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PROGRAMME PLAN AND DIGITAL RESOURCES FOR LEARNING ABOUT STARTUP BASICS FOR THE ACADEMIC COMMUNITY

03 - TRAINING SCHEME

PREPARED AND PRESENTED BY

cogsteps

University of Zagreb Faculty of Electrical Engineering and Computing

University of Ljubljana

TU Graz

ZICER Zagreb Innovation Centre

Ljubljana University Incubator

Know Center

Contents

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PROJECT REFERENCE: 2020-1-HR01-KA203-077785
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About Cogsteps

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 University of Zagreb Faculty of Electrical Engineering and Computing and implemented together with the University of Ljubljana, TU Graz, Zagreb Innovation Centre, Ljubljana University Incubator and Know-Center. 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-by-step 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

GETTING FAMILIAR WITH THE STARTUP WORLD

Welcome to the exciting world of startups! If you're coming from academia and eager to dive into the startup ecosystem, this guide will provide you with key insights and information to get you started.

Let's begin with the basics. A **startup** is a newly established business that aims to offer innovative products or services to the market. Unlike traditional businesses, startups often operate in an environment of uncertainty and rapid growth potential. In the startup world, teamwork plays a vital role. Understanding team dynamics and roles is crucial. Startups typically consist of **founders**, who are responsible for the vision and direction of the company, as well as various roles such as developers, marketers, and operations specialists.

The startup lifestyle can be intense and fast-paced, with a focus on agility and adaptability. You'll experience different phases, including **ideation, product development, market entry, and growth**. Each phase requires specific strategies and actions. To navigate the startup landscape effectively, familiarize yourself with useful tools that can streamline your operations and boost productivity. These can include project management software, collaboration platforms, customer relationship management (CRM) tools, and financial management systems.

Understanding popular **business models** is essential. Explore concepts like B2B (business-to-business), B2C (business-to-consumer), subscription-based models, and marketplace platforms. Learn from successful companies that have implemented these models and observe how they generate revenue and serve their target customers.

Fundraising is a critical aspect of startup growth. Familiarize yourself with different funding options, such as bootstrapping, angel investors, venture capital, and crowdfunding. Understand the process of preparing a compelling pitch and business plan to attract potential investors. You can practice your pitch in some of the many available **startup competitions**. Participating in startup competitions can provide valuable exposure and networking opportunities. These events allow you to showcase your ideas, receive feedback from industry experts, and potentially secure funding or partnerships. For pitching, you are going to need a **pitch deck**. A pitch deck is a presentation that summarizes your startup's value proposition, market opportunity, business model, and financial projections. It's an essential tool for attracting investors and partners. Learn how to craft a compelling pitch deck that effectively communicates your startup's potential.

With everything above, you can get help from **incubators and accelerators**. Incubators and accelerators are organizations that support startups by providing education, mentorship, resources, and networking opportunities. Explore these programs and consider joining one that aligns with your goals and industry focus.

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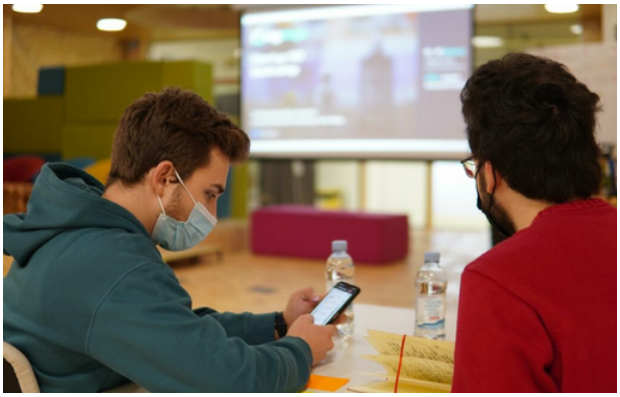
The first thing a good incubator will teach you is to start with the problem worth solving and how to validate your ideas. When you are a startup, your resources (time, people and money) are very limited. It is very important to use those resources on things that really matter. To be able to do that, you need to start with the problem. Many engineers and scientists tend to start with the solution. They like to build and create stuff, but to be able to transform that prototype into a successful business, it is essential to understand the problem you are trying to solve and the people whose problem you are solving. Design Thinking and Idea Validation are two essential components of the startup process that help ensure the development of successful and user-centred products or services.

Design Thinking is a problem-solving approach that focuses on understanding user needs and creating innovative solutions. It emphasizes empathy, collaboration, and experimentation. The key stages of the Design Thinking process are Empathize, Define, Ideate, Prototype and Test. Design thinking is an iterative process, and the stages mentioned above are often revisited and repeated to ensure continuous improvement and user-centred design.



Since you are coming from the academic community, intellectual property (IP) and technology transfer are going to play a huge part at the beginning of your startup journey. They are crucial aspects of the startup world, especially when it comes to leveraging academic research and protecting innovative ideas.

Technology transfer refers to the process of transferring knowledge, research findings, and technologies from academic or research institutions to the commercial sector for practical application. It aims to bridge the gap between academia and industry, facilitating the transformation of scientific discoveries into marketable products or services. **Intellectual property (IP)** encompasses a range of creations of the mind, such as inventions, literary or artistic works, designs, symbols, or brand names, which are protected by law. One key aspect of technology transfer is the assessment of IP. This entails evaluating the IP potential of your research or innovation, identifying patentable inventions, copyrightable works, trade secrets, or other forms of IP that can be protected and monetized.

Remember, the startup world is dynamic and ever-evolving. Stay curious, continuously learn, and engage with the community. Embrace the challenges and opportunities that come your way, and you'll be well on your journey to building a successful startup from your academic research.

To help you get started, we prepared lectures on specific topics with additional digital resources which will help you to learn more about the startup basics.

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Programme plan

A LIST OF LECTURES AND WORKSHOPS

TOPIC	DESCRIPTION	KEY WORDS
STARTUP INTRODUCTION MATIJA SRBIĆ (FER/NUQLEUS)	What is a startup? How to start with the best chance to succeed and which are the typical development phases? Who are the key stakeholders in the startup ecosystem?	startups; ecosystem; idea; team; market; incubators; venture capital; investors; spin-offs; equity;
LEAN STARTUP ALEŠ PUSTOVRH (FRC)	Lean startup development is an approach to building and launching startups that emphasizes rapid iteration and customer feedback. It advocates for a "build-measure-learn" cycle.	TRL; validation; testing; innovation; customers; MVP; feedback;
PITCH & STORYTELLING MATIJA SRBIĆ (FER/NUQLEUS)	Pitching is an opportunity to introduce your business idea in a limited time. It comes in different shapes and forms and is usually underlined by a good story and a well-structured pitch deck.	pitch; pitch deck; one-liner; tagline; storytelling; problem; business development; market; traction;
VENTURE CAPITAL "SCHNELLKURS" JAKOB GAJŠEK (LUI)	Fundraising is an exhilarating yet challenging journey for startups. By understanding the investor landscape, you can increase your chances of securing the right investors.	fundraising; venture capital; investors; valuation; growth; finance; term sheet;
GETTING FUNDED BY EIT AND EIC ANITA PIVAC (UNIZG) TANJA IVANOVIĆ (HAMAG-BICRO) ŠPELA ROZMAN DOLENC (LUI)	European Institute of Technology and Innovation (EIT) and European Innovation Council (EIC) are part of the Horizon Europe program. They support innovation at all stages, aiming to boost the EU's competitiveness.	research; ecosystem; innovation; spin-offs; fundrasing; EIT; EIC; accelerator; education; partnership; EU; Horizon;
DOING RESEARCH IN A STARTUP COMPANY DUBRAVKO BABIĆ (FER)	Scientific discoveries or fundamental technologies often originate in universities, providing opportunities for startups to commercialize these innovations.	startups; team; market; innovation; venture capital; investors; spin-offs; research; IP;
IP MANAGEMENT ALEXANDAR MUHR (TUG)	Intellectual property is essential for safeguarding innovations, attracting investors, and enabling the growth of businesses and industries. Different forms of IP offer distinct protections.	patents; copyrights; trademarks; IP; innovation;

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Startup Introduction

GETTING FAMILIAR WITH THE STARTUP WORLD

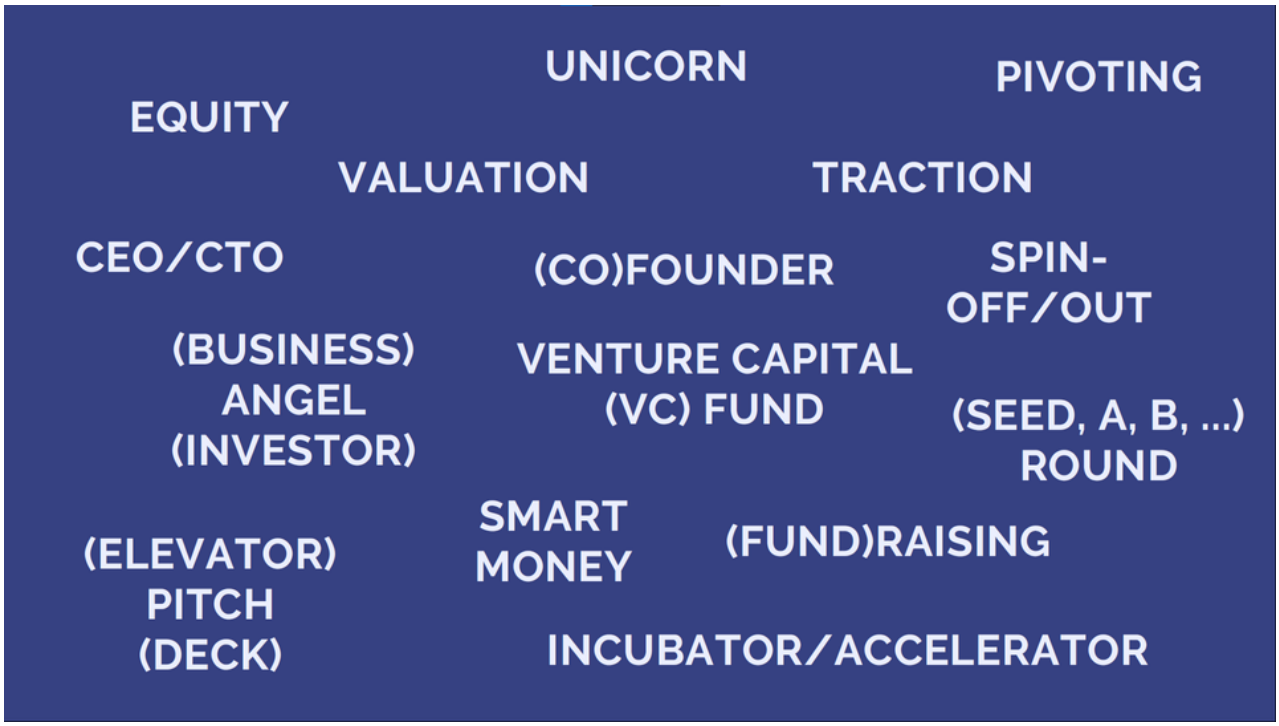
https://cogsteps.com/startup-introduction/ https://youtu.be/3sBUNqW90Sk

A startup is a newly formed and fast-growing company founded by one or more entrepreneurs to seek, develop, and validate a scalable business model. Initially, that company is confused about its product, customers, and revenue generation. When it figures these things out, it becomes a profitable business. Startups also have several specific characteristics, and some of the most important ones are innovativeness and potential for rapid growth.

To start with the best chances to succeed, startup founders need to think about three things: a **strong team**, a **viable idea**, and a **promising market**. Successful founders should have the vision to see the bigger picture and possess experience and specific knowledge and skills related to their startup domain.

A startup idea should **solve a real problem, have big potential**, and either **disrupt an existing big market or pioneer a new market**. Successful companies like PayPal and Facebook started by addressing real problems and seizing the right timing in the market, which is also very important for startups' success.

To navigate through this challenging journey, startups need to seek help from mentors, incubators and investors. Incubators help early-stage startups validate their ideas, while investors provide not just financial support but also invaluable knowledge and connections. After validating their idea, developing a product and acquiring their first customers, startups will enter the growth phase, focusing on scaling the product, expanding to new markets, seeking additional investments, and possibly planning an exit strategy through acquisition or an IPO.



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Lean Startup

BUILD-MEASURE-LEARN

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

https://youtu.be/DkHO_sdwx48

In today's fast-paced business world, startups have emerged as powerful players, offering unique advantages over larger corporations. They are more agile, flexible, and capable of disrupting industries with innovative solutions. However, to thrive in this competitive landscape, startups need to adopt a lean approach to innovation, focusing on **customer empathy and problem-solving**.

The core principle of lean innovation lies in understanding the customer's pain points deeply. By empathizing with their needs, startups can create meaningful and valuable products or services that resonate with the target audience. This means going beyond assumptions and conducting thorough interviews, surveys, and observations to gain invaluable insights.

To achieve success, startups must embrace **rapid iteration and hypothesis testing**. Instead of developing fully-fledged products, they build **minimal viable products (MVPs)** to gather real-time feedback from customers. This allows for informed decision-making and the ability to pivot when needed to achieve **product-market fit**.

Speed is a startup's competitive advantage. By leveraging their agility and quick decision-making, startups can outperform larger companies. Lean startup development enables entrepreneurs to navigate challenges, uncover customer pain points, and create transformative solutions.

Whether you are an aspiring entrepreneur or a seasoned startup founder, adopting lean innovation can be a game-changer for your venture.

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Pitch & Storytelling

LET ME TELL YOU A STORY

https://cogsteps.com/pitch-storytelling/ https://youtu.be/4iendrK_-u4

Pitching your startup idea can be nerve-wracking, but it's a crucial skill that can make or break your venture. It can be the key to securing funding, gaining customers, and propelling your business to success. Whether you're presenting your idea to investors, potential partners, or a competition jury, a well-crafted pitch can make all the difference

At its core, a pitch is a **concise and persuasive presentation of your startup idea or business plan**. It's an opportunity to showcase your vision, product, or service to potential stakeholders and convince them of its value and potential for success. A great pitch should be engaging, and compelling, and leave a lasting impression on the audience. A pitch comes in many different sizes and forms, like a One-Liner, an Elevator Pitch or a Three-Minute Pitch underlined with a pitch deck.

1. **One-Liner:** A concise sentence that describes the startup's purpose, target audience, and benefits, avoiding buzzwords and focusing on the problem-solving aspect.
2. **Elevator Pitch**: A brief pitch lasting 20 to 30 seconds, designed to capture the essence of the startup, addressing the problem, solution, and unique selling point.
3. **Classic Three-Minute Pitch**: A longer pitch typically used in startup competitions, providing a detailed overview of the startup's idea and potential.

The key elements of a typical pitch deck are a problem, solution, business model, market size, competition, traction, road map, team and call-to-action.

Storytelling in a pitch is very important, as it creates an emotional connection with the audience. Always remember who is your audience and make sure you tailor your story for them.

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Venture Capital “Schnellkurs”

UNDERSTANDING THE INVESTOR LANDSCAPE

https://cogsteps.com/venture-capital-schnellkurs/

https://youtu.be/c73pXhQ-oeg

Fundraising is a critical milestone for any startup, marking the transition from a vision on paper to a tangible reality. As exciting as it may be, the process can be complex and daunting, especially for early-stage founders.

Before diving into the fundraising process, it's crucial to understand the investor landscape. Early-stage startups typically go through multiple funding rounds, starting with seed funding and progressing to Series A, B, and beyond. Each stage brings unique challenges and considerations.

In the **early stages**, investors focus on the **team, the problem being solved, and the market potential**. As the startup progresses, the focus shifts to **metrics, revenue generation, and market domination**.

Investors want to see evidence that your startup is gaining traction and demonstrating growth potential. Being able to consistently show returns on marketing investments, understanding acquisition costs, and projecting realistic lifetime value are essential metrics to showcase.

Finding the right investors for your startup is just as important as the pitch itself. Look for investors whose investment thesis aligns with your **industry, development stage, and location**. Research their track record, reputation, and ability to provide **support beyond the capital**. Building a strong relationship with investors, implementing vesting agreements, and retaining control over your startup will set you on a path to long-term success. Remember, fundraising is not just about capital; it's about **finding the right partners to support your vision and drive your startup to new heights**.

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Getting funded by EIT and EIC

EUROPEAN INSTITUTE OF TECHNOLOGY AND INNOVATION, EUROPEAN INNOVATION COUNCIL

https://cogsteps.com/getting-funded-by-eit-and-eic/

https://youtu.be/6AIKGofK6gA
https://youtu.be/jsfMcTL2-WQ
https://youtu.be/SdRoahj0Ph4

In today's rapidly evolving world, innovation and entrepreneurship play pivotal roles in driving economic growth and societal progress. To foster this spirit of innovation and collaboration across Europe, the **European Institute of Technology and Innovation (EIT) and Europen Innovation Council** were established.

EIT is a vital EU body created to facilitate collaboration between leading companies, research labs, and higher education institutions. It is an integral part of the **Horizon Europe** framework and it focuses on fostering dynamic long-term European partnerships dedicated to addressing specific global challenges. Some of the example areas where EIT is addressing these challenges are manufacturing and health. Whether in the healthcare sector with **EIT Health** or the manufacturing industry with **EIT Manufacturing**, EIT's initiatives provide fertile ground for aspiring entrepreneurs to thrive.

The EIC is also part of the Horizon Europe program, with a goal to fuel scientific excellence and foster technological breakthroughs. The EIC's primary mission is to support innovation at all stages, from the earliest spark of an idea to a fully market-ready solution. It offers three distinct funding schemes, each tailored to cater to diverse innovation needs: **EIC Pathfinder, EIC Transition and EIC Accelerator**.

Navigating the EIC application process requires a deep understanding of the eligibility criteria and a well-crafted proposal that aligns with the scheme's objectives. To increase your chances, you need to work on **breakthrough technology**, focus on **turning inventions into marketable innovations**, understand your **market and customers**, and seek help from experienced individuals or organizations who have successfully completed the application process.

The accelerator programs, funding opportunities, and educational activities offered by EIT and EIC enable innovators to transform their ideas into reality.

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Doing research in a startup company

IF YOU HAVE A CHOICE, DON'T DO IT

https://cogsteps.com/doing-research-in-a-startup-company/

https://youtu.be/aVFi230V1yk

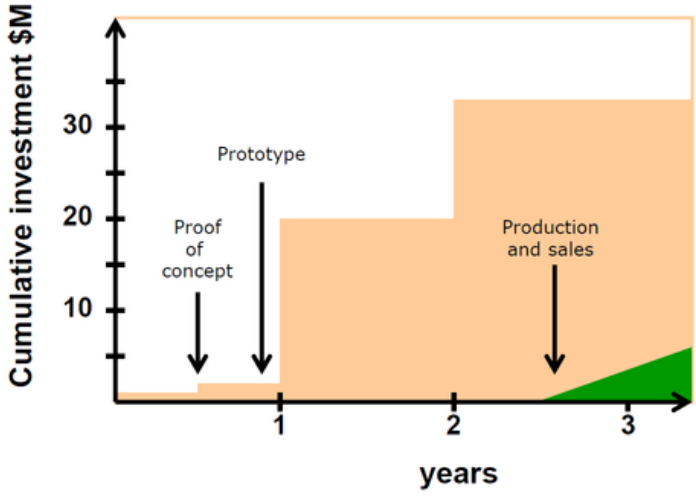
Startups can be classified into two extremes based on their innovations. Some startups **adapt existing technology** to create new products, while others venture into uncharted territories with **new technology that requires scientific development**. Both approaches have different challenges. Startups need to be aware of the market saturation risk and potential scientific development difficulties.

Developing a new technology can be particularly daunting and startups may face challenges like technical feasibility, time and resource intensiveness, high development costs, uncertain outcomes, intellectual property management, talent acquisition, market readiness and timing, regulatory compliance, scaling, and educating the market. To overcome some of these challenges, startups often seek support from **venture capitalists and private industrial investors**.

These investors are not just supporting you out of goodwill; **their primary goal is to make money**. They seek startups that have the potential for **disruptive innovations**, which can lead to **significant returns on their investment**. Understanding this perspective is essential for startups seeking funding and aligning their goals with the investors.

Embarking on a startup journey is not for the faint-hearted. It requires a **deep understanding of investors' motivations, meticulous financial records, and a clear vision for your technology's potential survival**. Knowing when to adapt existing technology and when to pioneer new frontiers can make all the difference in a startup's success. As you navigate the unpredictable waters of entrepreneurship, keep these insights in mind and chart your course towards a thriving and impactful startup venture.

From an idea to a product



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IP Management

FOSTERING INNOVATION, PROTECTING CREATIVITY, AND ACHIEVING COMMERCIAL SUCCESS

https://cogsteps.com/ip-management/

https://youtu.be/s9XzvWnsjZY

Intellectual Property (IP) management is a critical aspect of modern business and innovation. It encompasses various forms of protection, including patents, copyrights, trademarks, and trade secrets, which safeguard valuable intangible assets. Understanding the nuances of IP management can significantly impact the success and growth of businesses, researchers, and creators alike.

Patents play a central role in protecting inventions and technological advancements. To obtain a patent, an invention must be new, inventive, and applicable in an industrial context. By securing a patent, inventors gain the exclusive right to use, sell, or import their products or processes, preventing others from exploiting their ideas. This protection incentivizes innovation and investment in research and development.

Copyright protection is automatic upon creation and endures for a substantial period, fostering creativity while ensuring artists and authors can benefit from their works. For businesses, copyrights can secure proprietary software or marketing materials. **Trademarks** are essential for brand protection and recognition. By registering trademarks, businesses can distinguish their products and services from competitors. Additionally, **trade secrets** encompass valuable information that companies keep confidential to maintain a competitive advantage. Unlike patents or copyrights, trade secrets are not publicly disclosed, making them crucial for protecting proprietary know-how, manufacturing processes, or customer data. **Licensing** and exploiting IP rights can also be beneficial. By granting others the right to use or develop their IP, creators and companies can generate additional revenue streams and collaborate with partners for mutual benefits.

The different types of IP

Legal right	What for?	How?	Law
Patents	New inventions	Application and examination	Patent law AT: Öst. Patentgesetz Europe: EPC
Copyright	Original creative or artistic forms	Exists automatically	Copyright law AT: Öst. Urheberrecht Berne Convention, WIPO Copyright treaty
Trade marks	Distinctive identification of products or services	Use and/or registration	Trademark protection law AT: Öst. Markenschutzgesetz EP: Community Trademark Regulation (CTMR)
Registered designs	External appearance	Registration	Registered design law AT: Öst. Musterschutzgesetz EP: Community Designs Regulation (CDR)
Trade secrets	Valuable information not known to the public	Reasonable efforts to keep secret	-

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