and minimizing those functions that do not bring added-value to the customer. (Ries 2011.)

One way to teach lean startup methodology in practice is to utilize design thinking methodology. It has its roots in the way how designers think and work (Cross) and in innovation activities that were combined with human-centered design process (Brown 2008). According to Stanford's model, it is an iterative process focusing on finding solutions to customer's problems (needs). It consists of five stages: empathy, define, ideate, prototype and test (Stanford d.school 2003.) The methodology develops student's skills in problem identification, customer insights, creativity, brainstorming, interaction and teamwork. The design thinking skills were included to the Smartup curriculum as they were identified as critical success factors of future entrepreneurs during the Smartup project's Stanford visit (See also Seelig 2015).

To provide an experiential learning path for the entrepreneurial students, the curriculum was presented as a service process, as a "student's journey to entrepreneurship" that was modified from the customer journey theories (Rawson et al. 2013, Zomerdijk & Voss 2010). These customer journey theories emphasize the experience and service process from the customer's point of view. According to Stickdorn & Schneider (2010) it can also be seen as an "engaging story" of users (students) interactions with the service (SmartUp master programme). The Smartup design for the master programme closely imitates and follows the lean startup company's process from initial problem recognition, through prototyping and testing to business plan creation with go to market plan. The Smartup journey starts with evaluation and selection of prospective students, continues with building their competences and knowledge gradually to upper levels and ends after 12 months with students' demonstration of skills upon graduation. Each module is a pitstop on the student's journey and a checkpoint of their skills-set. Every learning path is unique, as each student has the freedom to choose their own specialization package to support their iterative journey. The assignments of the modules are designed to develop student's own business, bringing them benefits for future purposes. (SmartUp 2017c.) However, even though the students start agile development with the business model canvas, they are requested to write a great business plan (see Sahlman 1997) as their thesis and/or project work in the end of their journey. The student journey is presented in the picture 1 on the next page. Furthermore, to emphasize the competences and skills the Smartup master programme promised to develop, the student journey is presented again by applying the model of StartUp Commons StartUp development stages (2018) in the picture 2 on the next page.



Picture 1. Smartup Student Journey with modules and credits (yellow boxes), deliverables (blue boxes), webinars (orange boxes) and tools (green boxes). (Smartup 2017b)



Picture 2. Smartup Student Journey with the emphasis on competencies and skills. (Modified from Startup Commons: Startup Development Phases 2018)

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Third, the pedagogy applied in the master programme was social constructivist approach, supporting learning together in social processes and environments where people share their experiences, work together and take responsibility of their gradual learning and competence building on their own pace and focusing on their individual experiences (Brown et al. 1989; Seker 2008; Bruner 1966). The learning approach was supported with learning by doing and project-based learning methods, where the students conducted their thesis through their own entrepreneurial ideas, developing them from idea to go-to-market stage. (SmartUp 2017 a.)

As an outcome upon graduation (Smartup “value proposition” for the students), students are able to generate business ideas in a systematic manner utilizing design thinking methods, take steps to strategically exploit new business opportunities, create, test and pitch new business ideas as a part of an overall business plan, further develop, test and pitch successfully a business plan with a go-to-market plan, lead and manage complex business development operations in order to create a minimum viable product, and work independently and in teams to collaborate with different international partners. (SmartUp 2017a, Smartup 2017b)

## **EMPIRICAL RESEARCH**

The research approach guiding the methodology of this work is inductive. The research strategy is action research, as the researchers are involved in the development process of the Smartup programme, this process is in a central role, and this research has implications beyond the current situation. The research is constructed of two parts: a quantitative survey of the future competences of entrepreneurs and qualitative interviews of SmartUp students’ experiences of their learning journey.

### **Quantitative survey: data collection and analysis**

The quantitative survey was conducted in the Finnish “open” table event in September 2018. The 19 respondents were random visitors at the SmartUp stand at the Haaga-Helia campus. By adding their name on the contributor’s list, they agreed to allow the anonymous use of their responds in this research. They were asked to look at the shown Smartup competences and think about their relevance in the future. Then the respondents were asked to submit their thoughts and new ideas to the Tricider online platform that was open on the laptop. In addition, the respondents were able to vote or comment the competences and skills other people had mentioned in the platform. The data was saved to a separate file. The quantitative data was analyzed by examining the listed competences, counting the popularity of them and then comparing them to the competences and skills mentioned in the original Smartup customer journey pictures 1 & 2.

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## **Qualitative interviews: data collection and analysis**

The qualitative semi-structured interviews were conducted in September-October 2018. A small sample of 10 students was randomly selected from the 40 SmartUp students. An email request to participate in the research was sent to the selected students with a permission to conduct the research. Some of the students did not respond and the researchers had to send new requests to the substitutes quickly to be able to produce the research within the tight time frame. By the time this paper is written, 7 respondents were interviewed. The interviews were mainly conducted either face-to-face or through Skype. They were recorded and lasted approximately 30-60 minutes each. In two cases the internet connection was so bad that the interviewees had to record and send their answers afterwards to the interviewers based on the themes and research questions sent by email. The research themes focused on their background and stage of their business development, experience of SmartUp journey, benefits and challenges they had faced (critical points in the process), learning process and competences, received support in becoming an entrepreneur, next steps after smartup, development ideas for the programme and finally their satisfaction to their journey in overall. All recordings were transcribed and data was anonymized.

The qualitative data was analyzed first by categorizing it based on the research themes (mentioned above) and by highlighting the competences and skills mentioned. Those were compared to the “value proposition”. Then the experiences were looked into and mentioned feelings were pinpointed. Then the similarities and differences were identified and surprising or unexpected thoughts listed.

## **INITIAL RESULTS**

In this chapter, we will first focus on presenting the results related to competences, elaborate from there to customer journey related results and end this chapter with respondents’ background information. First of all, the survey data introduces the identified skills and competences relevant for international entrepreneurs in the future. These were first analyzed and categorized in groups based on their match with the Smartup module headings, see table 1 below and column: Skills and competences arising from the survey. The categorization was required in order to increase comparability between anticipated entrepreneur’s future skills and Smartup skills. Elaborating from there, the second column of the table shows the skills and competences defined in the Smartup curriculum. The table allows us to compare these two columns and notice similarities and differences between them.

As seen from the table 1, the new skills arisen from the survey are: persistency, entrepreneurship through acquisition, role modeling, digital customer service skills and digital transformation skills. However, as the respondents used different terminology, some of the new skills might be already part of the presented Smartup skills. These Smartup skills were entrepreneurial mindset,

mindfulness, design thinking, partnerships, networking and marketing skills. In the light of these results and to meet the entrepreneur's needs, three steps should be taken: 1) check on in-depth level if the new skills are part of the presented Smartup skills, 2) include the missing skills to the curriculum, and 3) check that all skills are placed in the modules where they fit best.

**Table 1.** Comparison of Smartup skills and anticipated future skills

<b>Smartup Module</b>	<b>Skills and competencies arising from the survey</b>	<b>Skills and competencies defined in Smartup Modules</b>
Introduction to Design Thinking	<ul style="list-style-type: none"> <li>● <b>ability to recognize challenges</b></li> <li>● <b>design thinking skills</b></li> </ul>	<ul style="list-style-type: none"> <li>● design thinking skills</li> <li>● entrepreneurial mindset</li> <li>● ideation skills</li> <li>● problem focus</li> </ul>
Design Thinking Workshop	<ul style="list-style-type: none"> <li>● real-time service development skills</li> <li>● <b>complex problem solving skills</b></li> </ul>	<ul style="list-style-type: none"> <li>● instant business planning skills</li> <li>● design thinking process: ideation, testing &amp; prototyping skills</li> <li>● team building skills</li> <li>● mindfulness</li> </ul>
Becoming Entrepreneur	<ul style="list-style-type: none"> <li>● <b>persistence</b></li> <li>● <b>ability to take a break</b></li> <li>● <b>lifelong learning competence</b></li> <li>● entrepreneurship through acquisition</li> <li>● role modelling skills</li> </ul>	<ul style="list-style-type: none"> <li>● venture establishment skills</li> <li>● soft skills</li> <li>● pitching skills</li> <li>● minimum viable product or process creation skills</li> <li>● research skills</li> <li>● canvases</li> <li>● intellectual property rights</li> </ul>
Building Collaboration	<ul style="list-style-type: none"> <li>● <b>empathy and good social skills</b></li> <li>● <b>cross-cultural understanding and cultural knowledge</b></li> </ul>	<ul style="list-style-type: none"> <li>● resource management skills</li> <li>● partnerships &amp; networking skills</li> <li>● financing skills</li> <li>● understanding of incubators</li> <li>● crowd-funding skills</li> </ul>
Growing the Business	<ul style="list-style-type: none"> <li>● <b>digital (customer) service skills</b></li> <li>● thinking in scale competence</li> <li>● in-depth globalization skills</li> </ul>	<ul style="list-style-type: none"> <li>● marketing skills (growth hacking skills)</li> <li>● communication skills</li> <li>● branding skills</li> <li>● testing traction skills</li> <li>● go-to-market skills</li> </ul>
Elective Specialization studies	<ul style="list-style-type: none"> <li>● digital transformation skills</li> </ul>	<ul style="list-style-type: none"> <li>● professional knowledge supporting one's business</li> </ul>
Demonstration		<ul style="list-style-type: none"> <li>● development of the business plan</li> <li>● presentation and feedback skills</li> </ul>

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Second, continuing with the competence topic, the interviewees of the qualitative research emphasized the most important skills and competences that they learned during their journey (learning process). Those were divided in four groups: 1) **Entrepreneurship**: understanding of what it takes to become an entrepreneur (entrepreneurial mindset, insights, different roles of an entrepreneur), ability to balance between work/family/studies (remote work, time management perspectives), self-empowerment and self-awareness, and lifelong learning skills; 2) **Lean startup methodology**: problem identification and solving skills, ideation skills, design thinking and agile development skills; 3) **Collaboration and interaction**: teamwork, co-creation and social skills (also learning from others), networking skills, pitching skills, communication and marketing skills, and social media knowledge; 4) **Innovative tools**: practical & innovative tools such as templates, canvases and learning tools.

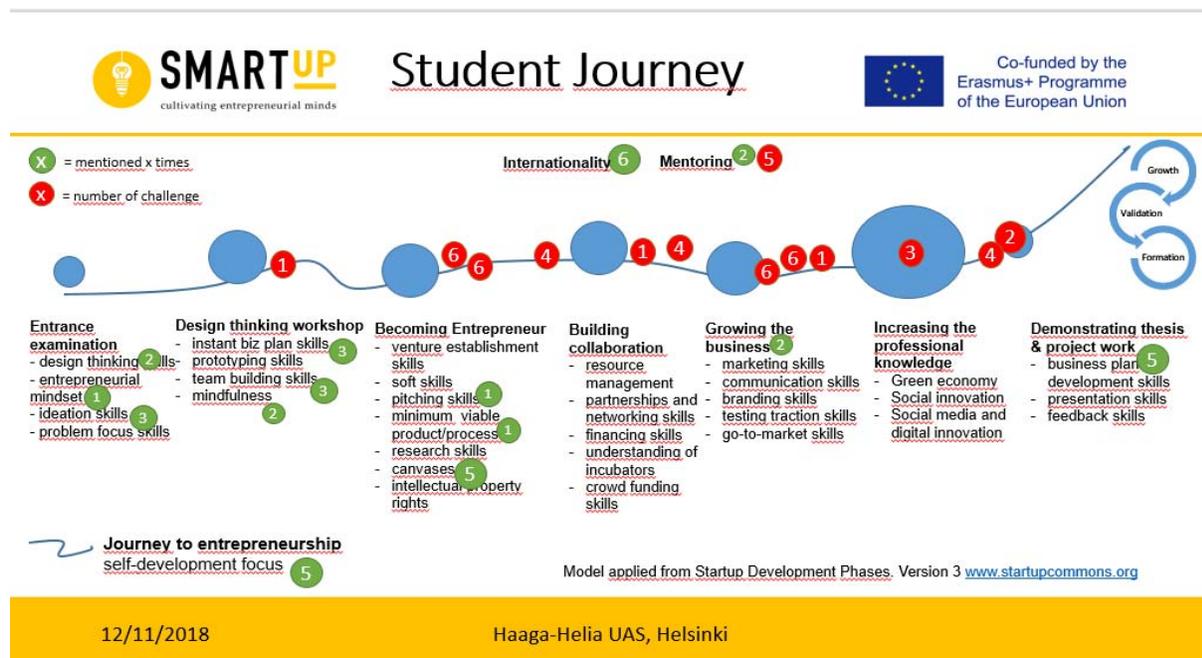
Interestingly, the respondents mentioned a bunch of other skills and competences when they were asked about the **benefits** of the Smartup programme. The benefits were categorized in four groups: 1) **International entrepreneurship**: business concepts, clear process and steps to become an entrepreneur (the journey), country specific and cultural knowledge, international network, self-leadership, 2) **Value-added co-creation**: connection with other people (rapport), knowledge sharing, value of collaboration, ideation (enriching ideas together), trust between team members, working as a team having a shared goal, creativity and design thinking, agile development, 3) **Power of diversity**: individual paths (compulsory and elective studies), different skills for different people, learning from others, self-awareness and how others perceive oneself, access to four universities at once, and 4) **Valuable tools**: mindfulness app, agile tools and methods to be applied to anything, practical skills how to use them.

Furthermore, when comparing these gained benefits and competencies to the Smartup's value proposition (learning objectives of students), the respondents are able to 1) generate business ideas utilizing design thinking methods, 2) take steps to strategically exploit new business opportunities, create, test and pitch new business ideas, 3) further develop, test and pitch a business plan, 4) create a minimum viable product, 5) work independently and in teams to collaborate with different international partners.

Referring to previous paragraphs on what the Smartup students had learned, they were guided to set themselves **personal learning objectives** for their learning journey in the beginning of the year. The objectives varied depending on the individual: push your business idea forward, learn how to validate ideas (narrowing down), learn terminology & processes of business, learn how to start a business locally (country-specific practical knowledge), learn how to fine-tune the idea to a business, explore your network and learn to use design thinking method in business development. Comparing these learning objectives to the previous paragraphs, these objectives were realistic and achieved.

Third, continuing to the **challenges** the respondents experienced during their journey, which can be interpreted as **critical points** of their learning journey, the challenges were categorized in six groups: **1) Platform and online challenges:** disconnection from the group when transferred from face-to-face to virtual platform, no grades available, wrong grading scale (1-10, not 1-5), starting and ending times of online sessions confusing to participants; **2) Time management challenges:** balance between studies/work/family, classes on weekends, exceeded assignment deadlines, stress with the tight schedule of thesis/project work and stress of in-depth level learning due to limited time; **3) Quality challenges:** 50% of the modules on high quality while 50% on low quality; **4) Misunderstandings:** problems with understanding the teacher, unclear instructions and confusion on what is expected from students, unfair treatment on assignment deadlines and frustration on general level responses; **5) Lack of communication:** lacking information of modules and processes, low level of communication on the process and what comes next and slow responses to the students messages from the organizing body; **6) Content related challenges:** narrowing down to a viable business idea, flipped classroom learning method, pitching & marketing, selling and formulating the idea to the form of a business plan.

To sum-up the competence-related results, the most important competencies, as well as the most critical points on the journey are presented in the picture 3 below. The bigger the dot, the more often it was mentioned by the respondents.



**Picture 3.** The most important competencies (green) and critical points in the journey (red)

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All in all, the respondents described their experience of Smartup journey as happy, exciting especially in the beginning, enjoyable especially from brainstorming perspective and awakening hunger to learn more. On the other hand, one experienced unfairness due to the way how students were treated with submission deadlines, and disappointment due to the lack of mentoring. Also disagreements and slow responses from organizers were mentioned as reducing factors for motivation and interest to study. On the contrary, respondents evaluated their readiness to start a business after this journey on scale 1 to 5, where 1 is not ready at all and 5 is extremely ready, ending with the average of 4 (ready). They also evaluated their satisfaction to the programme on scale 1 to 5, where 1 is very dissatisfied and 5 is extremely satisfied, giving the average satisfaction number of 3.5 (quite satisfied). Most of them planned to launch their business after graduation within the next 1-2 years.

Focusing on the supporting functions of the programme, the respondents mentioned they got support in validating their idea, one-on-one sparring (coaching as extra service), narrowing down from several ideas to one, surviving from the thesis and project work, and in building a proactive information seeking attitude. On the contrary, the respondents mentioned they were missing the mentoring activities, matching of team members in regarding their business, encouragement in trusting their business idea, tools for scaling up and a tool to track their personal progress in the studies.

In the end of the interview the respondents were asked to ideate how they would change or improve the Smartup master programme from an end-user's perspective. The development ideas are presented below in the format of guidelines for future implementers, and set on the programme timeline: before, at launching the programme and during the programme.

Before:

1. Add more intensive periods to the programme with face-to-face interaction activities. For example one intensive period in the middle and one in the end of the programme.
2. Enrich the content with financial and accounting knowledge, as well as with local knowledge on registration and taxation in the organizing countries.
3. Visualize the student's workload on a timeline (wave) to provide a clear picture of the work required from the students.
4. When conducting an online programme, test the technical systems (platforms, apps, software) together with the prospective students before the launch of the programme.

At launching the programme:

5. Communicate clearly the expectations, timetable and the journey to the students in the beginning of the programme. Repeat and ensure they understand what it all means.
  - a. What are they expected to do?

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- b. What happens and when? For instance major steps, progress monitoring, mentoring activities (group, individual, peer), roundtables, conference and holiday seasons in different countries.
  - c. What happens if students do not meet the given deadlines? Extension of studies?
  - d. How they can provide systematically feedback on modules, process, etc.?
6. Plan online activities that will strengthen the good rapport achieved among students during the intensive period, and this way motivate them to keep going.

During the programme:

7. Always respect the students, be humble and listen to their problems thoroughly. Be ready to solve the problems as soon as possible.
8. Keep the promised timetable in regarding activities to guarantee service availability to students, such as mentoring.
9. Monitor the quality level of different modules regularly by collecting systematic feedback from the students.
10. Start the thesis process well on time, 6-9 months before the submission at the latest to ensure the students have enough time to process their work.
11. Keep the promise to deliver the grades to the platform within 3 weeks.

Finally to conclude the qualitative research results, focus is on the surprising facts arising from the data. First, the students established their own channel for communication in whatsapp excluding the organizing bodies and used it unconsciously as a peer-mentoring and -learning platform. This reduced their contacts to the organizing bodies. Second, one respondent mentioned that in spring 2018 some students were upset and dissatisfied to the organizing bodies ability to meet their requests based on limited funding, time and resources. Therefore they were considering contacting the project financier to make their voice heard. Third, some students were surprised of how well they managed to push their business idea forward thanks to the process, but also how different learning experiences their classmates had had, as they realized that the relevance of topics to each individual varied a lot.

### **Background of the interviewees**

The backgrounds of the respondents were very different. The ages of the respondents varied between 24 and 38 years. From the seven respondents four were female and two were male. Four of them were holding a bachelor's degree and two of them were holding a master's degree. The degrees were from the following fields: computer science engineering, economics, education, law, mechanical engineering and tourism. The status of the respondents' businesses varied and three were on idea level, two had their business plan done and one had longer experience with a company registered and business launched a few years ago.

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## CONCLUSIONS & RECOMMENDATIONS

In conclusion, the purpose of this paper was to introduce briefly the competence and customer journey based SmartUp master programme design and how it was developed, as well as the preliminary results of the research on how the students experienced their competence development and “SmartUp learning journey” during their SmartUp master studies in 2018. Unfortunately, the current sample of students is too small to generalize or scale up these results and further research is needed to elaborate from these results. In addition, the experiences of educators should be collected and explored as well to get a holistic view on future development. However, for the future exploitation of the Smartup master programme in entrepreneurship, some recommendations can be presented.

First, the most beneficial elements of the student’s learning journey were 1) International entrepreneurship, 2) Value-added co-creation, 3) Power of diversity, 4) Valuable tools. More detailed descriptions of these success elements were provided in the results chapter. These elements should be sustained and cherished to ensure the successful outcomes, when re-designing and tailoring the master programme for future entrepreneurs.

Second, critical points of the student’s learning journey related to 1) platform and online challenges, 2) time management challenges, 3) quality challenges, 4) misunderstandings, 5) lack of communication and 6) content related challenges. The first five of them are rather holistic than pinpointed to one specific event on the journey, which is the case with the content related category (6). These six elements were described in detail in the results chapter and should not be ignored when re-designing the programme, and neither should the development ideas presented through the challenge linse in the results chapter.

In addition, the impact and relation of the critical points to entrance examination should be considered before selecting the candidates to the programme. The purpose of the entrance examination is to ensure that the selected candidates have the required competence level (e.g. understanding of topics and language) as well as enough time to conduct the master programme. Hence it is possible to guarantee that they are able to take most out of the programme regarding their professional development as entrepreneurs. Nevertheless, it is recommended to send a feedback survey to all Smartup students in the end of the programme to collect their final satisfaction level and suggestions for improvements of the programme.

Third, it is recommended to extend the design thinking approach of the curriculum to a deeper level into learning, and re-design the modules from learning design perspectives. This kind of approach enriches the learning methods and tools, and hence enables even more personal learning paths for individuals. Different learning design models are introduced for example by Perovic & Young (ABC model for learning design, 2015), Salmon (Carpe Diem model, 2013),

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Laulliard (Conversational framework on the six learning types, 2012) and Conole (7C's of Learning Design, 2015). These models include for example the yearly communication activities to the students, which are recommended to be included in the general timetable.

The research contributed to the SmartUp for Academia deliverable and quality reporting of the SmartUp project by emphasizing the successful and critical points of the journey and by providing recommendations for future purposes.

### **About the project**

*SMARTUP - Startup Master and Advanced Reflective Tools by Universities and Partners* project aimed to develop an innovative Startup Master Programme and Advanced Reflective Tools through cooperation between Universities and companies belonging to innovative sectors. The purpose was to respond to students' needs to develop their entrepreneurial competencies to succeed as an entrepreneur: hard skills such as management and innovation, and soft transversal skills, such as self-awareness and resilience. SMARTUP offered wide-ranging support to face the challenges inherent in the entrepreneurial process by providing a smart way to become a startupper. The project built online tools to support students in the early stages of enterprise development: serious business game, pitching app and mindfulness app to practice different skills and a virtual platform, where students, startupper, teachers, entrepreneurs, mentors and investors can meet and create a entrepreneurial community,

The project is coordinated by the University of Milano-Bicocca, Italy and consists of ten other partners: Haaga-Helia University of Applied Sciences (Finland), University of Thessaly (Greece), FH Joanneum University of Applied Sciences (Austria), StagaSoft as part of Regional Business Incubator Rila (Bulgaria), Research Qualifications R.Q. (Italy), Totem Learning (UK), Teracomm RO (Romania), IrRADIARE Science for Evolution (Portugal), European Growd-funding Network ECN (Belgium) and Stanford University (US).

More information: <https://www.smartupeurope.eu/>

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