

IDE Master Graduation

Project team, Procedural checks and personal Project brief

This document contains the agreements made between student and supervisory team about the student's IDE Master Graduation Project. This document can also include the involvement of an external organisation, however, it does not cover any legal employment relationship that the student and the client (might) agree upon. Next to that, this document facilitates the required procedural checks. In this document:







- The student defines the team, what he/she is going to do/deliver and how that will come about.
- SSC E&SA (Shared Service Center, Education & Student Affairs) reports on the student's registration and study progress.
- IDE's Board of Examiners confirms if the student is allowed to start the Graduation Project.

! USE ADOBE ACROBAT READER TO OPEN, EDIT AND SAVE THIS DOCUMENT

Download again and reopen in case you tried other software, such as Preview (Mac) or a webbrowser.

STUDENT DATA & MASTER PROGRAMME

Save this form according the format "IDE Master Graduation Project Brief_familyname_firstname_studentnumber_dd-mm-yyyy". Complete all blue parts of the form and include the approved Project Brief in your Graduation Report as Appendix 1!

family name Putman
 initials LR given name Leah
 student number 
 street & no. 
 zipcode & city 
 country 
 phone 
 email 

Your master programme (only select the options that apply to you):

IDE master(s): IPD Dfl SPD

2nd non-IDE master: _____

individual programme: _____ (give date of approval)

honours programme: Honours Programme Master

specialisation / annotation: Medesign

Tech. in Sustainable Design

Entrepreneurship

SUPERVISOR

Fill in the required data for the supervisor, check the instructions on the right!

** chair Giulia Calabretta dept. / section: DOS
 ** mentor Jan Carel Diehl dept. / section: SDE
 2nd mentor Iana Aranda
 organisation: ASME (American Society of Mechanical Engineers)
 city: New York country: United States

comments (optional)

! Chair should request the IDE Board of Examiners for approval of a non-IDE mentor, including a motivation letter and c.v.

! Second mentor only applies in case the assignment is hosted by an external organisation!

! Ensure a heterogeneous team. In case you wish to include two team members from the same section, please explain why.

Procedural Checks - IDE Master Graduation

APPROVAL PROJECT BRIEF

To be filled in by the chair of the supervisory team.

chair Giulia Calabretta date 24 - 03 - 2022 signature G. Calabretta

CHECK STUDY PROGRESS

To be filled in by the SSC E&SA (Shared Service Center, Education & Student Affairs), after approval of the project brief by the Chair. The study progress will be checked for a 2nd time just before the green light meeting.

Master electives no. of EC accumulated in total: _____ EC

Of which, taking the conditional requirements into account, can be part of the exam programme _____ EC

List of electives obtained before the third semester without approval of the BoE

Geen electives i.v.m. Variant for Engineers

YES all 1st year master courses passed

NO missing 1st year master courses are:

name K. Veldman date 29 - 3 - 2022 signature K. Veldman

FORMAL APPROVAL GRADUATION PROJECT

To be filled in by the Board of Examiners of IDE TU Delft. Please check the supervisory team and study the parts of the brief marked **. Next, please assess, (dis)approve and sign this Project Brief, by using the criteria below.

- Does the project fit within the (MSc)-programme of the student (taking into account, if described, the activities done next to the obligatory MSc specific courses)?
- Is the level of the project challenging enough for a MSc IDE graduating student?
- Is the project expected to be doable within 100 working days/20 weeks ?
- Does the composition of the supervisory team comply with the regulations and fit the assignment ?

Content: APPROVED NOT APPROVED

Procedure: APPROVED NOT APPROVED

Travelling abroad is only possible if this fits within TU Delft's policy (please check TU Delft travel restrictions).

comments

name Monique von Morgen date 11/4/2022 signature MvM

Designing Sustainable Startup Support in East Africa

project title

Please state the title of your graduation project (above) and the start date and end date (below). Keep the title compact and simple. Do not use abbreviations. The remainder of this document allows you to define and clarify your graduation project.

start date 28 - 02 - 2022

15 - 08 - 2022

end date

INTRODUCTION **

Please describe, the context of your project, and address the main stakeholders (interests) within this context in a concise yet complete manner. Who are involved, what do they value and how do they currently operate within the given context? What are the main opportunities and limitations you are currently aware of (cultural- and social norms, resources (time, money, ...), technology, ...).

In the entrepreneurship or startup ecosystem, innovation hubs, entrepreneurs, and support functions interact to generate and grow businesses (Figure 1). Innovation hubs- including incubators, accelerators and co-working spaces- coordinate resources to provide programs and tailored services to support entrepreneurs as they launch and grow new businesses. Entrepreneurs travel to these hubs in major cities for intensive boot camps, education, mentorship and networking opportunities. Governments often simplify legal paths for entrepreneurs and offer tax and financial incentives to funders to encourage investments in startup companies. Funders and NGOs often provide guidance and essential capital to promising companies through various financing models. Understanding these stakeholder relationships and values has become more important in the last two years with the 80% growth in the number of East African innovation hubs.

ASME (The American Society of Mechanical Engineers) helps the global engineering community develop solutions to real world challenges. ASME's Engineering Global Development (EGD) programs strive to improve quality of life by building engineering capacity to solve urgent challenges in underserved communities. In support of this mission, ASME initiated the Innovation Showcase (ISHOW) startup accelerator in 2015 to support hardware innovators whose work improves the quality of life around the world. ISHOW supports startups through competitions hosted regionally in India, United States, and Kenya. In Kenya, ASME has connections with local coaches, hubs, and co-working facilities that complement ASME's knowledge support with physical resources. Since its inception, ASME ISHOW has provided over 180 startups across the globe with seed funding, technical insights, in-kind business development services, and connections to industry experts that provide step-by-step guidance on how to navigate the social innovation ecosystem.

Sustainability and Entrepreneurship

Sustainability has many interpretations from literal to popular. Well known are the UN's 17 Sustainable development goals (SDGs) which list specific gaps to cover on the road to "meeting the needs of the present without compromising the ability of future generations to meet their needs." (UN World Commission on Environment and Development 1983). Reaching sustainability requires accounting for three interconnected aspects: environmental health, social equity, and economic vitality. These comprise the sustainability pillars or the Triple Bottom Line (3BL) for organizations to measure sustainable success. In East Africa, the SDGs often provide inspiration for social entrepreneur's value proposition, however, the 3BL is less often considered in how the value is created and delivered.

Opportunities and Limitations in East Africa

- Environmental sustainability is practiced more often in East Africa due to legislation (Rwanda), lack of options, and its cost effectiveness. However, these practices are rarely measured and may not be maintained in prosperity.

- Interest in funding and investment in Africa is increasing, but the increase in hubs and entrepreneurs seeking funding may be outpacing it (Figure 2). Hubs seek to increase jobs and economic opportunities and thus could collaborate instead of compete. There are also specific funds dedicated to addressing particular industries and SDGs that can allow hubs to co-exist in the search for funding as well.

- Recently, governments have worked to secure ICT resources to mobilize the growing youth population within the digital economy to gain digital prominence. This creates job access and allows East African economies to quickly leapfrog many expansive infrastructure challenges. However, the competitive environment of seeking speed, funding, and prominence may be producing a short-term view within digital innovation. To combat the trend of economic focus, there are opportunities for new business models to consciously address social and environmental impact beyond job creation.

space available for images / figures on next page

introduction (continued): space for images

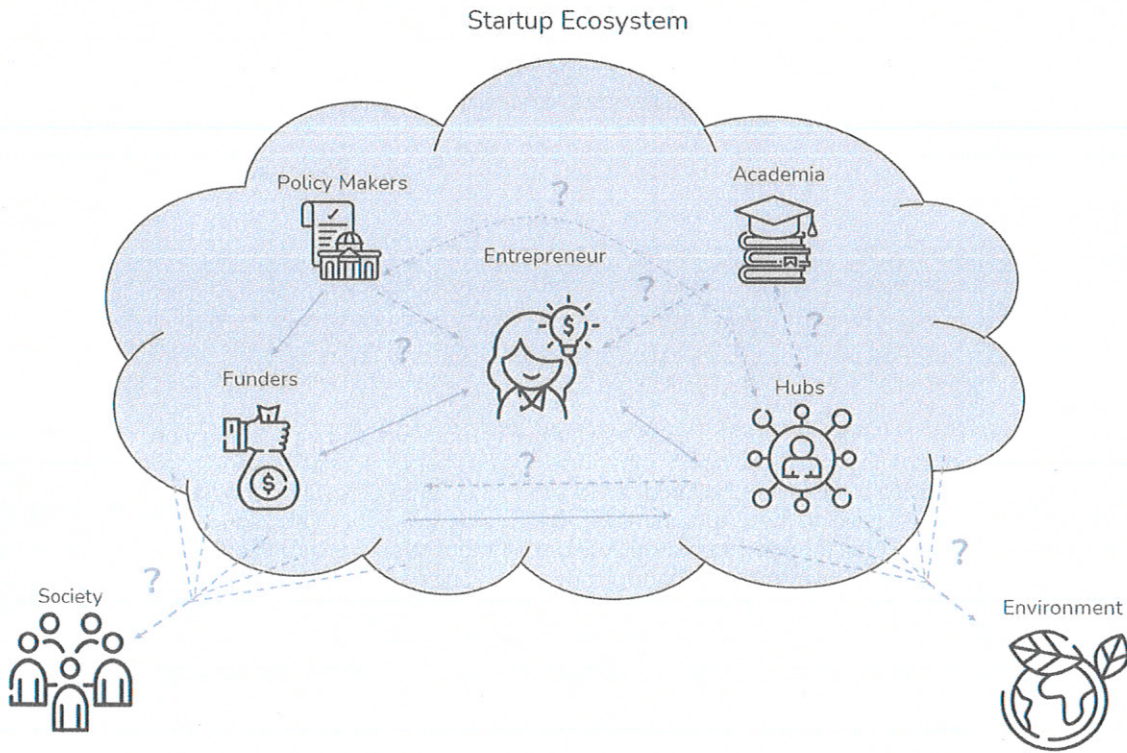


image / figure 1: Startup Ecosystem Stakeholders and Interactions



Summary of Hubs in East Africa			
	2019	2021	Growth %
Kenya	50	90	80%
Uganda	10	23	130%
Rwanda	10	16	60%
Tanzania	23	39	70%
East Africa	93	168	81%
Africa	643	1043	62%

image / figure 2: Summary of Innovation Hub Growth in East Africa (based on Brier Bridges 2019 & 2021)

PROBLEM DEFINITION **

Limit and define the scope and solution space of your project to one that is manageable within one Master Graduation Project of 30 EC (= 20 full time weeks or 100 working days) and clearly indicate what issue(s) should be addressed in this project.

Based on this context, this project will address the following overall research question:

How can innovation hubs in East Africa augment the 3BL sustainability of the startup ecosystem?

Specifically, ASME wants to scale their current social entrepreneurship accelerator, ISHOW, and extend impact via a newly launched incubator, IdeaLab. Through ISHOW, they have a validated methodology – the design and engineering review – and expert network that helps businesses with physical products through the valley of death and a sustainability roadmap framework which they introduce to the cohort at the ISHOW bootcamp. These tools have potential value on their own as well as within their own accelerator program.

As part of its plans to scale and leverage its tools, ASME would like to understand the current entrepreneurial ecosystem and changes since the ISHOW launch in 2015. ASME is currently conducting a longitudinal study of the impact of ISHOW on the accelerated businesses and their economic, environmental, and social development. They are interested in a scale strategy and model that allows them to increase the impact of these programs through reach, design, and/or implementation.

Specific design challenges for ASME within the context of scaling their entrepreneurship support programs are

- Improving the training process and sustainability tools for entrepreneurs
- Identifying pathways to facilitate visibility and scale
- Developing the local engineering workforce through ASME and E4C's startup support programs to align with their core mission

To maintain the scope of work within the 30EC, research will focus on research in Kenya, where ISHOW is currently hosted, and Rwanda. Choosing Rwanda will also allow me to use my knowledge of the local language and culture to facilitate work in addressing the needs of ASME while expanding their impact in the region. To date ISHOW has had only 1 finalist from Rwanda.

ASSIGNMENT **

State in 2 or 3 sentences what you are going to research, design, create and / or generate, that will solve (part of) the issue(s) pointed out in "problem definition". Then illustrate this assignment by indicating what kind of solution you expect and / or aim to deliver. For instance: a product, a product-service combination, a strategy illustrated through product or product-service combination ideas, ... In case of a Specialisation and/or Annotation, make sure the assignment reflects this/these.

I will overview the entrepreneurship ecosystem via stakeholder interviews to identify current and future priorities, and opportunities for hubs to add value to the ecosystem. I will then map and analyze the current training processes from the hub and entrepreneur perspectives. I will capture these insights for all hubs and use them design a strategy for ASME to facilitate the extension of their social entrepreneurship support programs.

I expect to deliver one of the following to facilitate innovation hubs generating sustainable impact among their participants and the communities they serve.

- insights and guidelines for hubs to improve the long term benefits for their participant businesses and the ecosystem
- Journey maps for the hubs interviewed
- Modified journey map /service model iteration for ASME's ISHOW accelerator or Idea Lab

Personal Project Brief - IDE Master Graduation

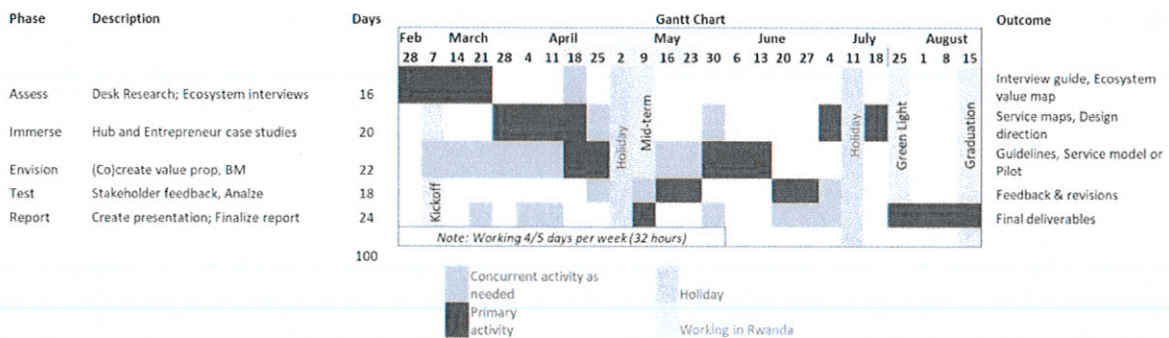
PLANNING AND APPROACH **

Include a Gantt Chart (replace the example below - more examples can be found in Manual 2) that shows the different phases of your project, deliverables you have in mind, meetings, and how you plan to spend your time. Please note that all activities should fit within the given net time of 30 EC – 20 full time weeks or 100 working days, and your planning should include a kick-off meeting, mid-term meeting, green light meeting and graduation ceremony. Illustrate your Gantt Chart by, for instance, explaining your approach, and please indicate periods of part-time activities and/or periods of not spending time on your graduation project, if any, for instance because of holidays or parallel activities.

start date 28 - 2 - 2022

15 - 8 - 2022

end date



Assess: I will perform desk research to understand current research on sustainable innovation and business development. I will use interviews to develop a value map and/or SWOT matrix for the entrepreneurship ecosystem in East Africa.

Immerse: The ecosystem value map will help to identify value opportunities to validate and focus on in interviews with hubs and entrepreneurs. I will then map the entrepreneurship journey from the entrepreneur and hub perspectives

Envision: The insights gathered from all research will result in a value proposition to design an offering for and prototype. This new offering will be refined and tested and in two iterations of co-creation, and user feedback.

Test: Each iteration will include feedback from relevant stakeholders to inform the next improvement.

Report: The final output will be insights or a strategy for hubs and a service or business model for ISHOW.

MOTIVATION AND PERSONAL AMBITIONS

Explain why you set up this project, what competences you want to prove and learn. For example: acquired competences from your MSc programme, the elective semester, extra-curricular activities (etc.) and point out the competences you have yet developed. Optionally, describe which personal learning ambitions you explicitly want to address in this project, on top of the learning objectives of the Graduation Project, such as: in depth knowledge a on specific subject, broadening your competences or experimenting with a specific tool and/or methodology, Stick to no more than five ambitions.

Before coming to TU Delft, I was interested in intra and entrepreneurship. This interest is based on a desire to grow our family bakery and my experience as a technical director in a social enterprise in Rwanda that ultimately failed. Because of this, I wanted to use my graduation project to gain a deeper understanding of entrepreneurship ecosystems and innovation funnels and develop skills to help new businesses survive. Working with an established hub will allow me to see what elements help to foster successful new businesses and what's required to sustain and grow a social endeavor through strategic intrapreneurship.

While gaining in depth knowledge on entrepreneurship in emerging markets, I also hope to experiment further with my method of using journey mapping to inform a market landscape assessment. This tool was initially developed in Context and Conceptualization and could provide value in this project in identifying jobs to be done as well as overlaps and gaps in the entrepreneurship ecosystem. Through this project I also hope to gain experience with engaging users in design through ethnography and/or co-creation processes. I have some experience in this from my prior work however I hope to use these design techniques to help refine my ability to identify unique value propositions that I learned through Build Your Consultancy and Design Strategy Project.

Ambitions:

- Entrepreneurship ecosystems / innovation funnels
- Co-creation processes (C&C)

Prove:

- User Centered Service Mapping (C&C)
- Creating a unique value proposition (DCP)

FINAL COMMENTS

In case your project brief needs final comments, please add any information you think is relevant.

