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PROGRAMME PLAN AND DIGITAL RESOURCES FOR A TRANSITION FROM ACADEMIC TO THE STARTUP WORLD

04 - TRAINING SCHEME

Cogsteps

PREPARED AND PRESENTED BY













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Cogsteps





About Cogsteps



Where science and research meet business Crossing the Gap: Startup education and support for PhD students, researchers and scientists (COGSTEPS) is the **Erasmus+ project** coordinated by the <u>University of Zagreb</u> <u>Faculty of Electrical Engineering and Computing</u> and implemented together with the <u>University of Ljubljana</u>, <u>TU</u> <u>Graz</u>, <u>Zagreb Innovation Centre</u>, <u>Ljubljana University Incubator</u> and <u>Know-Center</u>. The implementation of this project seeks to "fill the gap" between the academic and the startup world.

Through the COGSTEPS project, a web platform that allows researchers and scientists to transform their research results and innovations into deep-tech startups and connect with relevant experts and stakeholders from the startup ecosystem was developed. Subsequently, researchers and scientists were able to engage in intensive startup bootcamp to master the startup basics and to recognise the opportunity for commercialising their research results. The next step was startup training in three phases, for all research and development teams that already had basic startup knowledge and want to start a startup from their research. Each stage was complementary to the previous one, following a specific period of startup development and implemented by different Cogsteps partners.



Get to know us

Find more information about the Cogsteps project at https://cogsteps.com/



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Challenges, goals and activities

Many scientists work their whole life in a specific field and they are "top-notch" experts. Most PhD students invest many years in their research while preparing doctoral dissertations but this knowledge and experience are rarely applied in the industry. Too few PhD holders in the EU go on to work outside academia and too few startups and spin-off companies are founded by PhD holders. As a result, the EU is in a serious deficit of successful startups and spin-off companies coming from universities. This is a huge problem since innovation is one of the most important drivers of economic growth. The goal of this project is to create a clear path, educational materials and support programme for every academic startup. The main objectives are:

- positive change in startup perception from the academic and scientific communities,
- starting more university startups and spin-off companies,
- development of an entrepreneurial mindset, transferable and transversal skills by students, researchers, professors and scientists,
- forming a regional hub for innovation, research and science commercialisation,
- crossing the gap between the academic and startup worlds.

Cogsteps timeline

The Cogsteps web platform aims to connect researchers and experienced startup experts, using a data-driven recommender system that delivers personalized recommendations to platform users. The platform guides users through the step-bystep process of forming a startup, including brainstorming, networking, education, mentoring, and connecting with incubators and venture capitalists. The project also offers live education and support programs, such as a "Startup 101" bootcamp, to help researchers deep dive into the startup world. Additionally, there is a startup incubation program consisting of three phases, providing intensive education and mentorship to academic research teams aiming to start their own startups. Networking and dissemination events like "Brainstorming Tuesday" and "Demo Day" are organized to further immerse participants in the startup ecosystem.





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About startups with an idea

FROM RESEARCH TO MVP

Embarking on a journey from academia to the world of startups is an exhilarating transition. You're armed with an innovative idea or scientific research that has the potential to be commercialized, and you've even assembled a dedicated team ready to bring it to life. Now, it's time to delve into the exciting realm of **early-stage startup development**. This guide will help you with key areas to consider as you make this transition and pave the way for your startup's success.

While your academic background likely sparked your brilliant idea, it's crucial to ensure it holds water in the real world. Begin by engaging with your potential users or customers. Seek their feedback and understand their pain points. Does your concept genuinely address a pressing need? **Idea validation** is your litmus test for demand before you commit more resources.

Market research is your compass in the startup world. Dive deep into your target market. Analyze industry trends and identify your competitors. What makes your solution unique, and who are your potential customers? This knowledge will guide your strategies and help you stand out in a crowded marketplace. Your academic research likely involved delving deep into a particular subject area. Now, apply that analytical mindset to your market. Identify who your potential customers are and what they truly need. This involves segmenting the market, creating buyer personas, and analyzing their behaviour and preferences. Quantify the market opportunity. Determine the potential size of your target market and the demand for your solution. Understand the growth trajectory and whether there's room for your startup to thrive. Make sure that you understand what is your competition doing and define your Unique Selling Proposition (USP).



Efficiency is the heartbeat of startups. Embrace lean engineering principles to minimize waste and extract maximum value. Start with a Minimum Viable Product (MVP) that concentrates on core functionality. This lean approach ensures that your resources are utilized judiciously and that vou can swiftly iterate based on user feedback. Eliminate unnecessary processes, cut down on excess inventory, and reduce wait times. In an academic setting, you likely optimized your research processes; in lean engineering, you apply a similar mindset to product development. You build, measure, and learn, making incremental changes to enhance your product and processes. Keep the **customer's needs** at the forefront of vour efforts.

Prototyping, whether in hardware or software, is pivotal. Hardware prototypes allow you to test physical products for functionality and design. On the other hand, software prototypes give life to your idea's core features. These early models serve as tangible **Proof of Concept (PoC)**. It's not merely about crafting a physical or digital representation of your concept; it's a dynamic process of learning, refining, and validating. Prototyping helps identify potential problems and challenges early in the development process, reducing the risk of costly mistakes down the line.





In the realm of startups, **business development** is the driving force that propels your venture forward. For those transitioning from academia to the startup world, understanding the intricacies of business development is crucial. It's not just about securing deals and partnerships; it's the strategic engine that fuels growth and innovation. In the **startup ecosystem**, connections are your most valuable asset. **Network** tirelessly with industry experts, potential customers, and mentors. Forming strategic partnerships and collaborations is your gateway to invaluable insights and opportunities.

Business development involves identifying new market opportunities and avenues for growth. It's about finding ways to reach untapped customer segments and expand your startup's footprint. A big part of the business development is **customer** acquisition strategy. This involves developing strategies for reaching your target audience, converting leads into customers, and nurturing long-term relationships. Ultimately, business development aims to increase **revenue streams**. This can come from expanding your customer base, optimizing pricing strategies, or identifying new monetization opportunities. It might entail launching new product lines, exploring complementary services, or adapting your offerings to meet evolving customer needs.



Tools like the **Business Model Canvas (BMC)** provide a structured approach to mapping out your startup's core components. The BMC is a strategic management tool that provides a visual framework for describing, designing, and analyzing a startup's business model. The BMC consists of nine key building blocks that cover every aspect of your startup's operations: Customer Segments, Value Proposition, Channels, Customer Relationships, Revenue Streams, Key Resources, Key Activities, Key Partnerships and Cost Structure. Develop a compelling Customer Value Proposition (CVP) that clearly articulates how your solution outperforms alternatives in addressing a specific problem. It answers the fundamental question: "Why should customers choose your product or service over alternatives?" It's closely tied to your Value Proposition block on the BMC. These tools serve as the blueprint for your business strategy.

Choosing your **fundraising** path requires careful consideration. **Bootstrapping, angel investors, crowdfunding, or venture capital**—all have their merits. Tailor your fundraising strategy to your startup's specific needs and stage of development. Research and establish connections with venture capital funds that align with your vision and industry.

The transition from academia to entrepreneurship is a thrilling amalgamation of knowledge and innovation. As you navigate the early-stage development of your startup, remember that **adaptability** and **resilience** are your allies. Embrace **feedback**, be prepared to **pivot**, and embrace the dynamic nature of the startup world. With dedication and a holistic approach, your academic research possesses the potential to metamorphose into a thriving startup, making a lasting impact in your chosen industry. Welcome to the startup adventure!



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Programme plan

A LIST OF LECTURES AND WORKSHOPS

ТОРІС	DESCRIPTION	KEY WORDS
MARKET RESEARCH FILIP SVIBEN (INFOBIP)	The three main methodologies of market research are desk, qualitative and quantitative research. Mastering them is key to validating your idea and understanding your customers.	startups; validation; idea; market; ideation; research; customers;
LEAN ENGINEERING MAJ HROVAT (JUICY MARBLES)	Lean engineering focuses on optimizing production processes and reducing waste. The concept of Minimum Viable Products (MVPs) and proof-of-concept (PoC) prototypes plays a pivotal role.	lean; testing; MVP; prototyping; PoC; hardware; ideation; innovation;
SOFTWARE PROTOTYPING MATEA TOMIĆ (BORNFIGHT) FILIP FAJDETIĆ (PHOTOMATH)	A prototype is a model you can build to help you validate your hypothesis before investing time and money to build the actual product. It is one of the five stages of the product development.	agile; testing; MVP; software; prototyping; product; development PoC; ideation;
FUNDRAISING JAKOB GAJŠEK (LUI)	Venture capital (VC) involves investing in companies with the potential for rapid growth. VCs take a share of the company and expect to sell them for X times the money they've invested.	fundraising; venture capital; investors; valuation; growth; finance; term sheet;
BUSINESS DEVELOPMENT GORJAN AGAČEVIĆ (SENSE4BOAT)	In the dynamic world of business, the ability to adapt, innovate, and form strategic partnerships is often the key to success. Tools like the Business Model Canvas (BMC) and Customer Value Proposition (CVP) can help you in defining your business strategy.	business; BMC; CVP; customers; strategy; partnership; market research; revenue;

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Market Research

DESK, QUALITATIVE AND QUANTITATIVE



https://cogsteps.com/market-research/

Market research is the compass that guides businesses through the turbulent seas of consumer preferences, industry trends, and competitive landscapes. It is not a one-sizefits-all endeavour. It encompasses a diverse range of segments, including Business-to-Business (B2B) and Business-to-Consumer (B2C) research. But that's just the tip of the iceberg. The journey begins with desk research, which involves mining publicly available data. This initial step helps familiarize researchers with the subject matter and avoids redundancy.

To conduct effective market research, you need robust data sources. These sources can be classified into three categories:

• Publicly Available Data: The internet is teeming with information. Tap into articles, journals, and search engines to gather data relevant to your research.



https://youtu.be/oe8TD0LHTAE

- Existing Research: Scientific papers and industry reports can be goldmines of data. Reach out to researchers who have already delved into your field of interest.
- Structured Databases: Specialized companies meticulously collect and structure data, offering valuable insights. While these often come at a cost, they can save you time and provide critical information.

A well-crafted questionnaire is at the heart of the quantitative research. Tools like Survey Monkey, Google Forms, Alchemer, and MailChimp can assist in creating questionnaires efficiently.

Qualitative research is about diving beneath the surface. It involves in-depth interviews and focus groups, where quality and content outweigh quantity. Different methods such as focus groups, observation, online forums, and diaries can uncover valuable insights.



Main segmentation of market research

Lean Engineering

REDUCE WASTE. ITERATE. FINISH PROTOTYPES



https://cogsteps.com/lean-engineering/

Originating from Japan, lean manufacturing focuses on optimizing production processes and reducing waste. Lean engineering is a set of principles and practices that stem from the broader concept of lean manufacturing. In the world of engineering and manufacturing, waste can take various forms, from unnecessary parts in prototypes to striving for perfection without considering the customer's actual needs.

The concept of Minimum Viable Products (MVPs) and proof-of-concept (PoC) prototypes plays a pivotal role in lean engineering. For startups, it is an absolute "must" to launch prototypes as early as possible and not scale prematurely without assessing customer demand. Before seeking funding, find ways to create prototypes and discover if there is a market for them.



https://youtu.be/pTPdwj_0Kg4

Sometimes, lean principles are adopted by startups not as their first choice but due to their limited funding. Even with **funding** secured, the focus on optimization and avoiding technological debt must remain a priority. Getting funding can breed overconfidence, but investors demand results. Nothing proves better that there really is a market for your product than the paying customers. Focus on creating an excellent product while generating revenues and proving that people are willing to pay for the technology.

Lean engineering principles can be especially beneficial for startups, as they provide a structured approach to **product development** that emphasizes efficiency, cost-effectiveness, and rapid iteration. Startups often operate with limited resources, making it crucial to make the most of what's available.



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Software Prototyping

TURNING IDEAS INTO SUCCESSFUL PRODUCTS



The heart of software prototyping lies in a structured approach. In this process of product development, five phases are involved: Ideation, Product Strategy, Prototyping, MVP Development and Growth. **Ideation** is where ideas are explored, and strategies are crafted. However, validating these strategies through prototyping is essential before diving into development. User research takes centre stage during the ideation phase. Understanding the problems faced by end-users is crucial, shaping the product in a way that resonates with its intended audience.

Every product strategy consists of three main components: technology, business goals and user needs. Getting users on board is a challenge every software product faces. Some of the possible strategies for user acquisition are paid advertising, content creation, and word-of-mouth marketing.



https://youtu.be/C0FXLF7jZH0

Design **prototypes** play a pivotal role in visualizing the final product. They allow stakeholders and clients to experience a product closely resembling the finished version, aiding in decision-making and feedback collection. Tools like Figma and Marvel make creating prototypes accessible, even for nondesigners. Design prototypes help you to avoid possible technical and other problems in the future, and obtain valuable feedback at an early stage of the development cycle.

MVP Development is usually done in 4 phases: Discover, Define, Estimate and Deliver. In today's competitive landscape, being "minimum lovable" may be more important than just "viable."

Clear acceptance criteria, technology selection, analytics, and planning ahead are key elements of a successful product launch. Gathering user data and monitoring metrics post-launch are crucial to identify areas for improvement and ensure healthy growth.



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Fundraising

PIVOTAL STAGE IN THE JOURNEY OF ANY STARTUP



<u>https://cogsteps.com/fundraising/</u>

Whether you're at the idea stage or already making strides in the market, understanding the nuances of venture capital (VC) and investment can be the key to your success. Venture capital is the lifeblood of startups, offering rapid growth potential in exchange for equity. It's crucial for technology-driven companies looking to dominate the global market. Research indicates that venture capital significantly accelerates a company's growth trajectory, making it a valuable resource for ambitious startups.

Startup funding isn't a one-size-fits-all process. Different stages require varying levels of capital, from pre-seed investments of a few tens of thousands to later-stage funding rounds ranging from one to hundreds of millions globally. Understanding these stages and their funding requirements is essential for startups seeking financial support.



https://youtu.be/w08b8V360HY

Investor selection plays a pivotal role in a startup's success. In the early stages, investors prioritize the team's capabilities over the idea and market potential, requiring evidence of past collaboration and competence. As the company progresses, larger investments are sought from venture funds, corporations, family offices, private equity, and hedge funds. The goal is to raise funds to dominate a market segment and become a **niche** monopolist.

To have a perfect fit, you and your investor have to match by three things: stage, sector and location. When you have your perfect match, you will have to negotiate the deal and sign the term sheet. Don't focus just on the valuation you can get from the investor for your startup, economic and control terms are far more important. Ideally, don't raise money. Instead, create the Fear-Of-Missing-Out (FOMO) and get invested!







Business Development

BUSINESS MODEL CANVAS (BMC) AND CUSTOMER VALUE PROPOSITION (CVP)



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https://youtu.be/53wBnD28ptk

The Business Model Canvas (BMC) is a powerful tool in business development. It helps structure and organize efforts effectively. It ensures that crucial aspects like value proposition, customer segments, channels, customer relationships, and revenue streams are not overlooked. The BMC provides a clear and concise overview of the **business model**. making it easier to communicate and understand both internally and externally. It helps align different parts of the organization toward a common goal by visualizing how each component contributes to the overall **strategy**. The visual nature of the canvas encourages creative thinking and innovation, allowing businesses to explore new opportunities and iterate on their models. By mapping out the business model, leaders can assess its strengths, weaknesses, and areas for improvement, leading to more informed strategic decisions.

The **Customer Value Proposition (CVP)** is a central element of the Business Model Canvas. It represents the promise of value that a business offers to its customers. A well-defined CVP articulates why a **customer** should choose a particular product or service over alternatives available in the market. These benefits can be functional (solving a problem), emotional (making the customer feel a certain way), or social (enhancing the customer's image or status).

To create a compelling CVP, businesses need a deep understanding of their **target audience**. This involves conducting market research, surveys, and interviews to identify customer needs and preferences. By focusing on creating **value** for customers and aligning key components of their business model, organizations can better position themselves for success in today's dynamic marketplace.







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cogsteps@fer.hr



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University of Ljubljana













