

RUB



# YOUR IDEA. YOUR IMPACT.

Business start-ups at Ruhr University Bochum.  
In any field of study and research.

# JOIN OUR TEAM OF COURAGE AND INNOVATION!

Are you hoping to transform your idea, your expertise or your research findings into an innovative and marketable company? This Guide introduces you to all services and support structures provided by Ruhr University Bochum to aid your start-up process!

Ruhr University Bochum defines itself as a player in a globally networked knowledge society. We are convinced that the excellent research at the University constitutes the perfect foundation for shaping the world and, consequently, our region – the Ruhr metropolis – in a truly sustainable and innovative way!

Ruhr University Bochum ranks among the ten universities boasting the highest number of start-ups in Germany. The **WORLDFACTORY Start-up Center (WSC)** at Ruhr University supports spin-offs that are knowledge-based, have an international focus and operate sustainably in the market in accordance with the UN's Sustainable Development Goals. Following the example of the IT security Incubator Cube 5, established in 2017, we've now set up four more Incubators focusing on Ruhr University's cutting-edge research areas: Start4Chem, Materials, Smart Systems and Health+. The WSC offers interdisciplinary services for and with all faculties. Ruhr University students, graduates and alumni are welcome to analyze their start-up projects with our experts, to refine them and to make them ready for implementation. We offer female students

and early career researchers interested in starting their own business an exclusive platform to exchange ideas with like-minded people and with experienced female founders and experts in the entrepreneurial and start-up arena: **FACE@RUB** (Female Academic Entrepreneurs). The Center for Entrepreneurship, Innovation and Transformation (CEIT) at the Faculty of Management and Economics is also an important contact point for our female founders.

Centered around the WSC Makerspace, a start-up ecosystem with strong ties to Ruhr University spin-offs is flourishing on the Mark 51°7 site. Companies that were founded through Ruhr University Bochum, such as Physec GmbH, VMray GmbH and Escrypt GmbH, have already settled there. This spirit of innovation attracts an ever-growing number of high-tech companies in turn. With its successful spin-offs, the WSC is thus driving the transfer between science, business and society. Together with the Ruhr University's start-ups, we've compiled this Guide in order to support you in all your start-up endeavors. Are you in?

**Your team at the WORLDFACTORY Start-up Center (WSC)**  
Prof. Dr. Günther Meschke,  
Prof. Dr. Stefanie Bröring, Marco Seelbach,  
Florian Krohm, Michelle Twardzik,  
Melusine Reimers

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**1**

**WHY  
START UP  
AT RUB?**

# 1 WHY START UP AT RUB?

There is no ready-made formula for start-ups. We support each team individually. But there are methods that lead to success in a structured and efficient way. Our free consulting is based on the Lean Canvas model. It helps you to identify the potential of your business idea at an early stage and to prepare funding applications and pitch decks. Moreover, our Ruhr University Bochum method focuses on the “team” factor because the people with whom you start up your business play a key role in its success.



## WHAT DO YOU BRING TO THE TABLE?

There's a marked difference between the projects we support and incorporations or freelancers who generally finance themselves through entrepreneurial activity. If we realize during initial consultation that your project doesn't fall within the scope of innovation start-ups, we'll be happy to put you in touch with a contact within our network that matches your profile.

Are you studying or working at Ruhr University Bochum, are you an alumnus/alumna or would

you like to gain Ruhr University as a partner for your science-based start-up? If any of these apply to you, we'll be happy to assess in an initial consultation whether we are the right fit for you. We assign a suitable person from our coaching team to all start-ups. Just like in top-class sports, these coaches work out an individual “training plan” together with you once the consultation begins. Each coaching process is outlined in a joint coaching agreement. The timing of your coaching will be adapted to your plans and your individual life situation.

## IS YOUR START-UP IDEA INNOVATIVE?

Did an idea occur to you during your studies, your doctorate or other research projects that the world out there might benefit from? If so, we can help you transform that idea into a business model. As a university start-up center, we are responsible for innovation start-ups, not incorporations. Accordingly, we accompany start-up projects that are knowledge-based and/or have an international outlook and pursue a social impact. An innovation start-up is based on scientific IP (intellectual property), patents and even findings

### The coaching agreement includes:

- regular meetings with your coach (at least once a month)
- preparation for funding applications
- dedicated workshops and professional consultations
- third-party competitions or programs
- development of prototypes in the Makerspace
- mentoring
- IP consulting
- provision of premises





in the field of the humanities/social science. This often means long time-to-market, high investment costs and complex applications. In most cases, the goal is to solve a social problem or to bring something to market for a specific industry or target group that doesn't yet exist in this form. In addition, your start-up project should be geared towards growth – even if you want to take it slowly at first.

#### ARE YOU A START-UP PERSONALITY?

Is there such a thing as the quintessential start-up personality? Certainly not. The people who shape innovation projects are as diverse as the projects themselves. Moreover, start-up personalities are not lone heroes, but team players. And the best teams combine different talents.

You can assess yourself to see if you have any of the following qualities that are critical to success: motivation, courage, perseverance, responsibility, expertise, self-organization, self-discipline, flexibility, frustration tolerance, crisis resistance, decision-making power and powers of persuasion.

#### USEFUL LINKS:

- **Business start-up in Bochum**  
<https://www.bochum-wirtschaft.de/english/dienstleistungen/gruendungsberatung/>
- **Bochumer Gründungswettbewerb**  
<https://www.senkrechtstarter.de/>
- **Start-up Incubator Crealize**  
<https://www.crealize.com/>



**Business start-up in Bochum**



**At the very heart of the business – The start-up personality**



**Start-up advisor "Are you the entrepreneurial type?"**

**Start-up entrepreneurs are forced to navigate tense environments all the time. What makes you tick? Discuss the following questions with your team:**

#### Action vs. Reflection

You have to get started without delay, but one or two hours of reflection a week, alone and in the team, is still useful. Are you on the right track?

#### Spontaneity vs. Reliability

Both are necessary. Spontaneity has its limitations when tasks or meetings are agreed upon. Then, it's all about reliability. Don't be a risk-taker!

#### Expertise vs. Comprehensibility

Professional competence is only effective when it's shared. Engage with your partners, their interests, prior knowledge and culture. Think systemically!

#### Control vs. Trust

Are you more of a control freak or do you tend to trust? Sure, control costs time, but so does betrayed trust. Find the right balance!



# CAN YOU LEARN TO BE A FOUNDER?

**Our answer is: Yes!** There are methods that help you develop your own ideas and acquire competencies to implement these ideas. Entrepreneurship Education provides an overview of such methods. Ruhr University Bochum offers a number of basic modules, seminars and workshops on entrepreneurship education. What characterizes successful entrepreneurs? What competencies do they need? And how can this knowledge, skills and personality traits be promoted and evaluated?

These are the questions addressed by the Entrepreneurship Education team at the WORLDFACTORY Start-up Center. With the certificate Entrepreneurship Education issued by the Center for Entrepreneurship, Innovation and Transformation (CEIT) and other optional modules taken in elective courses, students interested in starting up their own business can expand and prove their competencies.

## THE CEIT AT RUHR UNIVERSITY BOCHUM

The Faculty of Management and Economics at Ruhr University Bochum has established the CEIT in order to develop future perspectives in regional networks and to bring together all parties interested in entrepreneurship, innovation and transformation. The CEIT combines expertise in business administration and economics and serves as a link and catalyst for economic projects in research and industry.

The Chair of Entrepreneurship and Innovative Business Models at CEIT has developed a holistic teaching approach based on the concept that entrepreneurial learning can be fostered through realistic case studies and immersive teamwork. The "Business Model Design Lab" offers students the opportunity to collaborate with a regional start-up or a projected spin-off of Ruhr University Bochum to design a business model.

Our goal is for graduates of Ruhr University Bochum to consider starting their business a viable option. The University's departments already offer many modules that teach start-up skills. We are expanding these programs and systematically linking them in the EntreComp Framework.

Go here for an overview of Entrepreneurship Education at Ruhr University Bochum:

- <https://www.worldfactory.de/en/entrepreneurship-education>
- <https://www2.wiwi.rub.de/en/chair-projects/business-model-design-lab/>
- <https://www2.wiwi.rub.de/en/fields-of-competence/ceit/>
- <https://www2.wiwi.rub.de/en/chairs/eship/>

The certificate:

- <https://www2.wiwi.rub.de/en/zertifikat-entrepreneurship/>





# HOUSE OF PLASMA

Measurement technology for nanocoatings

Geoffrey Mellar, Maria Schnober and Dr. Moritz Oberberg helm the House of Plasma, a company whose product is a multipole resonance probe. This probe enables companies that use physical plasma to apply nanocoatings to workpieces in order to monitor their high-performance equipment.

**House of Plasma GmbH is a spin-off from in the field of engineering technology. What can your probe do that other measurement technology can't? What is plasma and why is it so unique?**

**MORITZ:** Plasma can be described as the fourth state of matter: when temperature increases, solid is followed by liquid and gaseous is followed by plasma. Plasma releases charge carriers. Thus, plasma is a highly efficient cross-sectional technology, a tool that is used in the chip industry, in medical technology and in optics. Until now, controlling systems that work with plasma without interference has only been possible from outside the plant. Our probe provides meaningful measurement data from inside the plants in real time and without interference and without affecting the production processes.

**How did your start-up team come together?**

**MORITZ:** Our project started back in 2006 under the auspices of Professor Ralf Peter Brinkmann from the Institute of Theoretical Electrical Engineering. At that time, the institute also applied for a patent for the technology. When I joined the research team, a number of theoretical papers and research projects had already been completed, and industry was beginning to show great interest. That encouraged me to initiate a spin-off.

**GEOFFREY:** I joined the team not long after. Moritz was looking for support with electronics and software. After working in industry for two years, the project and the start-up perspective appealed to me.





*“At first,  
we focused  
exclusively  
on technology.”*

Moritz Oberberg

**MORITZ:** Maria was the last to join us. We urgently needed business management expertise. Maria was writing her master's thesis on House of Plasma and we asked her to join us as a co-founder.

**Which consulting services provided by WORLDFACTORY did you take advantage of?**

**MORITZ:** We are engineers. At first, we focused exclusively on technology, all we saw was the solution and we wanted to bring it to perfection. The WORLDFACTORY consultants have honed our eye for the entrepreneurial aspects. Now we have Maria, who at times puts us back on track and introduces the economic perspective. The WORLDFACTORY advisors have aided us through the application process for the Start-up Transfer.NRW funding project and later for funding via EXIST Research

Transfer, supporting us all the way from the initial consultation through pitch training to the submission of the funding applications. Through the network, we received support for shooting our videos for the pitches, took advantage of coaching on business organization and accounting and exchanged ideas with the legal experts regarding the contract for the takeover of the patents from Ruhr University Bochum. Next, we'll be using the Makerspace to shoot product photos.

**By now, you've also won quite a few awards ...**

**GEOFFREY:** We took first place in the Bochum competition Senkrechtstarter 2021 and also received an award for "Best University Spin-off". At the RWTÜV Start-up Award 2022, we received generous prize money for 1st place.

**BEST PRACTISE:** HOUSE OF PLASMA

And also in 2022, we received the "Digital Innovation" start-up award from the German Federal Ministry for Economic Affairs and Climate Action.

**But a company can't finance itself "only" through competitions and prize money ...**

**MORITZ:** The EXIST funding will expire in the fall. We'll be looking for financing opportunities to continue refining our products: we are planning to contact business angels, aim for a convertible loan from NRW.Bank and approach smaller investors who are genuinely interested in our products. We do of course

want to grow and expand our portfolio – but always retain the decision-making power over our products on our own terms.

**Thank you for the interview. We wish you a healthy and self-directed growth.**

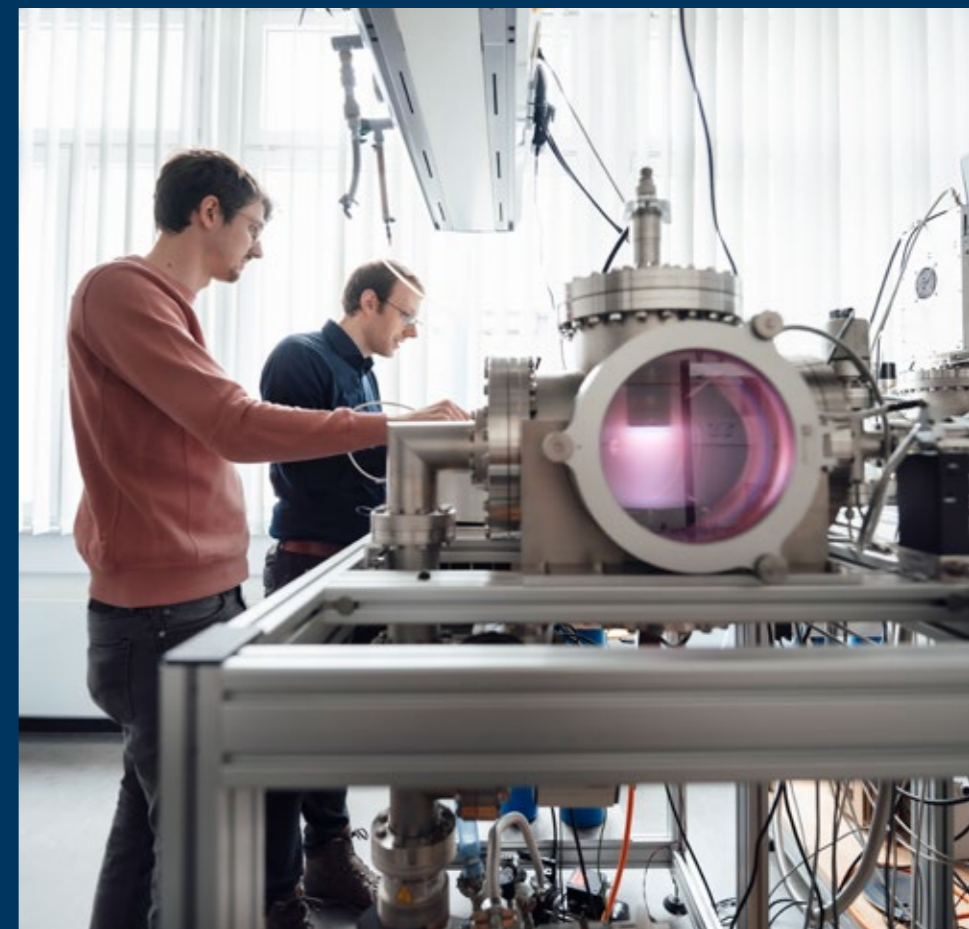
**We spoke to:**

Dr. Ing. Moritz Oberberg and Geoffrey Mellar, M.Sc., research assistants at the Chair of Applied Electrodynamics and Plasma Technology and founders and managing directors of House of Plasma GmbH  
[www.house-of-plasma.com](http://www.house-of-plasma.com)

## MEASURING PLASMA PARAMETERS

Moritz Oberberg (l.) and Geoffrey Mellar test their probe in the experimental setup.

Co-founder Maria Schnober (not in the picture) looks after the finances.

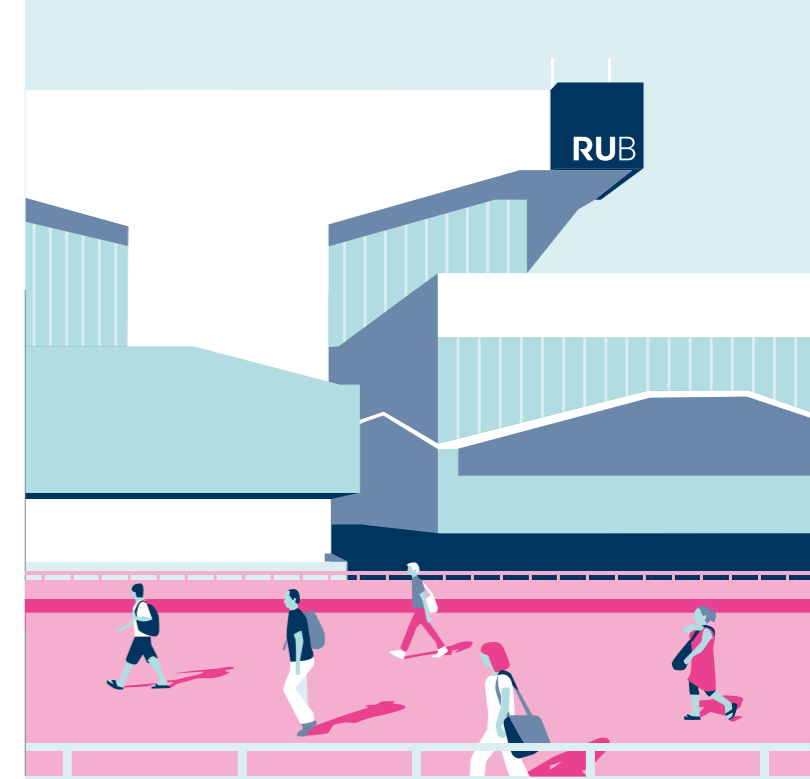


**2**

**HOW DO I START  
UP AT RUB?**

## 2 HOW DO I START UP AT RUB?

You've decided to turn your idea into a company? We're looking forward to it! We know that complex scientific innovations take time until they are ready for the market. We understand the circumstances when founders are still studying, pursuing their doctorate or are involved in research projects. We support you in all phases of your start-up so that you don't lose your way.



### WHO ADVISES YOU?

The RUB Academy is our competent partner for workshops and expert consultancy. With 21 faculties, Ruhr University Bochum generates a wealth of start-up ideas and innovations. As a rule, start-up teams from all disciplines and research areas are welcome. If you require customized consulting services that are not covered by the RUB Academy, our coaches will organize them for you on an individual basis. Moreover, the five Incubators affiliated with the faculties of Ruhr University Bochum provide start-up entrepreneurs with additional subject-specific support.

**Our start-up consultancy includes several mandatory modules to cover the basic entrepreneurial skillset:**

- Lean Canvas workshop
- pitch training
- team-building workshop
- customer development workshop
- sales coach

**Moreover, all interested parties are welcome to attend general workshops of the WORLD-FACTORY Start-up Center:**

- money talks
- networking events
- keynotes

In addition, dedicated workshops and expert consultations are held to work directly with the founding teams on the business model. Each workshop helps to take your start-up idea a little further into the implementation phase.

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READ MORE:

- **RUB Academy:**  
<https://international-academy.rub.de/>  
<https://www.akademie.rub.de/gruender-innovationsmanagement/>
- **Incubators**  
<https://www.worldfactory.de/en/focus-topics/seite>

# WHAT IS OUR APPROACH?

The days when products designed on the drawing board achieved sales success are long gone. Today, customers can choose from a sheer infinite wealth of products, many markets are saturated, and design, sustainability and individuality play an important role alongside function. In order to be marketable, products and services must be innovative and consistently geared to customer benefits. But how do teams get from idea to innovation?

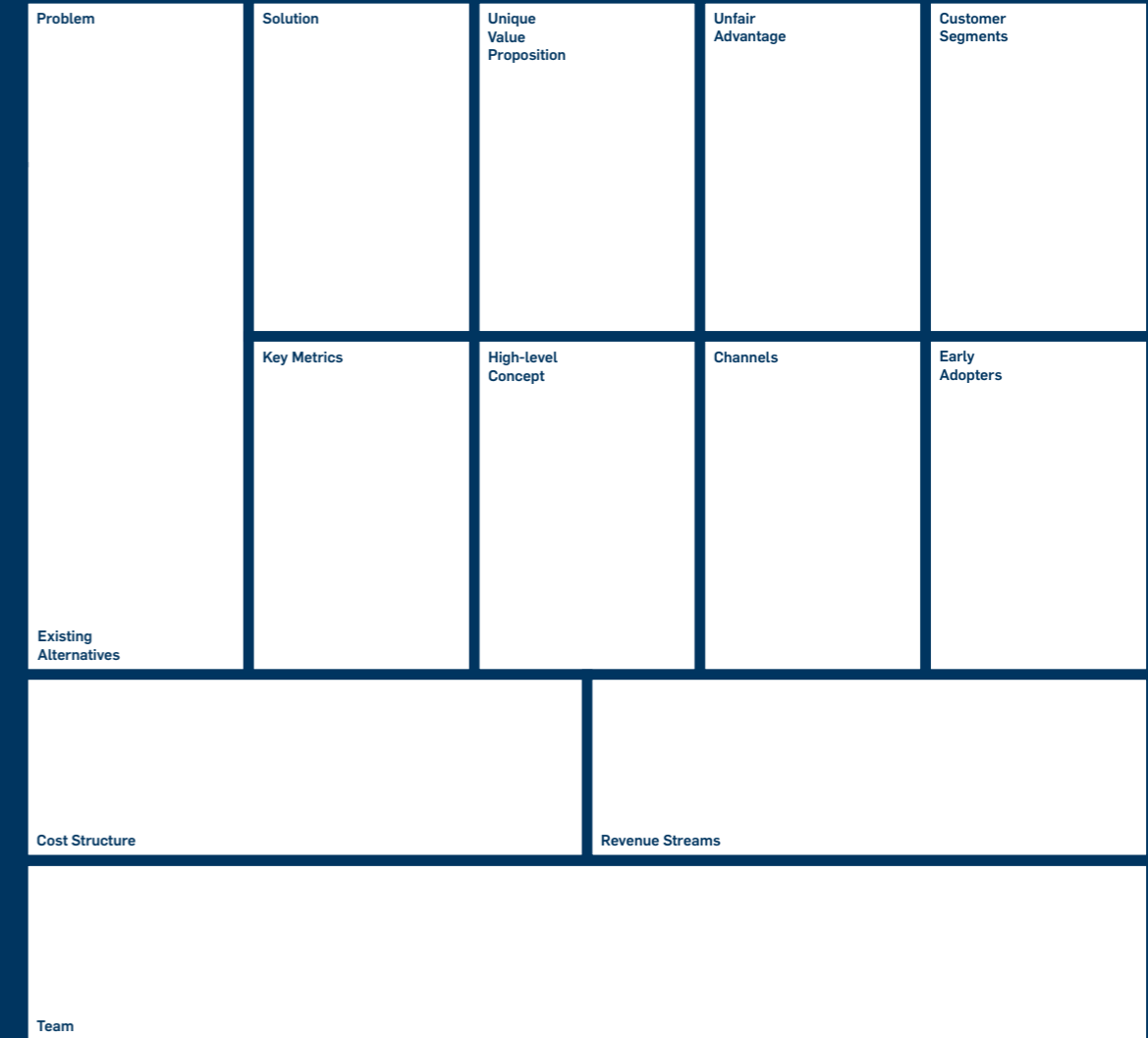
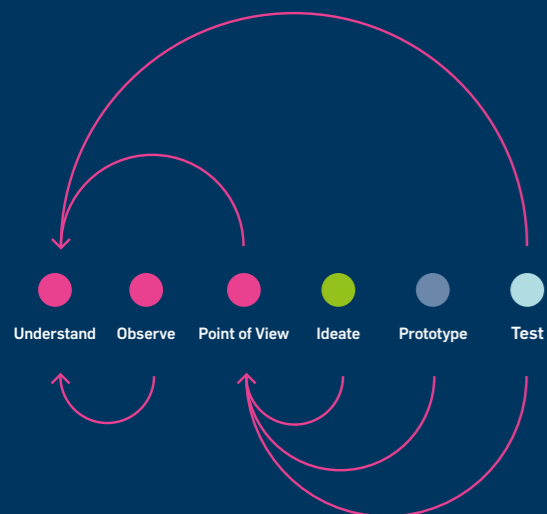
## DESIGN THINKING

As part of its portfolio, WORLDFACTORY offers seminars on design thinking, a method that helps to develop customer-centric products or services. Developed at Stanford University, design thinking is based on the assumption that problems can be solved more effectively when people from different disciplines work together. They jointly develop and address specific questions, analyze target groups and eventually design concepts or prototypes that are tested several times together with the users.

## THE LEAN CANVAS METHOD

Our start-up consultations are based on the Lean Canvas method. It is especially helpful if you want to refine, challenge and hone your start-up idea. In the course of the consultation, we walk you through the Lean Canvas model in a structured way. It combines theory and practice: you will not only develop a business model, but also learn all the necessary skills for a successful business – from conducting customer interviews to creating financial plans.

## THE 6 PHASES OF DESIGN THINKING



## LEAN CANVAS

## OUR TOOLBOX

We've compiled a toolbox on our website. In it you will find useful templates and tools such as pitching guides, checklists for funding programs, our Lean Canvas model, a Persona Canvas tool to help you get to know your potential customers, and a Design Canvas tool to help you create your product design.

## Put your idea to the test with our tools!

<https://www.worldfactory.de/en/consulting/toolbox>

## READ MORE:



Lean Canvas model for your start-up



Lean Canvas Example: "Uber"

# FACE@RUB

FACE@RUB stands for Female Academic Entrepreneurs and is the Incubator for female founders at Ruhr University Bochum. We wish to inspire female students and young academics to pursue their own start-up ideas and to engage with female entrepreneurs. Why a dedicated program for women in the start-up community? The percentage of women starting their own businesses is still low. This is particularly true for start-ups. Only 20.3% of start-up founders in 2022 were female, and their numbers are only slowly increasing.

FACE@RUB offers female students and junior academics interested in setting up their own business a platform to exchange ideas with like-minded people and to get in touch with experienced female founders and experts from the entrepreneurial and start-up sector. We want to show that start-ups don't have to be a male-dominated domain and are just as diverse as the founders with whom we work. After all, the one golden path to a successful start-up does not exist. But there are numerous models to achieve success, other than being a sole proprietor or launching a million-dollar start-up. You just have to know them.

#### READ MORE:

- <https://face.rub.de>
- <https://www.worldfactory.de/en/fokusthemen/face-female-academic-entrepreneurs-1>
- <https://www.worldfactory.de/fokusthemen/face-female-academic-entrepreneurs>
- <https://face.rub.de/veranstaltungen/>



**Female Academic  
Entrepreneurs  
at RUB**





## HOW ARE PROTOTYPES CREATED?

Prototypes serve a number of purposes: you can test whether your idea can be implemented. And you can demonstrate your product or service to other people and exchange your views on it. Prototypes also help you to create a successful start-up in the shortest possible time with the least possible effort – and depending on the product or idea, you can use different methods and approaches.

### THE MINIMUM VIABLE PRODUCT

A Minimum Viable Product (MVP) is the smallest and simplest implementation of your idea or hypothesis, equipped with only the most necessary core functions. Whether it's the landing page of an internet-based product or a simple sketch on paper, the MVP is designed to help you engage with your target audience and stakeholders.

### THE BUILD-MEASURE-LEARN APPROACH

Once your MVP is built and measured, the learning phase follows. In the process, you draw conclusions from your prototype tests and develop the next, improved generation of your prototype, an update so to speak. You repeat this pattern and improve your product with each iteration, making it more sophisticated and complex over time. In the process, a sketch may be followed by a cardboard model or click-dummy, all the way to a so-called Series 0 prototype, i.e. the first design that can be made

fit for mass production. Our Makerspace provides support for prototyping and MVP development.

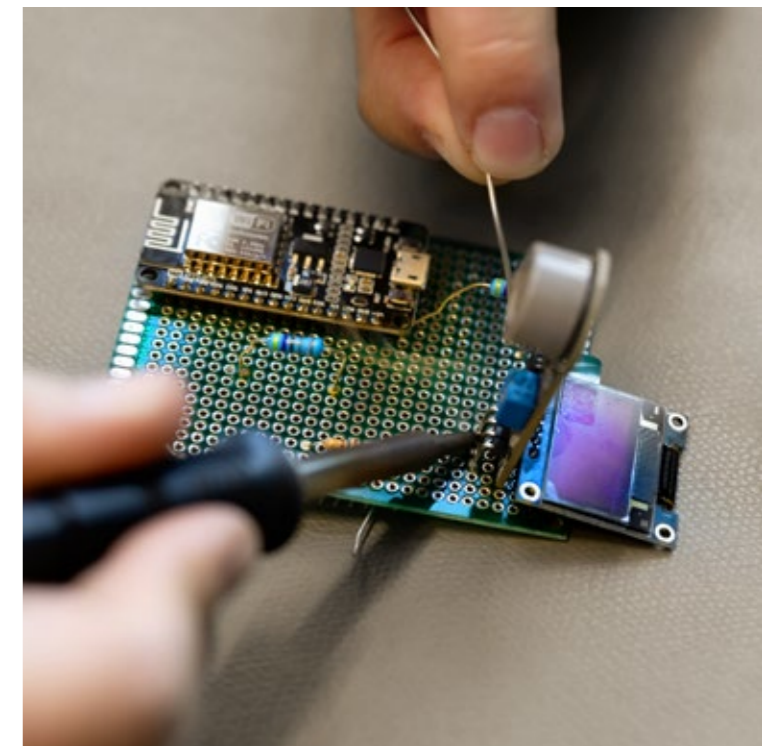
### WHAT KIND OF INFRASTRUCTURE IS AVAILABLE?

Innovations need space. For team meetings, events, conferences, for developments and trials. The WORLDFACTORY cosmos offers you extensive possibilities at various locations in Bochum. Our Makerspace is unique in Germany! Almost 2000 m<sup>2</sup> of space on the former Opel site Mark 51<sup>o</sup>7 are the playground used by founders at the WORLDFACTORY Start-up Center and by Ruhr University Bochum students to test innovative ideas in practice.

### LABS

For start-up teams that need specialized lab technology, our five dedicated Incubators for IT Security, Health, Materials, Chemistry and Mechanical Engineering offer even more options.

In our labs, tinkering, trying out and testing is both allowed and encouraged.



## THE RUB MAKERSPACE

The Ruhr University Bochum Makerspace houses top-of-the-range workshops for woodworking and metalworking, 3D printers, laboratories for textiles, media and electrical engineering as well as state-of-the-art IT infrastructure. It is the ideal place to realize your idea – regardless whether software, hardware, service or product. Here, you will find methodical support and advice and, above all, everything you need to tinker, build, present and develop.

- **design lab** (3D printer, 3D scanner, laser cutter and VR/AR goggles)
- **textile lab** (sewing, embroidery and knitting machines)
- **media lab** (photo and video cameras, streaming equipment and sound studio)
- **digital lab** (microcontrollers, measuring devices, soldering stations)

- **metal workshop** (welding corner, sheet metal working and CNC technology)
- **wood workshop** (sliding table saw, vacuum press and CNC technology)
- **plastics workshop** (SLA and SLS 3D printing, thermoforming machine and vacuum casting)

**Other workshops and labs, including pottery and cooking, are in planning.**



### Your contact for the Ruhr University

**Bochum Makerspace:**

Dirk W. Hansmeier

Phone: +49 (0)234 32-29541

[makerspace@rub.de](mailto:makerspace@rub.de)

<https://makerspace.ruhr-uni-bochum.de/en/>



## TEXTILE LAB

Sewing, embroidery and knitting machines are available in the Ruhr University Bochum Makerspace.



## DESIGN LAB

3D printers, 3D scanners, laser cutters and VR/AR glasses push prototyping to the next level.



# DO YOU KNOW YOUR TARGET GROUP?

Knowing your target audience is essential to the success of your product or service. Many start-up projects fail because founders overestimate the need for their innovation or get bogged down in details and personal preferences.

Love the  
problem, not  
your solution.



## WHAT IS A TARGET GROUP?

Your target group is people or companies who have similar needs or desires, or where it makes sense to create a need first. You are only on the right track when you understand exactly what challenges your customers are facing and what problems your product or service is supposed to solve for them. The solution you have in mind is not critical to begin with, and it can even change over time if you adapt it to the target group.

Tools and methods do exist for target group analysis. You will get an overview of them in our regular Customer Development Workshop. Your coaches will advise and assist you when it finally comes to the concrete target group research for your start-up idea.



THE RULER

THE INNOCENT

THE SAGE



THE REBEL

THE HERO

THE CREATOR

## WHAT ARE EARLY ADOPTERS?

“Early adopters” are customers who are the first to be approached by providers when products are launched. This target group likes to use a company’s latest innovations or – relevant for start-ups – has exactly the problem that your product or service can solve. How do you find “your” early adopters? This is where the S-P-A method comes into play. S-P-A stands for Size, Problem and Access. Using these categories and a point system, you can track down your target group.

## METHODS OF TARGET GROUP ANALYSIS

- market segmentation and analysis: screening of Google Alerts, articles, studies and reports etc.
- surveys of potential customers
- definition of personas
- definition of early adopters using the S-P-A method
- qualitative customer interviews using the MOM test



# HOW DO I WANT TO EARN MONEY?

**Who earns money in a company and how? Which social changes does a company bring about? What is the core business of a company? These questions will lead you to the business model of your start-up.**



## DO YOU HAVE A BUSINESS MODEL?

A business model describes how a company operates, generates value and makes profits. As the very word “model” suggests, it is an abstraction of entrepreneurial reality. And depending on the industry, product, service or complexity, it requires more or less explanation.

A traditional business model is the sale of goods or services. You’ll be familiar with leasing models from car or hardware purchases. Large system catering chains often use franchise systems. Licensing models are increasingly used for software or online entertainment. Banks, purchasing cooperatives or housing projects use cooperative models. Associations, foundations or social institutions too are companies that create value: social enterprises.

Start-up entrepreneurs should be able to describe the inner logic and functioning of their company. Based on a business model, the profit, growth and impact strategies of a company can be identified. The team at the WORLDFACTORY Start-up Center will help you to set up a suitable business model and to evaluate it.

In this process, it will become clear how much capital and which partners you will need for the launch. To convince banks, investors, suppliers and cooperation partners to support you, you will need a business plan.

## WHAT IS A BUSINESS PLAN?

A business plan describes what kind of services and products a company offers, what the main benefits of its portfolio are and what vision, goals and strategy the start-up is pursuing.

## PLEASE NOTE:

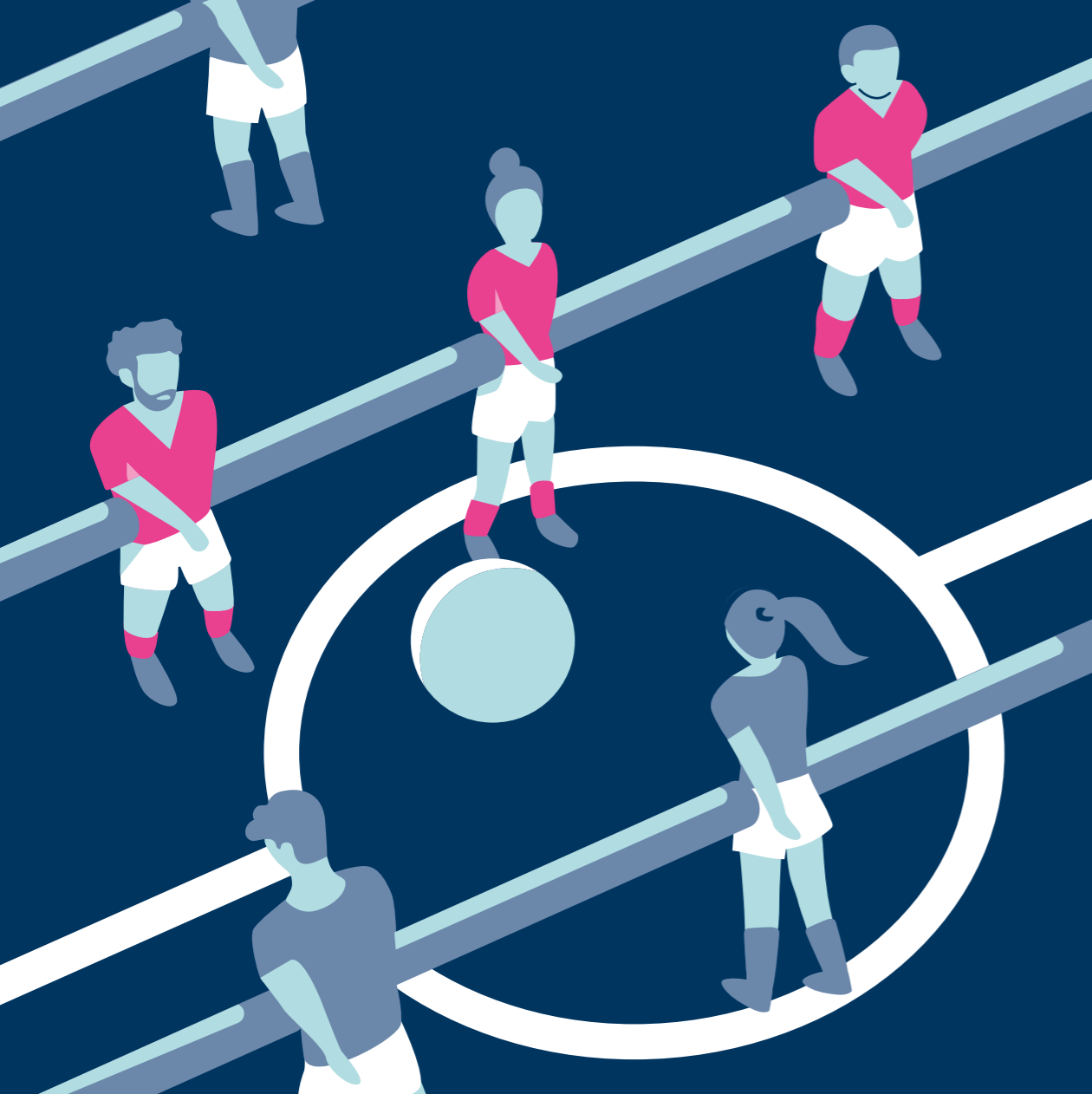
You will find good templates for the structure of business plans on the Internet. But please always make sure that the sources are trustworthy! If you have any questions, please don’t hesitate to contact the start-up advisors at WORLDFACTORY. Before you submit your business plan to a bank or to investors, find out what kind of structure your future investors expect.

For this purpose, you must explain the opportunities and risks involved in the implementation of your project, justify the choice of location and present a sales and marketing strategy tailored to the target group. In addition, you must present your team and its full range of competencies.

The core of a business plan is the financial plan. Which costs will you incur for purchasing materials, salaries, rent, licenses or insurance, and what is your expected income? A well-structured, clear and credible business plan will convince potential investors, and it will also serve as a compass for you and your team – even if there are bound to be some changes and adjustments along the way.

## READ MORE:

- <https://www.worldfactory.de/en/consulting/start-up-consultancy>
- <https://gruenderplattform.de/en>
- <https://www.worldfactory.de/en/consulting/toolbox>
- <https://gruenderplattform.de/businessplan>



## HOW DO I BUILD THE PERFECT TEAM?

“It’s all about the team!” What was confirmed in 2021 by the study “Why don’t Germany’s researchers start up?” is a phenomenon we experience on a regular basis: university start-ups fail less often due to the lack of innovation of their idea or the lack of funding opportunities than due to the composition of the team.

### TIPS FOR SUCCESSFUL TEAMS

- **Interdisciplinarity:** Your respective areas of expertise should complement each other as much as possible rather than duplicate each other.
- **Diversity:** If not everyone shares the same reality of life, it requires more coordination, but it also fosters creativity.
- **Clear roles:** Not everyone has to be able to do everything. Division of labor is always helpful.
- **Regulated processes:** Define communication channels, the rhythm of your meetings and the flow of project management!
- **Regulation of working hours:** Especially in the case of research-intensive start-up projects, we strongly recommend that you reach a contractual agreement in advance about the weekly (at this stage usually still unpaid) working hours per team member, possible shares and exit scenarios.

Feel free to take advantage of our team building and project management workshops!

### THE HACKER-HIPSTER-HUSTLER PRINCIPLE

Successful start-up teams map out at least the following three roles:

- **Hackers** relentlessly pursue implementation in the engine room of your team.
- **Hipsters** are the people who are familiar with and understand the problem of the target group that you intend to solve with your idea – possibly even from experience.
- **Hustlers** are often business graduates or people with a good understanding of numbers and the market economy.

READ MORE:

- <https://wupperinst.org/a/wi/a/s/ad/4874>
- <https://www.wirtschaft.nrw/en>

### LOOKING FOR CO-FOUNDERS?

You have an idea for a start-up and are currently on your own? If so, feel free to reach out to us! We might have a recommendation for you. Or have a look around at our networking events. Many teams have already found each other at these events and have gone on to be successful. We also cooperate with the WHU – Otto Beisheim School of Management (known for its strong entrepreneurship focus). There, you will find business students with start-up experience. It might also be worth searching via the university job portal “Stellenwerk”.





# LIDROTEC

Wafer dicing in Silicon Pott

Highest precision in cutting microchips and microelectronic components – made possible by a system by Bochum-based LIDROTEC GmbH. Four friends hope to revolutionize the market of the semiconductor industry with their system for wafer dicing.

### **What came first, the founding team or the product idea?**

The engineering core team of the company – Jan Hoppius, Alexander Kanitz and Jannis Köhler – found each other while studying at Ruhr University Bochum. All three studied laser application technology at the Department of Mechanical Engineering. Over meetings in the institute's break room, it emerged that all three had the firm intention of setting up their own business. Product development was built on the shared competencies and an analysis of which technology could revolutionize the semiconductor market. I later joined the team through Alexander Kanitz, with whom I'd graduated from high school. I left a well-paid job in the financial sector, because I'm convinced that the three of them have created a unique innovation. We now have twelve employees on the payroll, by the way ...

### **What can the LIDROTEC GmbH system do that other systems can't?**

Microchips are produced on approximately pizza-sized plates and then have to be cut out – this is referred to as wafer dicing. The

microsized components are either sawed or cut with a laser – both methods cause mechanical stress, up to 20 percent of the chips are not usable when processed with conventional cutting equipment. Our system combines the laser with a liquid, cuts chips without any damage and thinner than the competition.

### **Which role does the WORLDFACTORY of Ruhr University Bochum play in your founding story?**

We set up our company with the support of the funding program EXIST. EXIST focuses on the transfer from research to the market. The WORLDFACTORY experts were extremely helpful in moderating and controlling the process between the highly talented inventors and me, the financial expert, with a view to the funding requirements.

### **Plant engineering is a cost-intensive business. How did you finance the launch?**

We received 900,000 euros through EXIST, half of which went towards our salaries for 18 months and the other half into the materials for our prototypes. In addition, we



### A MODEL OF THE PLANT

is installed in the meeting room of LIDROTEC GmbH in Bochum

There's a lot of expertise in the Rhine-Ruhr region, which is a huge advantage given the shortage of skilled workers in Germany. Germany is definitely interesting as a semiconductor location. There are some who refer to the industries in Saxony as Silicon Saxony. We will shape the Silicon Pott. Our long-term goal is to become the international world market leader for laser cutting machines.

**Thanks for the interview and all the best on your way to becoming an international player!**

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### We spoke to:

Alexander Igelmann, financial expert (Master of Science in Finance and Economics) and CEO & Co-Founder of Lidrotec GmbH

*"I'm convinced that our engineering team has created a unique innovation."*

Alexander Igelmann

acquired a start-up loan from NRW.BANK as well as funds from business angels and other funding programs.

### Do you continue to collaborate with the department where your three colleagues worked?

Our prototypes were created there. We are currently building the first C machines as pilot systems. Our pilot system for demonstration purposes and the series systems will later be set up or built, respectively, in our own production hall, the expansion of which is almost complete. One of the pilot systems is being integrated into production at one of our customer's facilities. We're not making any money yet with this system. On the plus side, we're exempt from liability and guarantees. Instead, the company reimburses us with time and feedback that we can use to make improvements.

### Are you aiming to internationalize your company?

Bochum is the ideal business location.



3

HOW DO I GET  
TO **MARKET?**

### 3 HOW DO I GET TO MARKET?

So you're ready to complete the start-up phase with your team and go to market. Since university spin-offs are often based on technology transfer, refine research results and open up career options for students, graduates and even established researchers, you can benefit from dedicated financing models. The **WORLDFACTORY** also offers you ongoing access to the infrastructure, skills and ecosystem of Ruhr University Bochum.



#### MENTORING – INDIVIDUAL SUPPORT

No matter if you wish to refine your business idea, are planning market entry or hope to solve business challenges and questions – the **WORLDFACTORY** mentoring program supports start-up teams highly effectively. All teams that have been given start-up advice by **WORLDFACTORY** and have evaluated their business model together with us are eligible for this scheme. You'll be assigned experienced specialists and executives using a proven matching system. Mentoring is designed to last twelve months and is accompanied by a supporting program by **WORLDFACTORY**. Most tandems develop into long-term partnerships that are beneficial for both parties.

#### WHO PROVIDES ADVICE ON KNOWLEDGE AND TECHNOLOGY TRANSFER?

Ruhr University Bochum has set itself the goal of making a significant contribution to overcoming major societal challenges. This is achieved by transferring scientific knowledge into business practice. In addition to **WORLDFACTORY**, there are actors at Ruhr University Bochum or associated with it who advise on transfer topics and provide educational offers:

- The “Transfer and Entrepreneurship” department offers advice and compact

seminars, workshop series and information events on a variety of topics, such as communication, cooperation and funding opportunities for application-oriented research.

- **The RUB Academy** provides qualifications as Chief Innovation Manager (innovation management certificate course).
- **PROvendis** is an IP academy for universities and start-ups that offers free courses on patent and copyright law as part of the NRW University IP Association.
- There is close cooperation with the organization **Young Entrepreneurs in Science (YES)**, which has developed a wide range of workshops for researchers interested in starting a business.

#### READ MORE:

- **Mentoring program**  
<https://www.worldfactory.de/en/beratung/mentoring>
- **Transfer at RUB**  
<https://transfer.ruhr-uni-bochum.de/en>
- **RUB Academy / Chief Innovation Manager**  
<https://www.akademie.rub.de/zertifikatskurse/chief-innovation-manager-v2>
- **PROvendis**  
<https://provendis.info/en/>
- **Young Entrepreneurs in Science (YES)**  
<https://youngentrepreneursinscience.com>

# HOW DO I RAISE INITIAL FUNDS?

No matter how good your idea is, no matter how innovative your process is – that alone will not lead to business success. In order to survive development phases and manage the company development, you'll need start-up capital. We'll help you find suitable sources of financing so that you have sufficient liquidity to build and expand your business.

Find out  
more in our  
financing  
seminars!



How much equity can you bring in? Who will give you outside capital and what level of investment is realistic? Do you want to allow donors to acquire shares in your company and gain influence through this channel? Do you meet the criteria for public funding loans, which usually improve liquidity in the first few years after founding through a repayment-free start-up phase?

Join our financing seminars to get clear on these questions! This statement also applies to the financing model: there is no ready-made formula, everything has its advantages and disadvantages. Examples include:

## **BOOTSTRAPPING**

Anyone who brings their own private investments into a company gains independence and freedom. Using your own resources for a lean launch of your start-up project in order to make profit as soon as possible is referred to as bootstrapping.

## **START-UP LOAN**

Bank loans must be repaid to the respective bank along with interest within a specified time.

House banks and state banks (here in North Rhine-Westphalia the NRW.BANK) or other development banks, for example the KfW bank, grant special start-up loans. Ask for advice!

## **BUSINESS ANGELS**

Investments by investors often don't have to be repaid. In return, you give up part of your decision-making power. Interacting with investors can have advantages: if they are experienced, trustworthy people, they can bring in know-how or valuable contacts. Business angels, for example – private individuals who are often entrepreneurs too – often join start-ups in the early stages in order to push them forward.

## **STATE EQUITY CAPITAL**

State equity capital or mezzanine capital is also an option for establishing secure start-up financing. Through programs such as "INVEST – Grant for Venture Capital", the state also provides incentives for private investors to invest in start-ups.

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### **Our expert on financing:**

Melusine Reimers  
+49 (0)234 32-22964  
melusine.reimers@ruhr-uni-bochum.de



# PROOF IT!

“Proof it!” kicks you off in the initial phase of your start-up by providing the first financial resources to develop your start-up idea in order to implement it successfully going forward. The funding scheme is part of the financial support provided by the **WORLDFACTORY Start-up Center at Ruhr University Bochum**. With “Proof it!” you can, for example, cover material and travel costs so that your start-up can establish initial contacts in the target industry at (national and international) trade fairs and conferences. You can also finance consumables and investments for prototype development in our **Makerspace** through “Proof it!”.

## WHO IS ELIGIBLE FOR FUNDING?

Students and PhD students from all faculties at Ruhr University Bochum who are interested in starting a business can apply for “Proof it!” funding. We are convinced that starting a business in a team promises the greatest success. “Proof it!” therefore supports teams (at least two people) with a feasible start-up idea. In order to be eligible, you’ll be required to continuously take part in the training measures and consultations with the WSC team.

## WHICH CRITERIA ARE RELEVANT FOR FUNDING?

- degree of innovation of the idea
- market potential
- team composition
- commitment
- pitch

## WHAT IS FUNDED AND UP TO WHICH AMOUNT?

Teams receive funding of up to 2,000 euros for material and travel expenses. After a positive assessment by the jury, each team must submit a complete cost plan showing how and for what the funds will be used.

## HOW DOES THE APPLICATION PROCESS WORK AND WHO DECIDES ABOUT FUNDING?

The **WORLDFACTORY Start-up Center** regularly convenes a jury to find suitable start-up teams and award funding. At the jury meeting, the team has to pitch their business idea in five minutes (on a maximum of 15 slides) and then answer questions from the jury members for ten minutes. The jury is made up of experienced start-up coaches from the **WORLDFACTORY Start-up Center**. The jury’s verdict is decisive for funding.

## WHEN ARE THE APPLICATION DEADLINES?

You can apply for funding at any time. To this end, we need the following information from you: name, faculty, degree course, number of semesters, team name and team composition. We will arrange the dates of

the jury meetings individually with you and your team. We will award the funding after reviewing your submitted cost plan. Please note: you can only make your first purchases after the cost plan has been approved.

## FOLLOW-UP FUNDING “PROOF IT!+”

In exceptional cases, it’s possible to take advantage of a second funding round with “Proof it!+” (for example, if a prototype enters the next development phase in which new costs arise). You should find out in advance whether a second funding round is promising. In any case, you will have to apply again, including questionnaire and new cost plan.

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### Contact:

Ulrike Trenz  
UFO 0/05  
+49 (0)234 32-23176  
ulrike.trenz@rub.de





# HOW DO I IDENTIFY MY IDEAL FUNDING PROGRAM?

Knowledge-based spin-offs usually require a lengthy evaluation, higher investments and a longer start-up phase than other start-ups. The nationwide funding landscape to accelerate the path from research to the market is diverse. Not every funding program is suitable for every project. Please feel free to contact us: we'll work with you to see what start-up financing might be suitable.

## 1

Funding programs of the Federal Ministry for Economic Affairs and Climate Action (BMWK)

- **EXIST Start-up Grant** – supports a team of max. 3 people over 12 months to bring a research-based prototype to the market.
- **EXIST Research Transfer** – supports a team of up to 4 people over 18 to 24 months to transform a research-based start-up project into a proof of concept.

## 2

Funding programs of the Federal Ministry of Education and Research (BMBF)

- **Go-Bio** – research funding in the field of biomedicine
- **Enabling Start-up** – support for start-ups in quantum technologies and photonics
- **Start-interactive** – promoting start-ups in the area of health and quality of life
- **VIP+** – funding program to validate the technological and social innovation potential of scientific research
- **Human-technology interaction (HTI)** – funding for innovative start-ups in the HTI sector
- **StartUpSecure** – initiative for start-ups in IT security, closely supported at Ruhr University Bochum via the Cube 5 Incubator

## 3

NRW funding programs (co-financed by the European Union)

- **Start-up Transfer.NRW** – supports a team for a maximum of 24 months in an innovative, knowledge-based start-up project.
- **Start-up grant NRW** – supports everyone who wants to get into the start-up scene with a monthly grant of 1,000 euros and individual coaching for one year.



### ONLINE OFFICE HOURS

The overview shows how diverse the funding landscape is. In order to find out which funding program from which funding agency is suitable for your project, we recommend you join us for our online office hours on federal funding.

Our office hours are Thursdays from 11:00 am to 12:00 pm.

### Our expert for funding programs:

Christiane Jonietz  
+49 (0)234 32-29538  
christiane.jonietz@ruhr-uni-bochum.de



## FROM UNIVERSITY INTO BUSINESS

Do you have the right to continue using technology, rooms or intellectual property (IP) from university projects once you started your own business? The answer is simple: as a state institution, none of our services may be directly exploited for commercial purposes. Products created at the university may not be sold. Aids such as printers and measuring devices must be purchased or rented, and so must premises.

If you use patents or IP (intellectual property) of the university or individual departments (even if you collaborated on them), you're not allowed to generate any sales with them.

However, ways do exist to transfer IP or items that you use for your business to your start-up after it's been founded. As an alternative to buying or renting, there are two methods that allow for a legal transfer without cash flow:

### DE MINIMIS AID

In accordance with the requirements of EU state aid law, this funding instrument enables public institutions (the university) to transfer services to a market economy actor (the start-up) without any cash flow. De minimis aid may not exceed a total market equivalent of 200,000 euros. Since some start-up programs also work with the "de minimis aid" option, our start-up

advisors will first check with you whether the 200,000 euros have not yet been exhausted. We will then work with you to develop a contract for the transfer of services and/or devices from the university to your start-up.

### BARTER DEALS

There's no upper limit for these exchanges as there is for de minimis aid. The process is similar: in a contract, both contractual partners (in this case the university and the start-up) agree on what they will exchange and at what price. These amounts must also correspond to standard market prices. According to the contract, the mutual services are provided and invoiced to each other. An example of a barter deal might be: the cost of using a laboratory is 400 euros per month (rent). In exchange, the spin-off offers the department to hold a course for students once a month for two hours (service).

Legal transfer without cash flow is possible.



# HOW DO I PROTECT MY INTELLECTUAL PROPERTY?

The business model of start-ups is based on innovations: new developments, inventions or creative creations. That's why it's important to protect intellectual property (your IP). WORLDFACTORY offers seminars and individual consultations on this issue. Depending on the quality of the intellectual property, different legal frameworks apply.

Inventions and IP constitute the foundation for start-ups.



Since Ruhr University Bochum expressly welcomes spin-offs, the university also offers start-up-friendly regulations for the transfer of IP.

The following requirements must be met: The start-up must be pursued seriously. The founders must submit a business plan and explain a strategy as to how they're planning to reimburse Ruhr University Bochum for the patenting costs at the very least. The transfer of IP to start-ups must be carried out under normal market conditions.

## INTELLECTUAL PROPERTY LAWS AND REGULATIONS:

- **Copyright:** works of authorship (books, logos and software)
- **Employee Invention Act (ArbnErfG):** patents for inventions
- **Brand protection:** trademarks, brands, logos, name rights

## CLARIFY PATENT RIGHTS VIA PROVENDIS

Inventions, i.e. solutions to technical problems, play a vital role for many start-ups. You must

report any inventions that you made during an employment relationship with Ruhr University Bochum to the University. The report is then forwarded to PROvendis for evaluation. PROvendis is one of the largest European service providers in technology transfer and IP management. The company evaluates research and development results and markets intellectual property rights. PROvendis is a subsidiary of 28 universities in North Rhine-Westphalia and, in addition to universities and university hospitals, also works for research institutions, companies and start-ups.

Please note: inventions are no longer patentable if they have already been published. Posters at conferences and the defense of a doctoral thesis also count as publications.

## READ MORE:

- [patente@ruhr-uni-bochum.de](mailto:patente@ruhr-uni-bochum.de)
- <https://www.worldfactory.de/en/beratung/patents>
- <https://www.dpma.de/english/index.html>
- <https://worldwide.espacenet.com/>
- <https://provendis.info/en/>



## WHICH LEGAL ISSUES DO START-UPS FACE?

The correct legal form for your start-up and clearly outlined relationships with co-founders and partners – this also includes the university and investors – are the foundations that decide which path your company takes in the future. In operational business, you also need a basic understanding of how contracts work and which crucial stipulations they include (or lack).

Very few start-ups have legal expertise in their team. Don't hesitate to seek legal advice! Use the free information and (initial) advice offered by WORLDFACTORY. We'll outline which advice you need in detail and prepare you for discussions with lawyers and notaries.

Choosing the right legal form is often the first legal decision faced by entrepreneurs interested in starting a business.

### AN OVERVIEW:

- **Corporations (UG, GmbH, AG, association, etc.)** often have advantages when it comes to liability and the involvement of investors. They are also well suited as a holding company. In addition, only they can have charity status.
- **Partnerships (GbR, OHG, KG, etc.)**, on the other hand, have the advantage of few formalities, a high creditworthiness and (at least in the early stages) often tax advantages.
- **Sole proprietorships** are similar to partnerships but can only be founded by individuals.

### TAKE A STEP TOWARDS SELF-EMPLOYMENT VIA SECONDARY EMPLOYMENT

Many start-up entrepreneurs are still employed at Ruhr University Bochum when they start their careers. The university's employees are legally obliged to report secondary employment. Do you receive remuneration or reimbursement for performing a job? Do you personally – rather than Ruhr University Bochum – receive an order or contract? Have you become self-employed or are you a freelancer? Then, before you take up operations, you'll have to fill out the form "Notification of secondary employment as an employee", have it signed by your superior and wait for the approval of the human resources department. You can start

secondary employment only when all of these have been greenlit. Due to their duty of care, employers may not approve more than 48 hours per week for secondary employment. So, make sure that your total number of hours does not exceed this limit!

### EXCEPTIONS

- Scholarship holders do not have to submit an application for secondary employment!
- Research or student assistants are also not required to submit a notification of secondary employment. However, for the sake of completeness, you should still inform your supervisor.

Notification of secondary employment form for Ruhr University Bochum:



### Are you familiar with the Business Judgment Rule?

This central guideline is enshrined in German corporate law. The Business Judgment Rule regulates the circumstances under which the highest decision-makers in a company are legally liable for bad business decisions. The Business Judgment Rule was integrated into the German Stock Corporation Act in 2005, but also applies to other legal forms such as the GmbH (limited company).

# INTERNATIONALIZATION

**Carsten Willems set up the Bochum-based company VMRay in 2014 together with Ralf Hund, with whom he shared an office at Ruhr University Bochum. The company now develops specialized security software solutions for analyzing malware. Almost half of VMRay customers are in the United States. We asked him about his experiences on the way to international business.**



## **Isn't it easier to start a business in a country where you're familiar with the culture?**

It depends on where you want to go. For us as a deep tech provider of security specialists that targets large corporations, the US is the only way to go. In Europe, there are many different languages, different cultures, different trade fairs, whereas the US is a very large, rather homogeneous market. Compared to the US, all of Western Europe invests only half as much into IT security. Americans are also more willing to take risks. They're more likely to venture a start-up than a conservative German company would do.

## **What helped you gain a foothold in the US?**

We took part in the German Accelerator program and spent some time in New York. There, we met other start-ups, US lawyers, US HR people and US marketing experts. Even though

we already had contacts in the US, this exchange was still very valuable. The majority of our sales team is now based in the US. Our software development, which is where more than 50 percent of our employees work, is still located in Germany. Deep Tech and German Engineering – that's what we're all about.

## **What kind of support do you think is particularly helpful for start-ups when it comes to internationalization?**

In my opinion, useful support includes match-making with relevant contacts, exchange of experiences between founders and alumni, a good overview of important contacts and help in identifying best practices.

## **Do you have any advice you'd like to share with our founders?**

A security mindset consists of always assum-

ing the worst. In the business world, that's not necessarily helpful. We had to learn to take risks sometimes. As "techies", we initially lost sight of the commercial side of our company. If you want to be successful, you have to bring in people who understand the commercial side. We should have done this sooner.

## **And specifically on the topic of internationalization?**

Even decades later, I still find it difficult to read between the lines in the US. Now, what's genuine interest, what's generic friendliness? What is helpful? So, first of all: you should be aware and realize that people communicate differently in other countries than they do in Germany. And be mindful as to how valuable your limited time is. It's worth involving allies at an early stage who are familiar with the other culture and language. Luckily, we did that early.

**Thank you for your time, Carsten!**

The **WORLDFACTORY** start-up consultancy also supports start-up teams in gaining a foothold abroad. See the following links for relevant contacts for your questions and concerns:

READ MORE:

- <https://www.worldfactory.de/en/international>
- <https://www.vmray.com/>
- <https://www.germanaccelerator.com/>

## **German Accelerator ...**

... is financed by the Federal Ministry for Economic Affairs and Climate Action (BMWK). The program supports German start-ups in expanding into leading innovation centers in the US and Asia.

*"In the US,  
everything  
is awesome.  
We had to  
learn to read  
between  
the lines."*

Carsten Willems





# ACTITUDE

You assistant for mental flexibility

Many people have never learned how to deal with the emotional challenges of life. Rejection, sadness and constant stress can be burdensome, even if they don't – as yet – make you ill. ACTitude integrates therapeutic issues into everyday life. Diana Huth and her team have adapted psychological concepts such as Acceptance and Commitment Therapy (ACT) to deliver online counseling with real-life relevance.

#### **What does ACTitude do to help?**

As psychologists and media producers, we've created something that addresses people in their lived reality. A counseling service that offers preventive help to help people cope with the challenges of everyday life. To this end, we provide free services such as YouTube videos, podcasts and exercise sheets developed in-house, which are multimedia-based and available to everyone at all times. People can try out our solutions before deciding whether they're really what they need at [www.ACTitude.de/stresstest](http://www.ACTitude.de/stresstest) and [www.ACTitude.de/minikurs-selbstwert](http://www.ACTitude.de/minikurs-selbstwert).

#### **What kind of entrepreneur are you?**

I worked in a number of companies for about ten years, including at a rehab clinic, at a large enterprise as a coach for employees and at marketing and PR agencies. I've

always tried to find a balance between my two passions – psychology and media mediation. At the same time, I've been asking myself the question: why doesn't anyone teach us to cope with stressful situations in our lives before they evolve into a serious mental disorder? And what kind of solution do I want to develop and provide that meets these prevention requirements? In other words, I'm an entrepreneur who is passionate about providing a meaningful service.

#### **How did you find fellow campaigners for your idea?**

First of all, I found out what funding might be available for my start-up project. After extensive research, I opted for EXIST funding and for WORLDFACTORY at Ruhr University Bochum as the supervising institution. For one, I did my bachelor's and master's degrees

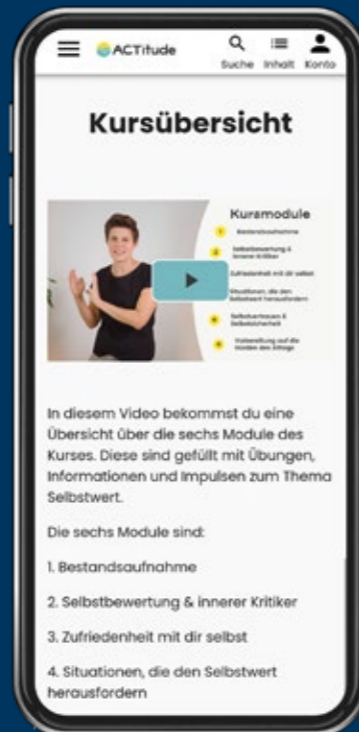
at Ruhr University Bochum and I do appreciate the proximity to the Faculty of Psychology. For another, I knew that WORLDFACTORY had already successfully supervised many start-up processes. During the application process, I made contact with other people interested in founding a company through WORLDFACTORY and, after a few detours, finally met Theresa Frank, who now helps shape the company as a psychologist and researcher.

**Which consulting services offered by WORLDFACTORY did you benefit from?**

I remember our initial consultation very vividly. Start-up coach Christiane Jonietz got into

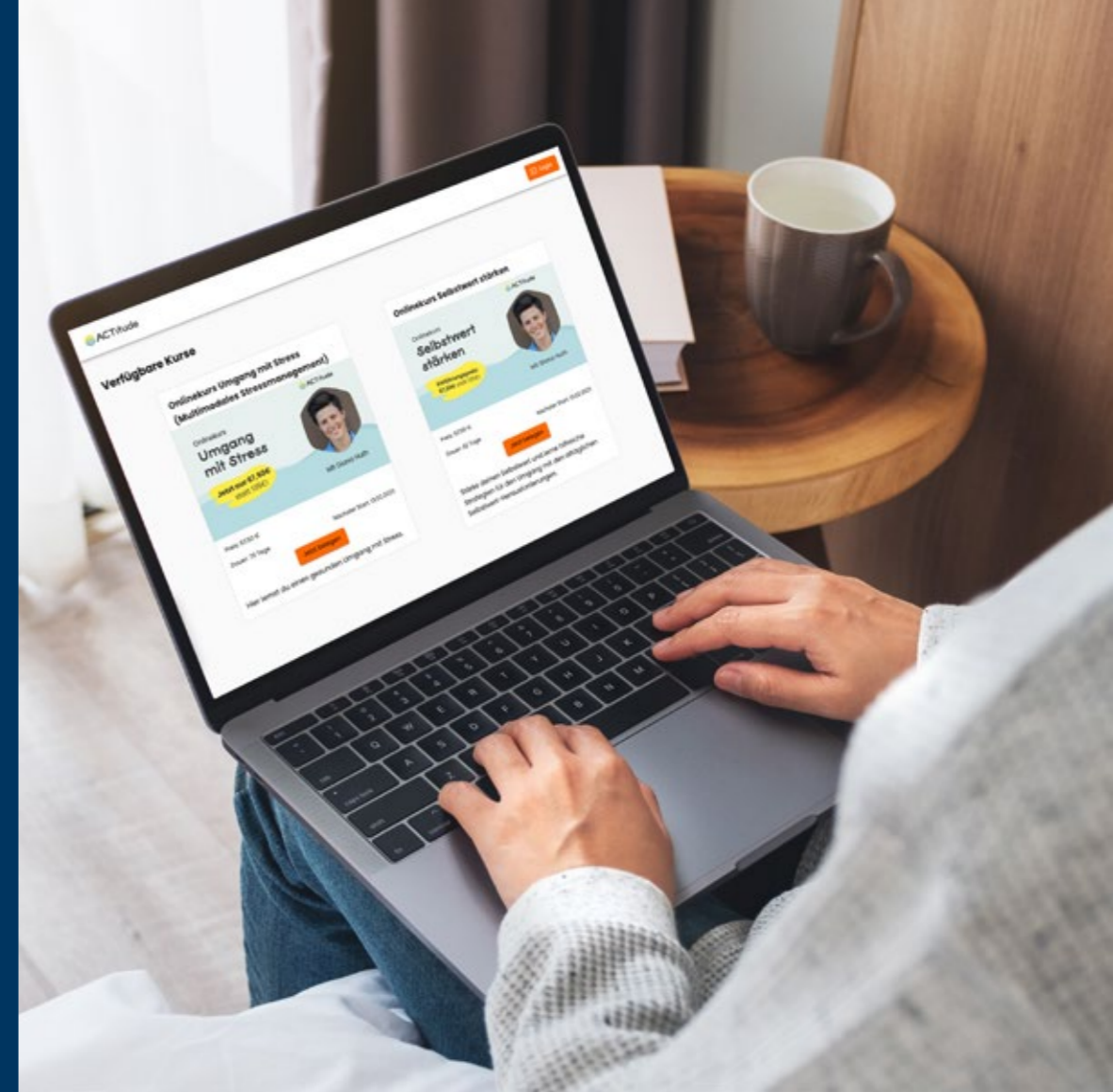
the specifics right away. She introduced us to other experts, for example from the fields of e-health and insurance. Subsequently, a targeted process started. WORLDFACTORY specialists were on hand to help us with everything, from persona development and the drafting of business plans to the submission and revision of the funding application.

We were also happy that we could use the WORLDFACTORY premises for a very effective kickoff workshop of our company. Among other things, we created a company guide during these three very intense days, which we still frequently refer to for orientation and which is also very helpful for our interns.



*“As an alumna of RUB, I appreciate the proximity to the Faculty of Psychology.”*

Diana Huth



**Are you still in touch with WORLDFACTORY?**

Yes, the cooperation doesn't end with the submission of a grant application. We had wrap-up meetings after the funding expired and had follow-up talks with other institutions – for example, with the Healthcare Living Lab. We're still in touch with our consultant professor from the Faculty of Social Sciences today. We also continue to call on network partners for legal advice or marketing measures. The WORLDFACTORY will

certainly be with us for a long time to come.

**Thank you very much for the interview and good luck!**

**We spoke to:**

Diana Huth  
Psychologist, moderator, speaker,  
founder and managing director of  
ACTitude GmbH



# EPILOG





# THE WORLDFACTORY ECOSYSTEM

Various actors join forces under the umbrella of **WORLDFACTORY**: dedicated professionals in the fields of mentoring, consulting, business and science work hand in hand with innovative start-ups to create a diverse ecosystem in the region and for the region – a climate in which start-ups can thrive!

## RUBPRENEURS

Experts are driving start-up activities directly on the campus of Ruhr University Bochum: our RUBpreneurs. They're committed to "entrepreneurship" in many different ways, as **WORLDFACTORY** employees as well as lecturers, researchers and students. They share their knowledge and their personal networks as well as infrastructure such as laboratories and premises.

## BOCHUM WIRTSCHAFTSENTWICKLUNG (BoWE)

One of the **WORLDFACTORY**'s most important partners is the municipal business development agency in Bochum: Bochum Wirtschafts-entwicklung (BoWE). Together with BoWE, we've developed cooperative concepts for our start-up teams:

- start-up competitions
- Senkrechtstarter
- business plan competition (special prize for the best university start-up)
- XSeed (offers to use rooms in "Funkhaus Bochum" free of charge for 6 months)
- discounted rents for premises in local technology and start-up centers

## OTHER NETWORK PARTNERS

- venture capital companies and other investors
- a robust research network via Ruhr University Bochum
- meeting rooms for exchanging ideas with experts from industry and society
- contacts to funding programs, hubs and accelerators

## CONTACTS TO BEST PRACTICES

We maintain close ties with Ruhr University spin-offs that we'd supervised in the past. They pass on their experience to new start-up teams and share their respective networks. This is how the **WORLDFACTORY** ecosystem continues to thrive.

## READ MORE:

- <https://www.worldfactory.de/en/ecosystems>
- <https://www.bochum-wirtschaft.de/english/>
- <https://www.werk-x.ruhr/xseed>
- <https://www.senkrechtstarter.de/>
- <https://ruhrhub.de/en>
- <https://www.gruenden.nrw/en>

**Please note:**  
The diagram represents a section of our ecosystem. No claim is made as to the completeness of the actors.

# INCUBATORS

Our Incubators are hotbeds for ventures from various disciplines, in which Ruhr University Bochum excels with its outstanding research performance and exceptional infrastructure. The Incubators provide specialized start-up teams with access to competent contacts, premises and equipment for research and production, interesting networks and valuable market access. The services are primarily aimed at students, researchers and alumni of Ruhr University Bochum, but are also open to start-ups that have already been launched.

## START4CHEM

Start4Chem, our Incubator in the field of chemistry, primarily supports researchers interested in founding a company at Ruhr University Bochum based on their own R&D results. This service is also open to external parties, provided that capacities are available. The cooperation between Start4Chem and the Cluster of Excellence Ruhr Explores Solvation (RESOLV) at the Faculty of Chemistry and Biochemistry of the Ruhr University Bochum offers additional opportunities: the cluster combines national and international top-level research in an ambitious R&D network.

<https://nanoec.ruhr-uni-bochum.de/en/>

## SMART SYSTEMS

The Smart Systems Incubator is run by the Chair of Manufacturing Systems and advises start-ups on the potential, implementation and prototype development of smart systems. Smart systems collect and analyze data, make predictions and intelligent decisions. They're an integral part of Industry 4.0; in other words, they're instrumental in the networking and digital exchange of data

between machines and people in real time. The close collaboration with the Ruhr University Bochum/IGM Joint Research Center facilitates a holistic and transdisciplinary approach. In addition to technical expertise, questions of work organization and design are also integrated into the consulting process.

<https://www.rubigm.ruhr-uni-bochum.de/rubigm/index.html.en>

## MATERIALS

The Materials Incubator promotes innovations in materials science. Technical progress, for instance in medical technology, automotive, textile and food industry, always requires new materials that are precisely tailored to the application. Still, the focus is not only on the potential for economic success, but also on environmental aspects. In the Materials Incubator, ideas for products and services mature, results from cutting-edge research have just as much room as "low-tech" ideas that can have a major impact.

<http://www.mrd.rub.de>

## CUBE 5

The Cube 5 Incubator promotes start-ups in the field of cyber security. Cube 5 is located at the renowned Horst Görtz Institute for IT Security at Ruhr University Bochum. It also houses Germany's only Cluster of Excellence in IT security, namely CASA (Cyber Security in the Age of Large-Scale Adversaries). Does your research focus on protecting IT systems from attacks, controlling the data exchange of automated vehicles or making the interaction between humans and technology more secure? Then contact Cube 5! Here, you can test your IT ideas in an interdisciplinary approach.

<https://cube-five.de/en/>

## HEALTH+

Improving quality of life through innovations in healthcare: that's what Health+ is all about. The Health+ Incubator supports start-ups in healthcare, life science and medical technology. Health+ bundles the research expertise of the health sciences and supports the development of innovative products, services and business models. You will also benefit from the growing ecosystem on the new Health Campus and in the Biomedicine Park at Ruhr University Bochum.

<https://healthplus.ruhr-uni-bochum.de>



# THE START-UP WORLD FROM A TO Z

“My start-up pitched our executive summary to a business angel at the most recent fuck-up night at DeepTech Accelerator. She believes we’ll become the next unicorn immediately after our seed phase! Actually, though, we’d rather be a zebra.” If you say so?! A statement from the start-up world! Like every community, it has its own phrases and jargon.

## BOOTSTRAPPING

Start-ups that finance their launch exclusively with their own funds, i.e. without outside capital, practice what’s known as bootstrapping. This is particularly common in the early stages, when funding or larger investments are still in the pipeline.

## BUSINESS ANGELS

Individuals (often entrepreneurs) who invest at an early stage in what they believe is a promising start-up. They provide support both in terms of funding and in their function as contact brokers.

## DE MINIMIS

If an EU member state grants minor aid to a company, this can be done without approval by the European Commission under certain conditions. Universities, for example, can help founders by providing equipment or services.

## EARLY ADOPTERS

Early adopters are the first client group addressed by providers when a product is launched. This target group likes to take advantage of a company’s latest innovations or – relevant for start-ups – struggles with the very problem that your product or service is designed to solve.

## EXECUTIVE SUMMARY

A brief written summary of all essential information about a start-up’s unique selling proposition, competitors, team and finances.

## EXIT

Exit refers to the departure of an investor from a company, i.e. the sale of the investment. For the resale or IPO of a start-up, an exit strategy is particularly important for investors, i.e. a plan that indicates when a previously made investment is to yield a return.

## INTELLECTUAL PROPERTY (IP)

Intellectual property such as inventions, software, specialized expertise, processes/concepts, artistic works, designs, and symbols, names and images used in commerce. Industrial property rights: patents, utility models and trademarks.

## KNOWLEDGE-BASED START-UP/ INNOVATION START-UP

A start-up based on knowledge gained from studies or research.

## LEAN START-UP

Approach to creating, testing, verifying and improving a product or service with minimum effort on the basis of a previously established hypothesis.

## MINIMUM VIABLE PRODUCT (MVP)

Presentation of an idea with the simplest means to test it in the market.

## PITCH/PITCH DECK

Set of slides with defined content (problem, solution, target group, market, competition, alternatives, finances, team) to present an idea or a start-up.

## PRE SEED

Early phase of a start-up in which the idea and business model are developed before any business activities (legal form, orders, etc.) exist.

## PROTOTYPE

Representation of an idea that can be functionally tested – on paper, digitally or as a haptic model. A prototype is designed to test a specific feature and solicit honest feedback from stakeholders.

## RUHR UNIVERSITY BOCHUM SPIN-OFF

All start-ups by students, alumni, researchers and employees of Ruhr University Bochum as well as by third parties, provided that the latter have been supported by a WORLDFACTORY mentoring program during the start-up. It’s irrelevant whether the start-up project is implemented in Bochum or in Germany, respectively.

## RUB-SPIN-OFF/SPIN-OFF

Usually, the term “spin-off” refers to a spin-off from an existing company. Therefore, the term does not apply to university spin-offs and should be avoided.

## SEED

Phase in which the business model and legal form are determined. Start-ups can generate initial income through sales, tests or financing.

## START-UP

Start-up with scalability and a high degree of innovation in the business model and/or product that is less than three years old according to the Higher Education Act.

## UNICORN

Start-up companies with a market valuation in excess of USD 1 billion (not listed on the stock exchange).

## UNIQUE SELLING POINT (USP)

Unique selling proposition of a start-up that sets it apart from other companies in the market and reflects the benefit to the customer.

## VENTURE CAPITAL (VC)

Venture capital is investment with an increased risk, which applies to almost all start-ups. The benefit for investors is an above-average return in the event of success.

## ZEBRA

A start-up in which the focus is not or not only on rapid growth, but above all on sustainable development and on social and/or ecological goals.

# ACKNOWLEDGMENTS

We had the idea for this Guide when we noticed that many prospective founders interested in setting up a company at Ruhr University Bochum often don't (yet) arrive at the place where they can find the best support for their questions. "We need a guide," we decided accordingly.

In order to tackle our problem in the most effective way, we put ourselves in the shoes of a start-up that's in the process of designing a new product to help its target group.

True to our slogan "Love the problem, not your solution", we set out to create a product that would address the real needs of our stakeholders. For more than a year, we interviewed start-up teams and start-up consultants. We can now confidently claim that the first and so far only university start-up guide was created in genuine and active collaboration with start-up teams.

The result is a well designed, entertaining booklet, which we hope will inspire you to explore the world of start-ups. We've deliberately avoided long encyclopedic sections and have tried to compile useful content in a condensed form. Our Guide is not meant to promote the WORLDFACTORY Start-up Center. Rather, we hope to put people who want to start a business on the right track.

It goes without saying that we wouldn't have been able to solve many of the problems without the active support of the competent experts who supported us in this project. Therefore, we'd like to take this opportunity to thank all start-up teams, third-party experts, the Vice-Rectorate for Research and Transfer, the Transfer and Entrepreneurship Department, the entire WORLDFACTORY team and the communications agency Oktober for their cooperation and the trust they have placed in us.

**Your start-up coaches,**  
*Michelle and Florian*

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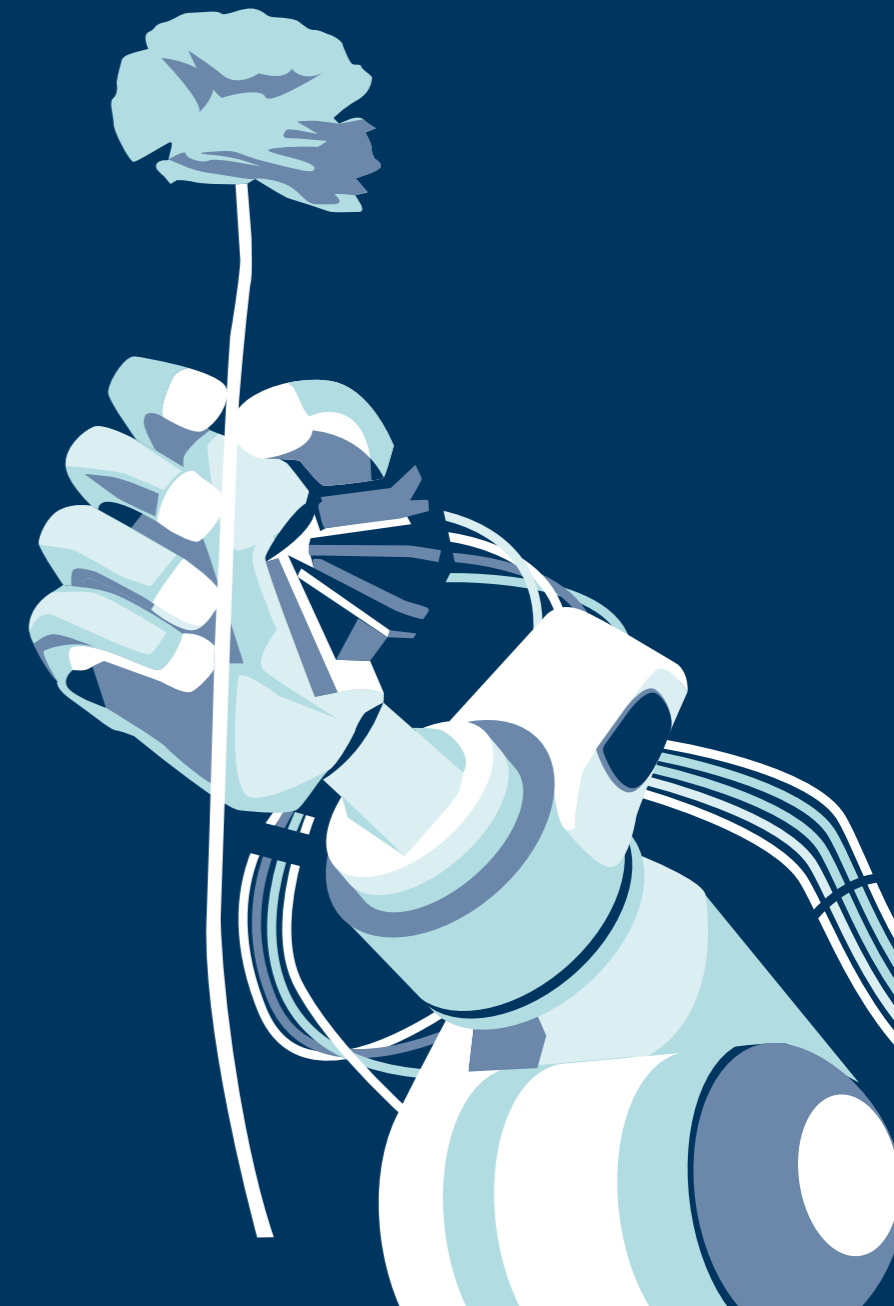
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## Disclaimer:

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awards and prizes for RUB start-up teams



26 realized start-ups

763.000 euros in prize money

505 CONSULTING SESSIONS



129 start-up projects per year



12 million euros in investment support and funding for RUB-Startups



15 START-UP-COACHES

105 ALUMNI MENTORS AND ROLE MODELS



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