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SUSTAINABLE ENTREPRENEURSHIP & INNOVATION ECOSYSTEMS (SEI ECOSYSTEMS): SYSTEMATIC MAPPING & RESEARCH INSTRUMENTS

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//INTRODUCTION

Higher education institutions play a crucial role in fostering sustainable development (i.e., *development that meets the needs of the present without compromising the ability of future generations to meet their own needs – harmonizing three interconnected core elements: economic growth, social inclusion, and environmental protection – as defined by the United Nations*). As universities of technology, ENHANCE alliance institutions have actively formed supporting environments for Sustainable Entrepreneurship and Innovation (SEI) through various ways while undertaking the three main university functions (i.e., 1. education, 2. research, 3. community engagement and knowledge utilization). This report is the result of a systematic mapping of different SEI initiatives of the seven universities of ENHANCE. These initiatives include educational programs and courses, research projects and labs, disclosures and technology transfer, incubators and accelerators, idea evaluation and development, start-up and venture formation support, financing and funding, general consultation, and networking, amongst others. All together, these initiatives contribute to creating SEI ecosystems, which we define as “*communities of interconnected and interdependent individuals, organizations, institutions, and processes oriented towards enabling value creation through supporting the development of new innovations and entrepreneurial start-ups with the aim of cultivating sustainable development*”.

This mapping of universities’ SEI ecosystems involved conducting several steps, briefly described below:

1. Based on secondary sources (mainly the official websites of the seven universities), a preliminary list of 40+ SEI initiatives was gathered (Deliverable 2.3 of ENHANCERIA).
2. The list of each university was sent to the relevant contact person(s) at the university, and they were asked to review, modify, and/or extend the list as appropriate. They were also asked to provide the name(s) and contact details of at least one representative (contact person) for each initiative.
3. The previous step led to a list of 80+ SEI initiatives in total, and all their representatives were invited for an online interview. Around a third of those responded positively.
4. Primary data was collected through conducting 30+ semi-structured interviews with SEI initiatives’ representatives with the support of an interview guide (Research instrument 2.1 in this report).
5. Secondary data was collected from different sources (e.g., websites, documents, presentation slides) to supplement the interview data, but also to gain information on other key initiatives which we were unable to interview their representatives.
6. The key insights were summarized using a template that was developed to facilitate organizing the data (Research instrument 2.2 in this report).
7. Summaries were presented in a workshop attended by members of ENHANCE universities (at TU Berlin, 19th October 2022). The aim was to steer discussions and document reflections to provide input for this report and future ENHANCERIA deliverables (e.g., research article about SEI at European universities, which will provide further analysis on issues such as best practice, challenges, and recommendations).

The report consists of two parts; the first presents the mapping of SEI ecosystems and key initiatives in each of the seven universities, and the second presents research instruments that can enable further research on SEI initiatives and practices at universities and assist in evaluating actions and effects.

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1. MAPPING OF SEI ECOSYSTEMS AT ENHANCE UNIVERSITIES

The below table outlines the different initiatives that constitute the SEI ecosystems at ENHANCE universities. This is not necessarily an exhaustive list of every SEI initiative, but the list that has been gathered based on the methodology described above, and the list may possibly be extended. Although the initiatives are categorized into five categories (1. Educational programs and courses, 2. Research centers, programs, and labs, 3. Disclosures and technology transfer, 4. Accelerators, incubators, and funders, 5. Student-led initiatives), it is worth noting that there can be some overlaps. For example, a research center may conduct some educational courses, but for simplicity, it has been put under “research centers” category based on its primary activity. The sections that follow detail each university’s SEI ecosystem and the comprising initiatives.

| | Educational programs and courses | Research centers, programs, and labs | Disclosures and technology transfer | Accelerators, incubators, and funders | Student-led initiatives |
|-----------------|---|---|--|--|---|
| CHALMERS | Chalmers School of Entrepreneurship Tracks Practical Leadership and Entrepreneurship Course Creating New Business Course | HSB Living Lab Swedish Life Cycle Center Northern LEAD Logistics Centre | Chalmers Innovation Office Chalmers Industriteknik | Chalmers Ventures Stena Center Entrepreneurship Village Johanneberg Science Park Lindholmen Science Park Sahlgrenska Science Park | ICM Advice Elumni Chalmers Entrepreneurship Society |
| NTNU | NTNU School of Entrepreneurship MSc Innovation, Society, and Sustainable Development Experts in Teamwork | Centre for Environment-friendly Energy Research Centers for Research-based Innovation | NTNU Technology Transfer AS | Trondheim Tech Port NTNU Discovery 6AM | Spark* NTNU Start NTNU FRAM |
| POLIMI | Master in Sustainability Management and Corporate Social Responsibility Master in Environmental Sustainability and Circular Economy MSc Transformative Sustainability | "Cantieri" for the city of Milan | Technology Transfer Office Spin-Offs Tech4Planet | PoliHub Poli360 Switch2Product Self-financing | Entrepreneurship Club |

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| RWTH | Sustainability in Degree Programs Impact Degree in GreenTech | Center for Circular Economy Undergraduate Research Opportunities Program | Expert Hubs | RWTH Innovation Deep Tech Momentum Sustainability and University Governance Sustainability Fund FairTrade University | Autak – Inclusion through Innovation |
| TUB | M.Sc. Innovation Management, Entrepreneurship, and Sustainability Master in Energy | Chemical Invention Factory | Center for Intellectual Property | Centre for Entrepreneurship The coworking space EINS | TUB Mobility Club |
| UPV | Lifelong Learning Center | Project Management, Innovation and Sustainability Research Center | Office for the Promotion of Research, Innovation and Technology Transfer R&D and Innovation Management Office Orientation for Innovation R&D+i Solutions | IDEAS UPV StartUPV SPIN UPV The Polytechnic City of Innovation Centre for Development Cooperation | Generación Espontánea |
| WUT | Renewables in Business Program Executive MBA Startup Entrepreneurship Courses | Waste Management Innovations for Sustainable Energy Sustain 4.0 Advancing Methodology of Integrated Decision-Making Support for Sustainable Development | Center for Innovation Management and Technology Transfer Innovation Brokerage Department Research and Analysis Department | Innovation Incubator | Enactus PW |

1.1. Chalmers' SEI Ecosystem (Chalmers University of Technology)

Educational programs and courses at Chalmers

Chalmers School of Entrepreneurship

Webpage

<https://www.chalmers.se/en/departments/tme/school-of-entrepreneurship/Pages/SchoolofEntrepreneurship.aspx>

Overview and goals

The Master's program Entrepreneurship and Business Design is also known as Chalmers School of Entrepreneurship. This is an environment where entrepreneurship is experienced and not only taught in classrooms. Here students work with real venture projects during the education and apply their knowledge, creativity, and entrepreneurial ability in real settings. The program combines an internationally acknowledged academic education and research with real value-creation in an entrepreneurial environment. Unlike other Chalmers programs, it's not only open to engineering students but also to students with backgrounds in business, economics, law, science, and design. Students specialize in one of the three tracks: Corporate Entrepreneurship (CORP), Intellectual Capital Management (ICM), and Technology Venture Creation (TECH).

Key activities

The two-year international Master of Science program develops students' entrepreneurial ability through a combination of classroom teaching, simulated business scenarios, and the development of real R&D-based innovation projects. The program structure:

- First semester – Business Creation Lab: the introduction semester contains three integrated courses mandatory for all program participants: Intellectual property strategies, Design of technological innovations and markets, Technology-based entrepreneurship.
- Second semester – offers several recommended electives for different tracks:
 - Applied intellectual capital management (ICM track)
 - Advanced ICM theory (ICM track)
 - Brand management (ICM track)
 - Idea Evaluation (CORP and TECH track)
 - Other elective courses: Brand Management, Knowledge-based business development and management, Managing open innovation and network-based markets, Organizational Behavior, Social innovation, and social entrepreneurship.
- Final year:
 - Corporate Entrepreneurship Track: devoted to a corporate project in combination with writing a one-year master's thesis linked to a corporate partnership.
 - Intellectual Capital Management Track: in the Applied ICM course, students work with real innovation projects across multiple contexts including industry-based, research-based, venture-based, and challenge-based projects. In parallel, there's a course in Advanced Intellectual Capital Management. During the last semester, students write their master's thesis.
 - Technology Venture Creation Track: devoted to a venture project (creation of new ventures together with idea partners) and the master's thesis.

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| Sustainability impact (examples) | The program is action-based, and students work in cross-disciplinary teams together with university-associated stakeholders on a spectrum of innovation projects. Projects are evaluated for their connection to the UN Sustainable development goals (SDGs), and the sustainable impact of project work is intertwined with learning objectives across the curriculum of the program. |
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Tracks

Webpage <https://student.portal.chalmers.se/en/chalmersstudies/tracks/Pages/Tracks.aspx>

Overview and goals An educational initiative that consists of elective courses. Within Tracks, students will learn to collaborate across program boundaries and take on relevant challenges with a basis on real-world problems. Students with different skills can, for example, address systemic challenges in areas such as healthcare, energy, and technology. The initiatives goals are: a) to support the development of new interdisciplinary competences needed for dealing with societal challenges; b) to help students practice working with colleagues from different disciplines; c) to allow students to select different elective courses and form their own education; d) to include new content (e.g., on emerging technologies) in elective courses without going through long formal processes; e) to be an educational facility but also a platform for collaboration between the university and industry (especially for innovation).

Key activities

- Offering elective courses that are open to students of all educational programs (almost 30 courses currently).
- Offering professional courses (executive education) for companies' employees (2 courses currently).
- Providing a learning environment and maker-space (Fuse) for testing and developing new ideas, besides co-creating and exploring together with different societal stakeholders
- Providing labs for experimenting, in collaboration with other societal actors (e.g., Swedish athletes association has a project to test a device).
- Hosting educational workshops with industry.

Sustainability impact (examples)

- The courses focus on societal challenges and aim for preparing students to address them.
- Tracks aim to impact students both at a professional level and personal level (e.g., sustainable behavior and lifestyle).
- The initiative aims to foster an international mindedness by providing different perspectives across nations and cultures so students can work effectively with others to create better solutions.

Practical Leadership and Entrepreneurship Course

Webpage https://student.portal.chalmers.se/sv/chalmersstudier/minkursinformation/Sidor/SokKurs.aspx?course_id=33960&parsergrp=3

Overview and goals The aim of the course is for students to gain insight into and practical experience of

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| | mentoring and entrepreneurial processes. The course takes place both through practice (engaging with external stakeholders as intended customers) and through lectures, self-studies, and self-reflection. |
| Sustainability impact (examples) | One of the course's learning outcomes is enabling students to relate entrepreneurship to sustainable development, gender equality and ethics. |

Creating New Business Course

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| Webpage | https://student.portal.chalmers.se/en/chalmersstudies/courseinformation/Pages/SeArchCourse.aspx?course_id=9446&parsergrp=3 |
| Overview and goals | This course deals with managing business innovation, the creation and development of new, innovative businesses in established and new firms. It aims at giving the students a thorough understanding ("know that" and "know why") of business innovation and initial ability to manage core issues of business creation ("know how"). Particular attention is given to the entrepreneurial side of business development. |

Research centers, programs, and labs at Chalmers

HSB Living Lab

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| Webpage | https://www.hsb.se/hsblivinglab/ |
| Overview and goals | A research and demonstration arena to develop new ways to build and shape the housing of the future. It is a moveable building consisting of 3 floors as housing for students and visiting researchers, and on the ground floor, there are collaboration rooms with offices, conference rooms, showrooms for research projects, and a modern laundry studio. The project tests new technical and architectural innovations and aims to create new knowledge with a focus on social, economic, and environmental sustainability. |
| Key activities | <ul style="list-style-type: none"> • Test bed for researchers. • Providing accommodation for around 40 people, and tenants signed up to be part of the research. • Collaborating with start-ups and research projects. • Sharing knowledge. |
| Sustainability impact (examples) | The focus is on sustainable housing – changing the way we build the houses and live in them. |

Swedish Life Cycle Center

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| Webpage | https://www.lifecyclecenter.se/ |
| Overview and goals | A center of excellence and collaboration platform for academia, research institutes, industry, and government agencies. It fosters competence-building and knowledge |

exchange in advancing and applying the life cycle field, with a multidisciplinary methodology and collaboration between researchers, practitioners, and decision-makers. By bringing together Swedish life cycle competence and front-running companies, it has been instrumental in developing and adopting life cycle approaches within Swedish society and making important contributions to international initiatives. the center consists of a network of some 500 people involved in research projects, working groups (for learning) and expert groups (for impact and influence), training (professionals and higher education) and in networking and communication activities (conferences, webinars etc.).

Key activities

- Research projects: Swedish Life Cycle Center has a scientific base, gained from collaboration between the Center’s partners in cross-sector research projects. It also runs other types of projects, which focus on communication, coordination, and collaboration in strategic joint efforts.
- Working groups and expert groups: the working groups aim to build up competence and exchange experience and information between experts. The groups manage discussions about hands-on issues, methodologies and how to apply them, new research questions and joint strategic intelligence. The center also coordinates expert groups for specific tasks or advisory support.
- Communication and networking activities: workshops, seminars, webinars, trainings and network conferences. These activities are either exclusive to partners or public. For instance, networking activities lead to realizing this operational plan. The center’s communication channels include LinkedIn, Twitter, public and partner-exclusive newsletters, the center’s website and web forum.

Sustainability impact (examples)

- The center’s overall mission is about sustainability and creating the best conditions for its partners to collaborate within.
- The center has collaborative partnership with United Nations Environment Program (UNEP), as well as position in EUs work related to its research field. It also has partnership and network with sustainability leaders and researchers and policy contacts to support the policy part.
- The life cycle perspective is about identifying innovation potential along products’, services’ and organizations’ supply chain/life cycle.

Northern LEAD Logistics Centre

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| Webpage | https://www.chalmers.se/en/centres/lead/Pages/default.aspx |
| Overview and goals | Research and competence center for sustainable logistic solutions, formed by Chalmers University of Technology and the University of Gothenburg in cooperation with the Logistics and Transport Society LTS. The center works as an organizer, facilitator, and disseminator of high-quality logistics research. It supports logistics research and development by connecting academics, companies, authorities, and other organizations. |
| Sustainability impact (examples) | The research center actively contributes to a positive logistics development which will give companies competitive advantages and benefit the society. The focus of this development is the establishment of sustainable, efficient, and effective logistics systems. |

Disclosures and technology transfer at Chalmers

| Chalmers Innovation Office | |
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| Webpage | https://www.chalmers.se/en/collaboration/innovation-and-entrepreneurship/chalmers-innovation-office/Pages/default.aspx |
| Overview and goals | Chalmers Innovation Office supports researchers and students in the innovation process and the transfer of research results into impact on society. The office can also help those from outside the university who want to spread innovations by connecting them with Chalmers researchers. Chalmers' Innovation Office is the hub for innovation advisors at higher education institutions in western Sweden. The collaboration includes the universities in Borås, Jönköping, Halmstad, Skövde and University West. Together, the universities develop the innovation work and create a regional network, with the goal of building a better society. |
| Key activities | <ul style="list-style-type: none"> • Technology transfer. • Innovation and verification advice to students and researchers. • Consultation on commercialization. • Providing some funding for validation (e.g., prototyping). • Information sessions with different departments of the university. • Providing education support and training in innovation and utilization of knowledge. • Providing support for writing applications for funding. • Raising awareness on the innovation ecosystem. |
| Sustainability impact (examples) | <ul style="list-style-type: none"> • Promoting sustainability perspective in ideas development. • Sustainability is key in decision criteria (e.g., they do not fund non sustainable ideas even if they are financially viable). |

| Chalmers Industriteknik | |
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| Webpage | https://chalmersindustriteknik.se/en/ |
| Overview and goals | A research and development organization with emphasis on innovation for a sustainable society. It aims to strengthen Swedish innovation capacity and utilize research. Its mission is to, in collaboration with other actors and based on societal challenges and ongoing research, identify, initiate, and run innovation projects with great potential to contribute to sustainable societal development. |
| Key activities | <ul style="list-style-type: none"> • Technology transfer and handling Intellectual Property. • Collaborating with researchers and staying updated with latest research. • Acting as experts in innovation management and advising researchers on balancing between keeping confidentiality whilst being open to collaboration. • Providing companies and other stakeholders in under-developed fields that require further investigation and supporting them in building a consortium. |
| Sustainability impact (examples) | <ul style="list-style-type: none"> • All projects must have positive contributions to some SDGs, and they actively evaluate that. • Active monitoring of gender and equality aspects. |

Accelerators, incubators, and funders at Chalmers

| Chalmers Ventures | |
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| Webpage | https://www.chalmersventures.com/ |
| Overview and goals | Chalmers' in-house venture creation company. It starts, develops, and finances research and knowledge-based companies. As an incubator and accelerator, it is a non-profit organization. The investment part of the business is profitable with the goal of creating a strong balance sheet to be able to finance tomorrow's growth companies based on an evergreen structure with the aim of creating even better growth for the region and Sweden. In brief, its goal is to identify, support, accelerate, and fund start-ups for a sustainable future. |
| Key activities | <ul style="list-style-type: none"> • Coaching. • Supporting Chalmers School of Entrepreneurship in students' venture creation projects. • Supporting new projects and companies to start up and grow into successful companies (e.g., venture creation program). • Investing in early stages and continuing to have ownership and follow the companies over time. • Hosting seminars. |
| Sustainability impact (examples) | <ul style="list-style-type: none"> • A requirement for companies seeking support to contribute to sustainability (whether as a goal, or in their operations). • Chalmers Ventures is working on developing a method to incorporate sustainability thinking in measuring / evaluating projects. • Vinnova (national funder) requires them to highlight how they contribute to the SDGs. |

| Stena Center | |
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| Webpage | https://www.stenacenter.se/ |
| Overview and goals | Simply put, it is an "office hotel" for renting a place or an office, but also a dynamic center for the development of entrepreneurs with business ideas based on technological innovations. Stena Center's goals are: a) to inspire and enable startups to become viable companies with growth potential that contribute to increased prosperity in the region; b) to help knowledge and ideas to reach the market (commercialization); c) to create a supporting environment that enables networking and co-creating. |
| Key activities | <ul style="list-style-type: none"> • Providing physical space and infrastructure for companies to work flexibly, effectively, and collaboratively, with discounted rates for companies in their early stages (first three years). • Weekly presentations (see Chalmers Entrepreneurship Village). |

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| Sustainability impact (examples) | <ul style="list-style-type: none"> • Attracting companies that are interested in sustainability values. • Marketing sustainable companies to inspire others. • Providing extra discount for non-profit organizations contributing to sustainable development. • Companies must sign that sustainability is within their agenda. • They are collaborating with researchers to discuss how to help companies to further develop their sustainability thinking. |
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| Chalmers Entrepreneurship Village (E-Village) | |
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| Webpage | https://www.chalmersevillage.se/ |
| Overview and goals | A place with opportunities for students, researchers, entrepreneurs, start-ups, growth companies and others interested in collaborating, sharing ideas, and exchanging knowledge. It aims to boost existing organizations and activities by creating an environment and community that is “full of life”, with activities that inspire entrepreneurial thinking, in addition to spreading awareness amongst university’s students and employees. |
| Key activities | Organizing events and activities to enable people to meet and network in different ways (e.g., presentations, socializing, training sessions) – mainly for Stena Center’s tenants and university’s students / employees, but some events are open for public. |
| Sustainability impact (examples) | <ul style="list-style-type: none"> • They have sustainability as an overarching statement “Welcome to Chalmers village for sustainable entrepreneurship and innovation” to emphasize it as a core value. • Sustainability is considered in all their activities and operations (e.g., the food they provide in events). |

| Johanneberg Science Park | |
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| Webpage | https://www.johannebergsciencepark.com/en |
| Overview and goals | Johanneberg Science Park is a neutral, non-profit arena for exchanges of ideas and knowledge between academia, business, and societal actors in the areas of urban development, energy, and materials. As one of six Science Parks in western Sweden, Johanneberg Science Park's activities aim to strengthen the region's attractiveness, competitiveness, and growth potential. Its mission is to offer a hub for knowledge that, both physically and intellectually, attracts many different stakeholders to work together on equal terms for increased competitiveness, renewal and growth. It does this partly by creating broad collaborative initiatives and works actively to establish new demonstration facilities and research projects, but also by developing a vibrant collaborative environment with premises and services that attract both, companies, researchers, students and the general public. Johanneberg Science Park was founded by the Chalmers University of Technology Foundation and the City of Gothenburg, who are currently owners together with a growing partner network of private and municipal companies. |

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| Key activities | <ul style="list-style-type: none"> Acting as an accelerator in the areas of urban development, energy, and materials. Training camps for companies. Seminars and conferences. Supporting researchers and disseminating research results. |
| Sustainability impact (examples) | <ul style="list-style-type: none"> Focusing on projects with sustainable impact on society. Integrating sustainability aspects in urban development. |

| Lindholmen Science Park | |
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| Webpage | https://www.lindholmen.se/en |
| Overview and goals | The science park is jointly owned by Chalmers University of Technology, the City of Gothenburg and the business community. It focuses on two parallel assignments: a) to develop the ecosystem within Lindholmen Science Park's geographical area and the second, b) to run programs and activities promoting innovation and research. It provides a neutral development environment where players from the business community, academia, and society, together can conduct major research and development projects. |
| Key activities | <p>Based on the needs of today's society, Lindholmen Science Park pursues various activities in collaboration projects in transport, ICT, visualization and media, focusing on tomorrow's mobility for people and goods. Programs and projects include:</p> <ul style="list-style-type: none"> AI Sweden: Swedish National Center for Applied Artificial Intelligence CLOSER: Transport and logistic efficiency Drive Sweden: A new approach to mobility ElectriCity: Electrified transport for the future Film & TV: Development in moving media International Youth Think Tank: Promoting a democracy movement among young people in Europe Medier & demokrati: Media innovation and societal research MobilityXlab: Together we bring future mobility closer PICTA: IT and e-health in prehospital care Triple F: Fossil Free Freight Visual Arena: Collaboration within visualization Xperience Next: Transformation of a sustainable experience industry through digitization, business development and technology |
| Sustainability impact (examples) | <ul style="list-style-type: none"> Many projects are sustainability-focused (e.g., projects on electrification, transport efficiency, health and safety). Actively supporting and promoting inclusion and gender equality. |

| Sahlgrenska Science Park | |
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| Webpage | https://www.sahlgrenskasciencepark.se/ |
| Overview and goals | Sahlgrenska Science Park is jointly owned by the Region Västra Götaland (VGR), |

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| | <p>Business Region Göteborg, the University of Gothenburg (through GU Ventures), Chalmers University of Technology and the City of Mölndal. It is an inclusive non-profit open arena for the new world of life science, focusing on health innovation and business acceleration. It connects industry, academia, healthcare, and government, offering an ecosystem for innovators and business to collaborate and grow within. Its objective is to enable a more prosperous society through catalyzing: a) innovation, renewal and competitiveness within life science, b) the start and development of businesses, c) collaboration between universities, industry, hospitals, and health service provider.</p> |
| Key activities | <ul style="list-style-type: none"> • Acting as accelerator and incubator. • Providing office space and collaborative areas. • Organizing events (e.g., webinars and seminars). • Supporting research and dissemination of knowledge. • Providing advice on writing applications for funding. • Idea evaluation and verification. • Connecting startups with investors. |
| Sustainability impact (examples) | <ul style="list-style-type: none"> • The work of the science park is closely connected to societal challenges and aiming for creating social impact (especially better health for people). • Supporting companies in gender equality, diversity, and inclusion aspects. • Advising companies on climate impact. |

Student-led initiatives at Chalmers

| ICM Advice | |
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| Webpage | http://icmadvice.se/ |
| Overview and goals | <p>A non-profit organization, acting as intellectual capital management consultancy group led by graduate students from Chalmers School of Entrepreneurship as volunteers. ICM's goals are: a) to support researchers, start-ups, and SMEs with strategic and practical advice in the field of intellectual property rights, commercialization of research results, and business ideas; b) to help companies in the "intangible" part of driving their business, e.g., secrecy, patents, IP strategy, branding; and c) to create learning opportunities and improve involved students' competence in intellectual capital management.</p> |
| Key activities | <ul style="list-style-type: none"> • Reaching out to companies to offer support. • Providing advice to companies requesting it (free of charge), without taking legal responsibility. • Providing students with real-life cases related to their education. |
| Sustainability impact (examples) | <p>ICM actively targets projects that have high societal impact, and its board has sustainability as an overarching guiding principle.</p> |

Elumni

Webpage <http://www.elumni.se/>

Overview and goals Chalmers School of Entrepreneurship's alumni association. Its goals include: a) exchanging views and experience, b) connecting between industry and alumni, c) creating recruitment opportunities, d) promoting sustainable and social entrepreneurial projects.

- Key activities**
- Creating a community for keeping a dialogue between alumni.
 - Competence development.
 - Networking and exchanging views and knowledge.
 - Meetings oriented towards discussions on relevant themes.

Sustainability impact (examples) Sustainability is a key focus of Elumni, and they actively incorporate it in their discussions on entrepreneurship. They aim to be a platform for sharing alumni's experience in a manner that creates social impact.

Chalmers Entrepreneurship Society

Webpage <https://ces.chs.chalmers.se/>

Overview and goals A student driven society that consists of people willing to explore the world of entrepreneurship and innovation. By arranging workshops, mingles, case nights and competitions, it creates a hub for entrepreneurial students to connect and create.

- Key activities**
- Enabling relations between students interested in entrepreneurship and innovation, while providing a connection to the start-up community in Gothenburg.
 - Inspiring students to use their skills and interests to make their dreams grow.
 - Hosting events.

Sustainability impact (examples) In its vision and mission statements, the society highlights that it welcomes students with "dreams of making the world a little bit better, smarter, and more sustainable".

1.2. NTNU's SEI Ecosystem (Norwegian University of Science and Technology)

Educational programs and courses at NTNU

NTNU School of Entrepreneurship (NSE)

Webpage

<http://entreprenorskolen.no/>

Overview and goals

NTNU School of Entrepreneurship (NSE) is a two-year master's degree program offered by the Department of Industrial Economics and Technology Management at NTNU, with a focus on business development and technology-based entrepreneurship. NSE's vision is to educate the best business developers in the world, and the purpose is twofold: a) to provide a state-of-the-art educational program to students seeking a career within entrepreneurship and commercialization of technology; b) to contribute to the commercialization of ideas from the technology community at NTNU and other innovation communities.

Key activities

The educational model combines theory and practice and offers students the possibility to develop their skills in a real-life context. Students are provided with the infrastructure, resources, and guidance to establish new ventures in parallel with following a full academic workload focused on business development. All students have their workspace in the incubator at NTNU and all projects are supported by a dedicated mentor with senior management or entrepreneurial experience. In addition, projects take advantage of contacts and relationships through NSE's extensive network. Students have access to pre-seed funding and prototype facilities in NTNU workshops and laboratories.

Sustainability impact (examples)

The last five years have seen increased focus on how environmental and social sustainability is considered in different activities during the program. Many examples of actual new ventures that students are presented and work with during their education have an explicit focus on sustainability.

Master of Innovation, Society, and Sustainable Development

Webpage

<https://www.ntnu.edu/studies/mentresam>

Overview and goals

A two-year master's degree program. The program gives insight in the entrepreneur's importance for society's development, and the meaning of social context for entrepreneurship. The study gives insight in the classical research tradition related to entrepreneurship, and new forms of entrepreneurship that receive extensive attention today (for instance social and cultural entrepreneurship), and new forms of restructuring (like "green" culture-based development). The master's program also gives knowledge about entrepreneurship as an interdisciplinary field of research. It provides insight in how concepts like entrepreneurship, creativity, innovation, and restructuring are connected. The aim is that the student will be able to understand the relations between entrepreneurship, local and regional restructuring processes, urban and rural development and regional and innovation politics.

Experts in Teamwork (EiT)

Webpage <https://www.ntnu.edu/eit>

Overview and goals Experts in Teamwork (EiT) is a master's degree course in which students develop their interdisciplinary teamwork skills. The course is compulsory for all students in master's programs and programs of professional study at NTNU.

Sustainability impact (examples) In the final project report, students reflect and consider the benefits of the project to society and discuss how it could be taken further.

Research centers, programs, and labs at NTNU
Centre for Environment-friendly Energy Research (CEER)

Webpage <https://www.ntnu.edu/research/centre-for-environment-friendly-energy-research>

Overview and goals The center develops technology in renewable energy and Carbon Capture and Storage (CCS) with potential for value creation. NTNU hosts three CEER:

- Norwegian Research Centre for Hydropower: Technology develops research and education in hydropower technology.
- Norwegian Centre for Energy Transition Strategies: investigates environmentally friendly energy from a social science perspective.
- Zero Emission Neighborhoods in Smart Cities: develops solutions for future buildings and areas.

Centers for Research-based Innovation (CRI)

Webpage <https://www.ntnu.edu/research/centre-for-research-based-innovation>

Overview and goals The centers build and strengthen collaboration between research institutions and R&D intensive companies. NTNU hosts 12 CRI, including for example:

- Centre for Geophysical Forecasting: works with geophysical forecasting and sustainable use of the resources.
- Centre for sustainable and competitive metallurgical and manufacturing industry: has research on physical metallurgy for the metal industry.
- Sustainable Arctic Marine and Coastal Technology: develops technology for exploration and exploitation of the Arctic region.

Disclosures and technology transfer at NTNU
NTNU Technology Transfer AS

Webpage <https://www.ntnutto.no/home/>

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|---------------------------|---|
| Overview and goals | NTNU Technology Transfer AS is owned by the Norwegian University of Science and Technology (NTNU) and Helse Midt-Norge RHF (HMN). The purpose of TTO is to secure, manage, develop, market and sell rights of use and property rights to knowledge, ideas, inventions and other intangible values created by NTNU and HMN. TTO is NTNU's and HMN's strategic tool for generating "benefit from research". At the most basic level, its aim is to spread technology and knowledge. Commercialization is the tool for doing that. In this way, the research benefits society in the form of new products, new services, new industries, and new jobs. |
|---------------------------|---|

Accelerators, incubators, and funders at NTNU

| Trondheim Tech Port | |
|---|---|
| Webpage | https://www.trondheimtechport.no/ |
| Overview and goals | Trondheim Tech Port is a member-based organisation working to increase Norway's innovation output. Its focus areas are oceans, health, energy, and digitalization. Trondheim Tech Port is working to establish Trondheim's Innovation District in connection with the Campus development project ongoing in the Elgeseter gate area. Its goal is to increase Norway's innovation power through closer cooperation, starting with actors in Trondheim. |
| Key activities | Facilitating innovation and technology through projects, events, and communication. |
| Sustainability impact (examples) | Sustainability is a key focus in their activities and projects. The slogan of Trondheim's Innovation District is "A world-class innovation district, for a sustainable future". |

| NTNU Discovery | |
|---------------------------|--|
| Webpage | https://ntnudiscovery.no/en/home/ |
| Overview and goals | It provides support for development, verification and quality assurance of ideas and projects that have the potential to be commercially viable. It supports outstanding ideas based on concrete research results from university employees and students at NTNU/Helse Midt-Norge. It also provides financial support in a phase where few others are willing to invest money. |

| 6AM | |
|---------------------------|--|
| Webpage | https://www.6am.no/ |
| Overview and goals | Accelerator for knowledge-based start-ups, offering funding, networking, and incubator space in central Trondheim. |

Student-led initiatives at NTNU

Spark* NTNU

Webpage <https://www.sparkntnu.no/>

Overview and goals A free mentoring service for students who want to develop an idea or want to be part of a start-up company. Spark was established as a collaborative project between TrønderEnergi and NTNU. Spark* is organized as a student-run service.

Start NTNU

Webpage <https://www.startntnu.no/>

Overview and goals Student organization that works to inspire students to try their hand at innovation and entrepreneurship.

FRAM

Webpage <https://www.framntnu.no/>

Overview and goals The students' own center for innovation. It is a meeting place for NTNU's students who are interested in innovation and entrepreneurship.

1.3. PoliMi's SEI Ecosystem (Politecnico di Milano)

Educational programs and courses at PoliMi

International Master in Sustainability Management and Corporate Social Responsibility

Webpage <https://www.gsom.polimi.it/en/course/international-master-sustainability-management-csr/>

Overview and goals With this Master, students will learn how to manage a sustainable company from the fundamentals: starting from the overarching questions of why a company should be sustainable, working through the main changes needed in order to manage a sustainable company, right up to a sustainable function. Students will also learn how to manage sustainability projects from a strategic, entrepreneurial, organizational, and technological perspective.

International Master in Environmental Sustainability and Circular Economy

Webpage <https://www.gsom.polimi.it/en/course/international-master-environmental-sustainability-and-circular-economy/>

Overview and goals With this Master, students will acquire the ability to set up a sustainability-oriented strategy, with particular reference to circular economy and energy management. Students will also learn how to successfully design sustainable products, thus managing a “sustainable” company with the need to evolve towards a more sustainable and circular-economic model.

MSc Transformative Sustainability

Webpage <https://www.polimi.it/en/international-prospective-students/laurea-magistrale-programmes-equivalent-to-master-of-science/programme-catalogue/transformative-sustainability>

Overview and goals Two of Italy's most prestigious universities, Bocconi and Politecnico di Milano, have joined forces to prepare new professionals in the field of transformative sustainability. The two-year program, entirely taught in English, is based on a complementary blend of their strengths: Politecnico brings knowledge on the most advanced technologies and an engineering approach to design, innovate and manage sustainable systems. Bocconi shares its expertise on the strategic and economic aspects of sustainability. This cutting-edge program combines fields in technology (technologies for the environment, energy, mobility and circularity) with the fields in the social sciences (management, economics and quantitative and legal disciplines) that are needed to manage a just sustainable transition within organizations.

Research centers, programs, and labs at PoliMi
"Cantieri" for the city of Milan

Webpage <https://www.polimi.it/en/social-impact>

Overview and goals The "Cantieri" are practical projects shared with the city of Milan: initiatives with and for the city aimed to make Milan increasingly appealing. They are open laboratories devoted to innovation and research involving the best realities of the territory (bodies, institutions, enterprises) relating specifically to relevant technological themes: industry 4.0 (competence center with MISE); smart cities (5G with Vodafone and the Municipality of Milan); health (Human Technopole); the frailty of the territories (projects for urban recovery with the municipality); cultural heritage (Fabbrica del Duomo).

Disclosures and technology transfer at PoliMi
Technology Transfer Office (TTO)

Webpage <https://www.polimi.it/en/scientific-research/research-at-the-politecnico/technology-transfer/staff-and-contacts>

Overview and goals The Technology Transfer Office (TTO)'s mission is to help generate and manage the Politecnico di Milano's intellectual property and to support inventors in exploiting their research activity and bringing it to the market, to help develop products or services that improve day-to-day life, to create further innovation and to generate returns to be reinvested in academic research. In addition to its core activities, the office is particularly active in technology transfer through initiatives such as start-up support programs as well as TRL enhancement initiatives in collaboration with the Ministry of Economic Development, in order to support the advancement of industrial property titles. It also actively participates in international technology transfer networks and open innovation streams.

Key activities

- Prior art search.
- Intellectual Property Management from the patent filing to its valorization.
- Intellectual Property exploitation through licensing.
- Industry collaborations.
- Spin-off generation.
- Seminars and workshops.

Sustainability impact (examples) Most supported start-ups have sustainability angle., and they are required to be compliant to sustainability measures.

Spin-Offs

Webpage <https://www.polimi.it/en/scientific-research/research-at-the-politecnico/technology-transfer/spin-off>

Overview and goals New high-tech enterprises aimed to transform the scientific and technological know-how into innovations that can be exploited from a commercial viewpoint through the realization of products or services. The Poli360 and Tech4Planet funds have been set up to support entrepreneurial projects and stimulate the collaboration of corporate partners. The aim is to impart both the internationality and scalability from the very outset of the spin-offs' lifecycle, and to best support entrepreneurial success.

Tech4Planet

Webpage https://www.cdpventurecapital.it/cdp-venture-capital/it/dettaglio_comunicato.page?contentId=COM2073

Overview and goals Tech4Planet is the second national technology transfer hub of CDP Venture Capital SGR, set up in collaboration with the Politecnico di Milano, together with the Politecnico di Bari and the Politecnico di Torino, with the aim of developing and bringing to market projects created within the laboratories of universities and research centers in the proof-of-concept (PoC) and seed phases in the energy tech, sustainable manufacturing, smart mobility, circular economy, and water management sectors.

Accelerators, incubators, and funders at PoliMi

PoliHub

Webpage www.polihub.it

Overview and goals The Startup District & Incubator of Politecnico di Milano. It is a place to enhance ideas, transforming them into an entrepreneurial project. PoliHub is addressed also to well-established high-tech firms, offering the possibility to share knowledge and to access the network of the university for the launching of new entrepreneurs. It is managed by Fondazione Politecnico di Milano.

Key activities

- Incubation and acceleration: supporting startups through targeted technology management strategies, incubation paths, and acceleration programs, helping startups access knowledge, enter the market, and connect with investors.
- Open innovation services: working alongside Italian and multinational companies on the lookout for new products, services, and business models, backed by close association with startups.
- Smart working services: offering smart working environment that meets the needs of professionals, startups, and companies, a “phygital” location where they can concentrate on their core business of innovating, experimenting, and developing their market.

Poli360

Webpage <https://www.polilink.polimi.it/en/poli-360/>

Overview and goals The new investment fund – the only one of its kind in Italy – that hinges on the university’s research potentialities and fields of competence, as well as on the Technology Transfer Platform managed by the TTO and the incubator PoliHub. The investments support the development of high technology projects and start-ups – based on research and intellectual property.

Switch2Product

Webpage <https://s2p.it/>

Overview and goals Switch2Product is the program of entrepreneurial empowerment organized by PoliHub, the Politecnico di Milano’s Technology Transfer Office and Deloitte’s Officine Innovazione. S2P gives participating projects the unique opportunity to accelerate their technological and market validation phases, paving the way for the creation of new start-ups. The challenge helps the most revolutionary innovative, scientific and technological solutions grow, as well as adding value to the most promising business projects by Politecnico di Milano’s University students, researchers, Ph.D. candidates, professors and alumni.

Self-financing

Webpage <https://www.polimi.it/en/companies/support-politecnico-di-milano>

Overview and goals Politecnico di Milano offers companies the possibility to provide financial support for its students and activities. The Fundraising Office helps companies define their investments in line with their Corporate Social Responsibility goals. PoliMi offers companies the opportunity to: a) fund scholarships for very deserving undergraduate, postgraduate, Master and PhD students; b) donate useful goods or services to enable Politecnico di Milano to perform its teaching and research activities give financial aid to build, renovate or maintain the facilities of Politecnico di Milano. The Fundraising Office will help companies identify the tax advantages granted for each different solution proposed. Companies will be then included in the pool of donors and will thus have visibility on www.sostieni.polimi.it, the website whereby Politecnico di Milano officially thanks its donors.

Student-led initiatives at PoliMi

Entrepreneurship Club PoliMi (E-Club)

Webpage <https://www.eclubpolimi.it/>

Overview and goals A student-led club that brings together future and established entrepreneurs who strive to make an impact. E-Club’s work focuses on providing their ecosystem with opportunities for connection and ideas contamination.

Key activities

- Startup challenge: a two-weekend entrepreneurship event and competition.
- Organizing events, workshops, and meetings engaging speakers, entrepreneurs, and experts of the startup ecosystem who share their stories

and knowledge.

- Networking and enabling students to share their ideas and get in touch with future partners with different skills and backgrounds.
- Supporting putting ideas into practice.

1.4. RWTH's SEI Ecosystem (Rheinisch-Westfaelische Technische Hochschule Aachen)

Educational programs and courses at RWTH

Sustainability in Degree Programs

Webpage <https://www.rwth-aachen.de/cms/root/Die-RWTH/Nachhaltigkeit/Nachhaltigkeit-in-der-Lehre/~wkrdz/Nachhaltigkeitsbezug-in-Studiengaengen/lidx/1/>

Overview and goals Many degree programs at the university specifically deal with sustainable development in their curriculum. To determine the sustainability aspects dealt within the courses of study, the faculties were asked for a self-assessment of their "sustainable degree programs". It became clear that all Sustainable Development Goals of the 2030 Agenda are addressed in the different degree programs at RWTH, with the following SDGs particularly focused upon: 7 – Affordable and Clean Energy, 13 – Climate Action, and 9 – Industry, Innovation, and Infrastructure. Work is currently underway to systematically record how each degree program offered at RWTH addresses sustainability.

Impact Degree in GreenTech

Webpage <https://www.tomorrow.university/open-programs/non-degree-programs/greentech-impact-degree>

Overview and goals During the Impact Degree in GreenTech program, a student will learn about science-based technology, ideas, and methodologies to solve the biggest challenges the global community faces in a dedicated community of change makers. The aim is to "build the solutions to reverse the effects of human activity on the environment".

Research centers, programs, and labs at RWTH

The Center for Circular Economy (CCE)

Webpage <https://www.cce.rwth-aachen.de/cms/CCE/~othkk/Das-Center/lidx/1/>

Overview and goals CCE bundles the expertise of all faculties of the university on sustainable circular economy. Trans- and interdisciplinary methods are developed for the process optimization of the three main areas of the CCE: sustainable product design during production, business models during product use, and material recovery during product recycling. Together with research, industry, politics, and the population, the CCE is developing innovative solutions for circular value creation of the future. The center brings all the expertise from more than 250 institutes together, position and work on circular economy on a higher level beyond individual institutes.

Key activities

- Research on CE: bringing together expertise from within the university plus external stakeholders.
- Acting as a mesh/mediator for networking internal and external stakeholders (e.g., industry, institutes, cities, politicians).

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| | <ul style="list-style-type: none"> Supporting startups and entrepreneurs: supporting CE initiatives and providing consultation. Awareness raising for the topic of CE. Education and/or training: running workshops and seminars. |
| Sustainability impact (examples) | <ul style="list-style-type: none"> Promotion of the 9 / 10 Rs (recycling, rethinking, reusing, remanufacturing, repairing, refurbishing, etc.) Drawing on the 17 SDGs and promoting them. |

The Undergraduate Research Opportunities Program (RWTH UROP)

| | |
|---|---|
| Webpage | https://www.rwth-aachen.de/cms/root/studium/Im-Studium/Angebote-fuer-Studierende/UROP/~rps/RWTH-UROP/lidx/1/ |
| Overview and goals | The program offers students the chance to undertake their own research projects in an RWTH research team at the University's institutes and chairs very early on during their studies. The program's main goal is to promote international research (exchange) and real firsthand research. A particular focus of this program line is sustainability, in alignment with the United Nations' 17 Sustainable Development Goals (SDGs). |
| Sustainability impact (examples) | <ul style="list-style-type: none"> Added a program line for students to conduct research internships in the field of sustainability specifically (making SDG related research more visible). Social sustainability: <ul style="list-style-type: none"> scholarships for catering groups with disabilities. Actively maintaining gender diversity (students are 1/2 male/female). Attracting international students from economically difficult backgrounds. |

Disclosures and technology transfer at RWTH

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|---------------------------|--|
| RWTH Expert Hubs | |
| Webpage | https://www.rwth-innovation.de/en/expert-hubs |
| Overview and goals | The RWTH Expert Hubs complement our coaching programs by representing topic-specific platforms for start-ups and entrepreneurial minds to network, develop, and grow. To do so, we leverage the entire RWTH Aachen University network and connect you with RWTH research experts and fellow founders to discuss your most pressing challenges with regards to sustainability, resources, life science, digitized hardware etc. |

Accelerators, incubators, and funders at RWTH

RWTH Innovation

Webpage <https://www.rwth-innovation.de/en/home>

Overview and goals The center serves as a key contact for those interested in setting up their own business and offers a wide range of start-up advising, coaching, and workshops. It also provides access to specialist incubators and a strong network for founders. The center is a cooperation between the RWTH Innovation GmbH – a subsidiary of RWTH and key contact for technology transfer and entrepreneurship – and the School of Business and Economics. The offerings for founders support the process to creating a successful start-up. The center also provides funding with venture capital or government grants in early-stage prototypes (as an internal competition).

- Key activities**
- To Get Started: learning and connecting to know the basics and get inspired.
 - Ideation Program: developing the idea towards a promising, convincing business model.
 - Incubation Program: prototyping and scaling – helps entering the market.
 - International Entrepreneurship Office: supports international students who want to start their business in Aachen.
 - Innovation Sprint: validating start-up ideas.

Sustainability impact (examples) Most of the startups have a grounded sustainability aspect, whether social/ecological or technological.

Deep Tech Momentum

Webpage <https://www.deeptech.build/>

Overview and goals Deep Tech Momentum is the go-to opportunity for all innovators and entrepreneurs from leading European universities and companies to accelerate and grow their businesses, ideas, and connections. Over four days, it will provide to deep tech founders: Founder matching opportunities, business building mentorship, and funding advice.

- Key activities**
- Accelerating early-stage Deep Tech start-ups.
 - Connecting Deep Tech enthusiasts with already built teams, and potentially build new bigger teams.
 - Workshops, keynotes, intense mentor madness sessions, and panels.

- Sustainability impact (examples)**
- Accelerating Deep Tech business models that could change the future- e.g., new ways of mobility, reduction of air pollution.
 - Aiding teams speed up their ideas that creates a sustainability impact.

Sustainability and University Governance Staff Unit

Webpage <https://www.rwth-aachen.de/cms/root/Die-RWTH/Einrichtungen/Verwaltung/Stabsstellen/~ifpc/Nachhaltigkeit-und-Hochschulgovernance/?lidx=1>

Overview and goals The unit coordinates all activities concerning the overarching topic of sustainability, which is relevant across the entire University. This includes acting as a central point of contact for all questions relating to the topic, but also coordinating measures to make the University's activities in teaching and learning, everyday operation, knowledge transfer, and the relevant social aspects resulting from this, sustainable in the long term. • The unit's goals are: a) to drive development process towards a more sustainable RWTH; b) to pool existing sustainability structures, projects, and initiatives and to coordinate and promote their implementation.

Key activities

- Providing support to university management, and coordinating (sustainability) initiatives.
- Initiating and supervising sustainable development projects such as:
 - GreenTeams ('teaching', 'research', 'operations')– means of accounting for expertise and impetus for sustainability and its progress at the university.
 - Sustainability RoundTable – student platform.
 - RWTH's internal sustainability network.
- Overseeing the Sustainability Fund – supports projects contributing to sustainable operations (see below).
- Part of "FairTrade University" steering group (see below).
- Launched a digital sustainability map for RWTH.
- Creating and publishing the University's Sustainability Report.

The Sustainability Fund

Webpage <https://www.rwth-aachen.de/cms/root/Die-RWTH/Nachhaltigkeit/Nachhaltigkeit-im-Betrieb/~tczhk/Nachhaltigkeitsfonds/lidx/1/>

Overview and goals The university has established the Sustainability Fund as it wishes to structure its operations in the future in such a way that resource consumption is reduced, and that climate neutrality is promoted. Furthermore, it wants to ensure that responsible, inclusive cooperation is promoted and carried out even more intensively. The Fund shall support projects that contribute to sustainable operations, such as: the reduction of energy, material or water/wastewater consumption, exhaust air and waste reduction, nature conservation measures, projects that encourage behavioral change among university members in the spirit of sustainability.

FairTrade University

Webpage <https://www.rwth-aachen.de/cms/root/Die-RWTH/Nachhaltigkeit/Nachhaltigkeit-im-Betrieb/~sawiz/Fairtrade-University/lidx/1/>

Overview and goals RWTH's "FairTrade University" status makes the university's commitment visible; it contributes to sustainable development and takes responsibility for the impact of its own consumption in international growing regions. The initiative has strengthened sustainability awareness, but also intensified regional and national networking. Furthermore, the initiative includes a funding program that provides financial support to projects and measures that strengthen and promote the topic of FairTrade.

Student-led initiatives at RWTH

Autak – Inclusion through Innovation

Webpage <https://autak.org/en/>

Overview and goals With its slogan “we are reinventing the wheel”, the student-led project focuses on accessibility through developing hardware, software, and awareness. The project is developing a new type of wheel for a portable and stair-climbing wheelchair.

1.5. TUB's SEI Ecosystem (Technische Universität Berlin)

Educational programs and courses at TUB

M.Sc. Innovation Management, Entrepreneurship, and Sustainability (IMES)

Webpage <https://www.tu.berlin/en/studying/study-programs/all-programs-offered/study-course/innovation-management-entrepreneurship-and-sustainability-m-sc>

Overview and goals In this international and interdisciplinary master's degree program, students learn about the fundamental principles of innovation management, entrepreneurship, and sustainability. This includes issues on operative, tactical, and strategic levels relevant to founding new businesses or working in R&D. The curriculum encompasses relevant social, economic, and social science issues from theory and practice. Integral part of the master program is the mandatory study abroad as it allows students to challenge themselves academically and personally by experiencing different approaches to topics from their major and making connections with staff and students from other cultures.

Key activities

- **Modules:** The master's degree program IMES consists of modules covering the three major fields inherent to the program. Some modules combine elements of each, whereas other are more specific to one area. Teaching and Learning methods often include various formats like lectures, practical tutorials, seminars, and practical projects. Team projects and presentations are common in most of the modules.
 - **Compulsory courses (30 ECTS):** Venture Campus, Innovation Economics, Strategic Management, Entrepreneurship Research.
 - **Elective courses (30 ECTS):** It is required that at least 6 ECTS are achieved in each of the respective areas: Innovation (6), Entrepreneurship (6), Sustainability (6), and the remaining (12) can be selected as desired.
- **Stays abroad:** A study abroad is mandatory and takes place starting in the third semester after completing 60 ECTS at TU Berlin. Following the double degree track and deciding to study abroad at a partner University has several benefits. Besides enjoying a first-class education from reputable European schools and shared study experience among cohort classmates, the existing relationships at the partner universities facilitate quick integration into the university structures and social groups, enabling students to focus on their studies and cultural immersion.

Sustainability impact (examples)

- Graduates apply sustainability perspectives and tools in their workplace.
- The program cultivates a sustainability-oriented mindset.

Master in Energy (TU Euref-Campus)

Webpage <https://master-in-energy.com/>
<https://euref.de/en/entry/tu-campus-euref-ggmbh-2/>

Overview and goals The TU Euref-Campus is an interdisciplinary institution that provides executive educational programs, consultancy and expert knowledge focused on the main topic sustainability and sustainable entrepreneurship. All offered MBA programs strongly

propel entrepreneurial thinking. In terms of content, the focus is on the transformation process from fossil energy concepts to concepts based on regenerative energy. The programs offered are:

- Energy Law MBL
- Building Sustainability MBA
- Energy Management MBA
- Mobility Management MBA

Research centers, programs, and labs at TUB

Chemical Invention Factory (CIF)

Webpage <https://www.chemicalinventionfactory.com/>

Overview and goals The CIF provides laboratories for students and scientists for projects and pre-founding activities in life science. In addition, the CIF together with CfE offers a micro-credential in “Sustainable Entrepreneurship” and many university-industry cooperation in “Green Chemistry”.

Disclosures and technology transfer at TUB

The Center for Intellectual Property ZfgE

Webpage <http://www.zfge.tu-berlin.de/>

Overview and goals The center is Technische Universität Berlin’s main point of contact for all the university’s inventors as well as researchers from other institutions and interested parties from business. Technology transfer is a way to ensure that the university’s research findings benefit both business and society.

Key activities

Patenting of inventions

- invention processing
- patenting process
- patent administration

Cooperation with industry, business, and research institutions

- licensing of technologies
- research assignments
- patent sale

Science in the field of technology and intellectual property law

- conferences and meetings
- basic research and legal research accompanying technical projects
- teaching and training

Accelerators, incubators, and funders at TUB
Centre for Entrepreneurship (CfE)

Webpage <https://www.tu.berlin/entrepreneurship/>

Overview and goals The center provides start-up support and technology transfer, aiming for “High-Tech Spin-Offs with Triple Impact for a Sustainable Future”. At the interface between university, business and startups, entrepreneurship with triple impact - economic, social, and ecological - is taught, researched, and put into practice. The goals of the center are: a) to be “one stop shop” for supporting entrepreneurship, b) to support entrepreneurship education, research, and practice, c) to foster an entrepreneurial culture within the university (in different departments) and in society, d) to foster triple bottom line thinking (people, planet, profit), e) to support graduates who choose to go for venture creation path as career, f) to create a community to connect different stakeholders.

- Key activities**
- Providing advice, consultancy, and support in venture creation and startups
 - Connecting startups with professors as mentors
 - Act as an incubator and provider of practical personalized support (e.g., legal and financial checks)
 - Providing grants for starting a new venture and / or prototyping, besides supporting entrepreneurs in applying for local, national, and EU funding.
 - Providing co-working spaces
 - Supporting technology transfer through bridging between research and industry
 - Facilitating educational programs (MSc Innovation Management, Entrepreneurship, and Sustainability + MSc ICT Innovation)
 - Holding alumni network

- Sustainability impact (examples)**
- Sustainability focus is embedded in the center’s vision and mission
 - The center supports startups and technology development to think of the environmental and social sustainability impact and take system thinking perspective
 - The center helps students to think about the SDGs and broader solutions
 - More emphasis on sustainable business models and triple bottom line since 2017

The coworking space EINS

Webpage <https://www.tu.berlin/en/topics/entrepreneurship/2020/mai/eins>

Overview and goals The coworking space is dedicated to start-ups and makes a major contribution to raising public awareness of the university’s support for new business ventures. Entrepreneurship, Innovation, Network, Sustainability. This acronym, which also spells out in German the center’s address at Ernst-Reuter-Platz, reflects the vision which the university wishes to pursue at its new start-up center EINS on the Charlottenburg campus. The center focuses on innovative start-ups, networking with key players in

Berlin and sustainability. Start-ups with social and ecological impact as well as an economically viable business model are provided with support for the early stages of their development. EINS also provides an excellent infrastructure.

Student-led initiatives at TUB

TUB Mobility Club

Webpage <https://tubmobility.club/>

Overview and goals The TUB Mobility Club is a platform for thinkers and doers in Sustainable Mobility space. It includes a diverse group of students from various parts of the worlds, with different background and experiences, voluntarily engaged to keep the momentum towards solving mobility challenges of the world. The club bridges the gaps and connects its members by keeping them engaged in discussions, knowledge sharing, initiatives for incubation of ideas, analyzing market trends, and collaborating to define solutions that the society needs today.

Key activities The club's list of activities in the Sustainable Mobility Domain:

- Mobility Cafe: knowledge-sharing physical or online meetings with all members once a month with a Coffee/Beer Mug to share views and updates.
- Let's Discuss..!l: the club's most important calendar event in a month, where they schedule a discussion on a topic with views from experts in the market along with a detailed Q&A Session.
- Hackathons: the club hosts hackathons as it believes that a sense of competition and reward help accelerate and convert ideas into reality. The club take up various challenges that the industry/society faces and implement ideas to find suitable solutions.
- Mobility reports: the club's members engage in writing reports on market status, technology, policy initiatives, and building scenarios to build a strong knowledge base.
- Webinars: for knowledge sharing and keeping updated with the latest trends.
- Company visits: to enhance real-life experiences.

1.6. UPV's SEI Ecosystem (Universitat Politècnica de València)

Educational programs and courses at UPV

Lifelong Learning Center

Webpage <https://www.cfp.upv.es/formacion-permanente/>

Overview and goals The center manages the non-regulated training activities and projects promoted by the university such as; promoting and collaborating with the departments, centers, institutes and other bodies in the creation and development of training projects, facilitating its dissemination and promotion. It offers a variety of courses such as business management and social responsibility, business innovation, creativity, and entrepreneurship.

Sustainability impact (examples) Many of the offered courses has a sustainability focus, such as “Business Management and Social Responsibility” course.

Research centers, programs, and labs at UPV

Project Management, Innovation and Sustainability Research Center (PRINS)

Webpage <https://prins.upv.es/>

Overview and goals The center’s mission is to contribute to the advancement of knowledge in the areas of project management, innovation, and sustainability, interacting with the national and international scientific community, developing a quality, rigorous, efficient, ethical and sustainable scientific activity that can be transferred to society. All this, with the aim of promoting the integral development of society and contributing to its progress, through the generation of knowledge and its transfer to the social and economic agents in its environment.

Key activities

Projects with companies:

- life cycle analysis to obtain the EPD linked to the activity developed by baleària eurolines marítimas s.a. at the terminal of the Valencia port
- ecoport iii: study and statistical analysis of the levels of eco-efficiency of valenciaport and strategic definition of the roadmap for its improvement
- update of GHG inventory and carbon footprint of the port of Valencia
- tires out of use (TOU): tech mining, extended producer responsibility (EPR) and circular economy
- advice and technical assistance in the implementation of energy, environmental, quality and GHG management systems, according to iso 50000, iso 14000, iso 9000 and iso 14064

R+D+i projects:

- new methodologies in the analysis of thermal comfort and energy efficiency in buildings with 5d models
- identification and environmental and economic analysis of the activities with the greatest potential of symbiosis between the companies that constitute

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|---|---|
| | <p>valenciapor</p> <ul style="list-style-type: none"> proposal and communication of circularity indicators to guide the consumer on repairing or replacing their electrical and electronic appliances. development of a tool |
| Sustainability impact (examples) | <p>The line of research in Sustainability is transversal to the rest of the research activity developed by PRINS. The members of the center aim their research at the development of innovative, resource-efficient projects and processes that help the industry to improve the offer of products it puts on the market, while reducing its environmental impact, always seeking the triple bottom line between environment, economy, and society.</p> |

Disclosures and technology transfer at UPV

| Office for the Promotion of Research, Innovation and Technology Transfer (i2T) | |
|--|---|
| Webpage | https://www.upv.es/entidades/I2T/index-en.html |
| Overview and goals | The office's mission is the general promotion of R&D&i at the university, and the protection and transfer of its research results. |
| Key activities | <ul style="list-style-type: none"> Promotion of activities and opportunities for collaboration in R&D+I. Registration and protection of R+D+I results. Negotiation and formalization of agreements related to the transfer of technology. Preparation of reports and statistics on R&D activity at UPV. |
| Sustainability impact (examples) | <ul style="list-style-type: none"> They take sustainability issues into account in their collaborations. Supporting Valencia Municipality with its goal to become carbon neutral and connecting them with researchers. Currently preparing an initiative for social innovation. |

| R&D and Innovation Management Office | |
|--------------------------------------|---|
| Webpage | https://www.upv.es/entidades/SGI/index-en.html |
| Overview and goals | The office aims to support and strengthen the coordination and execution of the administrative-economic management processes of research, innovation, and knowledge transfer activities at the university. |
| Key activities | <ul style="list-style-type: none"> Support for the formalization of subsidized R+D+i activities. Support for the formalization of R+D+i contracts and agreements. Economic-administrative support of R&D agreements, contracts, and grants. Management of research structures. Advice and monitoring of scientific events. |

The Orientation for Innovation Unit of the Valencian Business Confederation (UNOI)

Webpage <http://enclave.cev.es/unoi/>

Overview and goals It promotes the relationship between the university and Valencian companies, with the aim of promoting the integration of R&D and innovation in SMEs, and thus contribute to improving their competitive position.

Key activities

- Receiving requests for information from Valencian businesses and channeling them, to the corresponding agents within the UPV.
- Carrying out prospective work in order to guide contact between UPV and companies potentially interested in its services.
- Proposing and coordinating actions that contribute to greater and better knowledge of UPV's activities and their potential application in the socio-economic environment.

R&D+i Solutions

Webpage <https://innovacion.upv.es/en/companies-and-investors/upv-solutions/>

Overview and goals The service offers help and advice to companies seeking innovation and technology solutions for their challenges and needs. The work carried out by UPV's researchers can provide solutions to needs for which there are no answers in the business sector.

Accelerators, incubators, and funders at UPV

IDEAS UPV

Webpage <https://www.ideas.upv.es/>

Overview and goals The body that promotes and manages business initiatives born at the university from a concept to a clear business idea. IDEAS UPV's mission is to promote and develop the entrepreneurial culture at the university, to raise awareness and stimulate the university community in the creation and support of new companies, and to support the creation and development of innovative and technology-based companies in the Valencian Community, mainly. IDEAS UPV is also responsible for advising the university community on the process of creating companies.

Key activities

- Mentoring services: free service for new entrepreneurs and existing companies, business idea analysis, business modeling, access to funding, team building, intellectual property, dealing with investors.
- Challenges and competitions: business idea competition for students, hackathon to solve challenges, startup competitions, international competitions.
- Teamer Up: team building platform to connect startup projects with teamers who become founders and partners.

Sustainability impact (examples) Supporting startups that have environmental and social impact, and providing tools for guiding and measuring the contribution to the SDGs.

StartUPV

Webpage <https://startupv.webs.upv.es/>

Overview and goals Founded in 2012, StartUPV includes a set of services and workspaces aimed at students and graduates of UPV with an entrepreneurial initiative.

Key activities Its 5-year incubation and acceleration program consist of the following stages:

- Stand Up Preincubation: Each center (faculty or school) of the UPV has a workspace enabled for its students to start working on their business ideas, developing the concept on paper, the first prototype and doing the first validations until it becomes a reality.
- READY - Stand Up to Start Up: In this phase StartUPV finds all those projects and companies that are building and validating a business model. For a year they will be in direct contact with the market, leaving their comfort zone, validating hypotheses, and pivoting if they do not succeed.
- STEADY - Start Up to Scale Up: The companies that access this phase have a private office, according to their needs. Once installed, the team has a year to consolidate the business and be able to scale, accessing the last phase of the ecosystem.
- EXPAND – Scale Up: the last phase, where the business will reach scalability and a considerable share in the market. Companies that manage to overcome the corresponding milestones access this phase, and may spend up to three years, contributing their expertise to the StartUPV community.

SPIN UPV

Webpage <https://innovacion.upv.es/es/spinupv/>

Overview and goals A program that promotes startups and transfer of knowledge and technology. It aims to give value to quality research generated by the university with real potential in the market.

The Polytechnic City of Innovation (CPI)

Webpage <http://innovacion.upv.es/es/ciudad-politecnica-de-la-innovacion-parque-cientifico-de-la-universitat-politecnica-de-valencia/>

Overview and goals The university's Science Park. It is a space, not just a physical one, where university, business and society connect to accelerate the generation of knowledge-intensive activities. It contributes to capitalizing on the knowledge of the university, generating impact by transferring its results and contributing to socioeconomic development.

Key activities

- Space for companies
 - Start-up: initiatives that arise from students or graduates of the UPV.
 - Spin-off: promoted by researchers from the UPV, based on research results that are property of the UPV.
 - Corporate laboratories of companies that have a strong collaboration with the UPV both in research and recruitment of talent.

- Technological advice
- Innovation consulting
- Investment opportunities
- Hosting research institutes/centers

Centre for Development Cooperation (CCD)

Webpage <https://www.upv.es/entidades/CCD/index-en.html>

Overview and goals The center is the university's body that is responsible for supporting and encouraging the participation of university members in activities of development cooperation. It aims to promote solidarity attitudes, and to approach the university to all actors in the international system of development cooperation (DNGO, public administrations, and international organizations).

Key activities

- Managing public calls and funding and cooperation programs.
- Organizing courses and activities to promote awareness.

Student-led initiatives at UPV

Generación Espontánea (GE)

Webpage <https://generacionespontanea.upv.es/>

Overview and goals The GE program is a launch pad for initiatives that come entirely from the university's students. The groups collaborate with countless universities around the world and launch their own events with the support of both the UPV and powerful international and local sponsors. Since 2017 it is part of the Design Factory Global Network, a network of innovation programs in universities and research organizations on the five continents of the world.

Sustainability impact (examples) Five groups are sustainability-focused:

- Eolia UPV: the team's mission is to design and manufacture small-scale wind turbines. <https://generacionespontanea.upv.es/grupos/eolia-upv/>
- L'Hortet EPSG: this group arises from the concern of several students of the environmental sciences degree to learn through practice. <https://generacionespontanea.upv.es/grupos/lhortet-epsq/>
- PROLUO: creating filters capable of capturing plastics from the sea. <https://generacionespontanea.upv.es/grupos/proluo/>
- Azalea: its goals is to design and build a housing prototype to compete in the Solar Decathlon Europe. <https://generacionespontanea.upv.es/grupos/azalea/>

1.7. WUT's SEI Ecosystem (Warsaw University of Technology)

Educational programs and courses at WUT

Renewables in Business Postgraduate Program

Webpage [https://biznes.edu.pl/en/renewables-in-business-technologies-economics-
implementations/](https://biznes.edu.pl/en/renewables-in-business-technologies-economics-implementations/)

Overview and goals The one-year post-graduate program was co-created by the Warsaw University of Technology Business School and the Institute of Renewable Energy. It was created for people operating in the area of renewable energy willing to learn about the economic conditions and the needs of the energy cost reduction market. Final work carried out in interdisciplinary student groups, with the support of practitioners (focused on the market needs) – preliminary feasibility studies.

Key activities

- Classes conducted in an interactive and practical mode: case studies, workshops, discussions and debates.
- Project analysis with the consideration of market and finances-related aspects, and the application of up-to-date knowledge in real development practice and market actions.
- Learning about and understanding global and EU trends in the energy field
- Emphasis on the two most competitive zero-emission technologies for electricity generation: solar and wind, along with the so-called “Enabling technologies” and technologies of modern heating
- Final work carried out in interdisciplinary student groups, with the support of practitioners (focused on the market needs) – preliminary feasibility studies.
- Analysis and results of the monitoring processes concerning the Renewable Energy Sources directive in Poland, the electricity market, and management of the Energy Union.

Executive MBA

Webpage <https://biznes.edu.pl/en/executive-mba-en/>

Overview and goals A part-time study program in English, characterized by a real-life approach that is combined with outstanding academic standards and a deep understanding of the technologies of tomorrow. The EMBA program was designed in order to meet the expectations of high- and mid-level managers. The program opens new doors and allows us to understand the latest trends and challenges in a fast-changing business world.

Key activities

- The first pillar of the program (knowledge for business): includes core and specialized modules.
- The second pillar (business in action): includes business analysis project, new venture/product project, and consultancy project.
- The third pillar (personal development): aims to create opportunities for an insight into one's personal skills and competencies of managers and development in terms of the needs arising from the challenges of technological

revolution and social change.

Sustainability impact (examples) One of the core modules is "Social Responsibility and Ethics", and specialized modules include "Circular Economy", for example.

Startup Entrepreneurship Courses

Webpage <https://biznes.edu.pl/en/community/koszykowa-valley/>

Overview and goals Sustainability-oriented startup pre-acceleration project-based course at multiple faculties at WUT.

Key activities

- Courses for startup entrepreneurship (connected with sustainability and innovation).
- MBA courses
- Collaboration with incubators and accelerators

Research centers, programs, and labs at WUT

Waste Management Research Team

Webpage <https://go.is.pw.edu.pl/index.htm>

Overview and goals The team deals with waste management, particularly in the area of processing technologies (including recycling and recovery) of waste and the cleanup of the urban regions urbanized areas.

Key activities

- The team's recent years of research have focused on source-separated bio-waste (including food waste), biological treatment of process gases and waste management within the Circular Economy.
- The team offers opinions and consultations, and support in the development of concepts, programs, and plans for the management of municipal and industrial waste and the development of new recovery and waste disposal technologies.

Innovations for Sustainable Energy Research Team

Webpage <https://repo.pw.edu.pl/info/team/WUT1e6c7880d2834d0bac525c4d7382431b/>

Overview and goals The team is within the Faculty of Administration and Social Sciences. It conducts research in the field of model regulation of energy markets (electricity, gas natural gas, oil, and liquid fuels, heat).

Sustain 4.0 Research Team

Webpage <https://repo.pw.edu.pl/info/team/WUT1e6c7880d2834d0bac525c4d7382431b/>

Overview and goals The team conducts research on sustainable production systems organization, and it is formally under the Faculty of Mechanical and Industrial Engineering.

Advancing Methodology of Integrated Decision-Making Support for Sustainable Development

Webpage <https://repo.pw.edu.pl/info/project/WUT1a76eae59304567ac2a049e163dd860/>

Overview and goals The overall project objective is to advance methods for science-based decision-making support in key problems of sustainable development, especially in trade-off analysis between attainable goals for economic efficiency, quality of environment, and human well-being.

Disclosures and technology transfer at WUT

Center for Innovation Management and Technology Transfer

Webpage <https://www.cziitt.pw.edu.pl/>

Overview and goals A multidisciplinary center supporting the initiation and implementation of scientific and R&D projects related to developing and implementing innovative technical solutions and modern technologies in enterprises. It also supports the development of competence in cooperation with manufacturing, service, and commercial enterprises, as well as innovative didactics and academic entrepreneurship. The center's goals are: a) to be the one-stop shop for everyone interested in innovation and technology, b) to be a space for collaborating, c) to be a thinktank for the university and support the university to be more innovative, d) to conduct research analysis in innovative topics, e) to secure effective commercialization for the university.

Key activities

- Preparing process for licensing and selling products
- Coordinating process for creating spinoff teams – preincubation program at the university.

Sustainability impact (examples)

- Bringing awareness
- Trying to create a tool in entrepreneurship connected to sustainability – metrics on how to measure sustainability of startups, and how to increase potential in the sustainability spinoffs.
- Helping the university to think about how to use its energy more efficiently.

Innovation Brokerage Department

Webpage <https://www.cziitt.pw.edu.pl/dla-biznesu/wspolpraca-z-uczelnia-skauting-technologie/>

Overview and goals The department provides support for technology transfer, protection, and commercialization processes. In cooperation with businesses, the department help

with research, legal, economic, and environmental aspects of technology transfer in the broadest sense.

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| Key activities | <ul style="list-style-type: none"> • Promotion of research, technological and expert offerings to entrepreneurs and investors. • Active search for buyers of technologies, inventions, commissioned research work, and expert services available at the university. • Negotiating the terms and conditions of contracts, including, but not limited to, the method of commercialization (sale, licensing), the type of license to be granted, and the transaction's financial terms. • Project management following the scope of activity. |
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Research and Analysis Department

Webpage <https://www.cziitt.pw.edu.pl/o-cziitt/struktura-organizacyjna/dzial-badan-i-analiz/>

Overview and goals The Research and Analysis Department is an interdisciplinary team with extensive experience in scientific and commercial research. The department supports the university with research about organization from within (internal stakeholders, but also some external). It also supports the strategic and operational decisions of the university through research (e.g., optimization of processes, science-related processes, quality of education etc.).

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| Key activities | <ul style="list-style-type: none"> • Research (ad-hoc studies, desk research, benchmarking). • Mapping and evaluations of internal procedures. • Surveys, panels, focus groups, and interviews. • Consultancy |
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| Sustainability impact (examples) | <ul style="list-style-type: none"> • Indirect impact through supporting with providing data/research to make the necessary changes (providing an evidence-base). • Wayfinding on campus for accessibility. • Gender equality plans. |
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Accelerators, incubators, and funders at WUT

Innovation Incubator

Webpage <https://www.cziitt.pw.edu.pl/dla-pracownikow-pw/przedsiębiorczość-startupy-oraz-spolki-spin-off-i-spin-out/inkubacja/>

Overview and goals Building infrastructural and substantive facilities for WUT's academic community in the development of entrepreneurship and innovation by supporting start-ups, university technology companies (spin-off/out), modern forms of entrepreneurship, cluster initiatives, cooperation with the business sector and business environment institutions, collaboration with international partners. Incubator's offer can particularly benefit: a) individuals or teams who wish to validate a business idea or

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| | product by participating in a 2-month pre-incubation program; b) start-ups and young technology companies are looking for support in their development by participating in an incubation program. |
| Key activities | <p>The incubation program:</p> <ul style="list-style-type: none"> • Innovation: consultancy tailored to the individual needs of each company, access to research services and laboratories. • Science: support for business and technological competences with experts and mentors, assistance in preparing the most effective development path. • Infrastructure: rental of usable space and equipped offices, access to common areas and meeting rooms. • Networking: placing basic information about the company on the incubator's website, networking events, assistance in building business and marketing connections, assistance in building a network of connections with the university and experienced entrepreneurs. |

Student-led initiatives at WUT

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| Enactus PW | |
| Webpage | https://www.enactuspw.pl/ |
| Overview and goals | Enactus PW is one out of 1800 Enactus teams in the world. Enactus is an international, non-profit organization dedicated to ambitious and driven students with a mission to improve the world through entrepreneurial action. We work on projects, which support the 17 Sustainable Development Goals, to improve the social, economic, and environmental situations in our local communities. |
| Key activities | <ul style="list-style-type: none"> • Seeing possibilities: this is the first stage of the project in Enactus, in which they select the target group of the project and define the problem they want to solve. • Taking action: having known the problem, they proceed to create a solution along with the general concept of the business model. Then they create the first prototypes, which they test and improve based on feedback. • Enabling progress: in the last stage, they introduce the solution to the market, taking into account scaling and ensuring the stability of the business model. |
| Sustainability impact (examples) | <p>The main mission of the organization is to implement projects that bring about positive changes, with a focus on real social, economic, and ecological problems. Examples of the projects include:</p> <ul style="list-style-type: none"> • Cognitive: An app for people with cognitive impairments. • Don't waste me!: a project aimed to educate people, enabling easy access to educational resources. It includes an online shop offering zero-waste-oriented products. • Energy Calculator: provides an online calculator calculating the most efficient energy source for a given household. |

2. RESEARCH INSTRUMENTS

2.1. Interview guide for interviewing staff of universities' SEI initiatives

| Theme | Interview questions |
|---|---|
| <p>Introduction</p> <p>The purpose is to introduce the aim of the research to the interviewee and take their permission to record the interview for the purpose of transcription and storing data. Besides, understanding the interviewee's job description will help set the stage for the conversation.</p> | <ul style="list-style-type: none"> • [Introducing the interviewer and the project] • Do you agree to recording this conversation? • What is your title/role/responsibilities at the initiative and/or the university? |
| <p>Initiative's overview</p> <p>The purpose is to get an understanding of the background and aims of the initiative, and the different activities it undertakes to achieve its goals. This will give an overview on the "why" and "how". In addition, asking about the beneficiaries and target group will help identifying the extent of "openness" of the initiative (e.g., whether it is only for university's students and staff or to the general public; whether it is only for the city / region or the whole country / EU).</p> | <ul style="list-style-type: none"> • Can you give a brief overview about the initiative (e.g., history, goals, and objectives)? • What are the key activities that support sustainable entrepreneurship and innovation? (e.g., education, research, disclosures and technology transfer, incubators and accelerators, idea evaluation/development, startup and venture formation support, networking, funding). • Who are the key beneficiaries of the initiative? |
| <p>Governance and management</p> <p>The purpose is to clarify how the initiative is governed and managed (e.g., if it is an independent organization/program with connection to the university or a unit/department that is formally under the university's management; if it is a student-run initiative; if it involves different actors/organizations). Besides, asking about the sources of funding will help in understanding the connections to the broader ecosystem (e.g., locally, nationally, EU-level). The last question of this theme aims to seek reflections on the challenges in managing the initiative at the initiative's organizational level as well as staff's personal level.</p> | <ul style="list-style-type: none"> • Is the initiative formally governed/managed by the university? Or completely independent? Clarify. • How is the initiative financed/funded? • Who are the different actors/stakeholders involved in managing the initiative? • What are the key challenges in running the initiative? |
| <p>Impact</p> <p>The purpose of this theme is to understand how success is defined from an informal perspective (how the interviewee broadly perceives it) as well as from formal perspective (how the initiative formally evaluates success in achieving its goal via specific frameworks, tools, metrics, Key Performance Indicators, etc.). The last question digs specifically into the initiative's sustainability impact (e.g., any sustainability criteria/requirements for beneficiaries).</p> | <ul style="list-style-type: none"> • How do you define success in achieving your goals? • Any metrics / KPIs / mechanisms / tools to formally assess success/impact? • How do you reflect on the initiative's impact on environmental and social sustainability specifically (as opposed to entrepreneurship and innovation in general)? |
| <p>Conclusion</p> <p>The purpose of the concluding questions is snowballing, i.e., getting additional contact persons for conducting more interviews and/or further research on sustainable entrepreneurship and innovation (e.g., on success cases of sustainable entrepreneurs who benefited from the initiatives).</p> | <ul style="list-style-type: none"> • Can you share names/contacts of: <ul style="list-style-type: none"> - researchers doing research on the initiative and/or the topic of sustainable entrepreneurship and innovation? - interesting entrepreneurs/companies that benefited from the initiative? - other initiatives at your university that support sustainable entrepreneurship and innovation? |

2.2. Template for summarizing and organizing data on universities' SEI initiatives

| Initiative & interviewee | Overview | Governance & management | Impact | Other contacts |
|---|---|---|--|--|
| Initiative's name: Website: Brief text: Initiative type (highlight all applicable): <ul style="list-style-type: none"> • educational course / program • research project / lab • disclosures & technology transfer • incubator / accelerator • idea evaluation / development • venture formation support • general advice / consultancy • funding / financing Interviewee: Title: Email: | Initiative's goals: <ul style="list-style-type: none"> • • • Key activities: <ul style="list-style-type: none"> • • • Key beneficiaries: <ul style="list-style-type: none"> • • • | Governance: <ul style="list-style-type: none"> • • • Sources of funding: <ul style="list-style-type: none"> • • • Actors involved in managing: <ul style="list-style-type: none"> • • • Key challenges: <ul style="list-style-type: none"> • • • | Definition of success: <ul style="list-style-type: none"> • • • Metrics / mechanisms / tools to assess: <ul style="list-style-type: none"> • • • Sustainability impact: <ul style="list-style-type: none"> • • • | Researchers conducting relevant research: Name: Title: Email: Entrepreneur / company that benefited: Company name: Contact person: Title: Email: Other SEI initiative(s) at the university: Initiative name: Contact person: Title: Email: |

2.3. Interview guide for interviewing entrepreneurs / companies' innovation managers (beneficiaries of SEI initiatives)

| Theme | Interview questions |
|---|--|
| <p>Introduction</p> <p><i>Here you want to gather general info about your interviewees, and what Sustainable Entrepreneurship and Innovation (SEI) initiatives / ecosystems they sought / got support from.</i></p> | <ul style="list-style-type: none"> • [Introducing the interviewer and the project] • Do you agree to recording this conversation? • Can you give a brief background and history about your venture / your role? • What was your key motivation to start your venture / your role? • What SEI initiatives/ecosystem did you seek support seek support from? What type of support did you get? |
| <p>Value-creating challenges: making positive long-term contribution to society</p> <p><i>Here your interviewee may tell you about their mission, vision, and the value of what they work on. They may mention issues with prototyping, product development, designing, digital technology enablers (e.g., IoT, AI, digital platforms), external legal/regulatory opportunities, and whether they follow different processes from the conventional way. The last question of this theme asks specifically on the support they sought/got from the SEI ecosystem/initiative to deal with value-creating challenges.</i></p> | <ul style="list-style-type: none"> • What is the value that you provide to society? • What challenges did this entail for you and your team? • How did you go about solving those challenges? • Did you get any support from the SEI ecosystem/initiative for dealing with these challenges? How? |
| <p>Funding challenges: bringing money into the sustainable venture</p> <p><i>Here your interviewee may tell you about their efforts to raise funds to power ahead with their ideas. They may mention different sources for funding such as impact investors, FFF (family/friends/fools), customer funding, public funding, grants, etc. They will possibly share ideas about their revenues/sales, and whether they are sufficient to run the business. The last question of this theme asks specifically on the support they sought/got from the SEI ecosystem/initiative to deal with funding challenges.</i></p> | <ul style="list-style-type: none"> • Can you tell us about your ways to sustain your project financially? • What challenges did this entail for you and your team? • How did you go about solving those challenges? • Did you get any support from the SEI ecosystem/initiative for dealing with these challenges? How? |
| <p>Systemic challenges: enablers and barriers in the external environment</p> <p><i>Here your interviewees may talk about lock-ins in place, path dependent thinking, incumbent players, stakeholders' conflicting interests, technologies, regulations, policy, institutional barriers, lobbyist forces, public attitude, change resistance, planetary boundaries, etc. The last question of this theme asks specifically on the support they sought/got from the SEI ecosystem/initiative to deal with systemic challenges.</i></p> | <ul style="list-style-type: none"> • Can you tell us about the environment where you operate? How do the characteristics of the systems (economic, social, political, technological, etc.) impact your operations? • What challenges did this entail for you and your team? • How did you go about solving those challenges? • Did you get any support from the SEI ecosystem/initiative for dealing with these challenges? How? |

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| <p>Human collaboration challenges: team and coordination issues</p> <p><i>Here your interviewees will talk about teamwork issues, difficulties in building and maintaining their teams, conflicts in their organizations, ways to overcome conflicts and differences in values amongst team members. The last question of this theme asks specifically on the support they sought/got from the SEI ecosystem/initiative to deal with human collaboration challenges.</i></p> | <ul style="list-style-type: none"> • How have you organized internally to push your project forward? • What challenges did this entail for you and your team? • How did you go about solving those challenges? • Did you get any support from the SEI ecosystem/initiative for dealing with these challenges? How? |
| <p>Final thoughts</p> <p><i>Here you want your interviewees to emphasize a particular challenge or mention other challenges they have encountered and whether any support has been particularly useful for them. Finally, they hopefully tell you about possible future business/projects and whether they will follow the same logic of sustainability and continue seeking support from the SEI ecosystem/initiative.</i></p> | <ul style="list-style-type: none"> • What has been the most challenging part of your experience? • What has been the most useful support you got from the SEI ecosystem/initiative? • What suggestions for improvement would you recommend to the SEI ecosystem/initiative to further develop their activities/services to support SEI? • What are your future plans in the short-term and long-term? • Will you seek further support from the SEI ecosystem/initiative for your future plans? Why / why not? |