

Future Navigation for Entrepreneurial Start-ups: Business Incubation amidst Leading Tech Companies

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Executive Summary

Regarding the fact that the impact of technological innovations is significantly strengthened through a successful transfer towards market ready businesses, entrepreneurial processes represent a strong lever for economic growth. Public research institutions such as universities are one of the most important sources of technological innovation. However, members of these institutions rather tend to focus on further improvement of achieved innovations than on their transfer to market. Possessing the necessary infrastructure as well as a relevant network of established firms and entrepreneurs, STPs are well suited to host a business incubator and can close the gap between business and research, especially in the early stages of the entrepreneurial process.

The business incubator *BizKubator* is part of TPH - Technologie Park Herzogenrath, is situated close to RWTH Aachen university, a leading science and research institution, and provides start-ups the opportunity to accelerate the pre-seed phase with its major challenges proof-of-concept, team building, business model development, funding and time-to-market. The unique value proposition of *BizKubator* is to provide entrepreneurial teams and talents with an incubation space amidst leading technology companies as well as to give its existing customers, namely established companies, an unparalleled access to new opportunities.

The incubation program of *BizKubator* is based on well-known best practice examples and consists of four major components: Working environment, educational training and events, coaching and advice as well as access to funding and network. With the combination of its unique location and its comprehensive program, *BizKubator* is an innovative approach to foster practical entrepreneurship and to accelerate university spin-offs from which all stakeholders will benefit.

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Subject Index

Basic areas:

Economics & Policy, Technology & Innovation

Key discussion issues:

Global challenges - New Business Models for STPs, Optimizing university/industry collaborations

Accelerating growth - Cross disciplinary stimulation of the innovation process, Knowledge based companies with innovative business models

1. The Entrepreneurial Process: What is it? Why is it important?

Despite the great variety of businesses, entrepreneurs, geographies and technologies, central themes or driving forces dominate the entrepreneurial process: ¹

- It is opportunity driven.
- It is driven by a lead entrepreneur and an entrepreneurial team.
- It is resource parsimonious and creative.
- It depends on the fit and balance among these forces.
- It is integrated and holistic.
- It is sustainable.

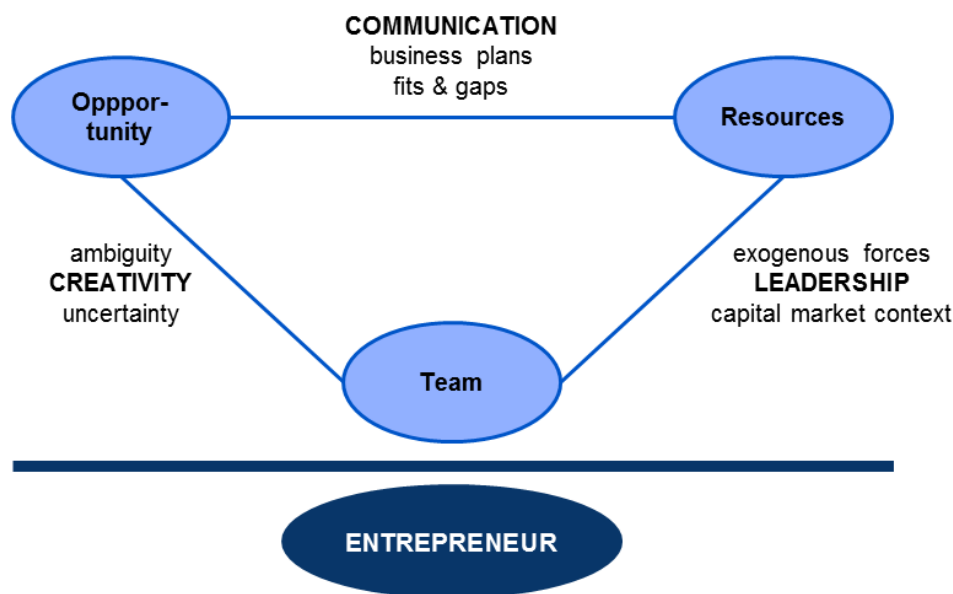


Figure 1: Timmons Model of the Entrepreneurial Process¹

Why is the entrepreneurial process of high importance? Building up and supporting higher potential ventures is an important driver of competitiveness on both levels:

- the microeconomic level (innovations/new business units within companies, communities) and
- the macroeconomic level (regions, nations)

Organizations on all levels as well as educational institutes (high schools, universities etc.) have to foster the entrepreneurial process in order to drive innovation to meet the global challenges and to mobilize talented people to start entrepreneurial projects and found innovative companies. Especially those groups who possess and develop superior technological knowledge often lack the ability and drive to take their ideas one step further and transfer it into a market ready business. Institutions such as STPs represent a major lever to smoothen the steps from technology innovation towards market entry by providing entrepreneurial knowledge as well as the required infrastructure.

¹Timmons, Spinelli, 2007: New Venture Creation, Entrepreneurship for the 21th Century

2. How can STPs support the Entrepreneurial Process?

STPs have the key advantage of hosting both:

- Tech companies with a strong business focus and
- University institutes and labs with a strong research focus

in a common area and within one network.

In many cases, tenant companies in STPs are university spin-offs with a strong linkage in terms of technology, intellectual property (IP), common research projects and people coming from the institutes who are often still commuting between their company and their former institute.

This strong linkage in the research-business-STP triangle is crucial for seizing opportunities as well as gaining and supporting entrepreneurial talent and teams. In addition to successful tech companies with their industrial expertise and business network, STPs can also provide a strong base of entrepreneurial people: experienced managers and teams within tenant companies (potential spin-outs) and senior entrepreneurs (potential mentors and/or business angel investors). Furthermore, STPs provide an opportunity for e.g. university spin-offs to become independent from their mother institution but still be able to have access to entrepreneurial support, a qualified network and relevant infrastructure during the early start-up phase.

STPs' areas of support to the entrepreneurial process shall be at least:

- lab and office space plus infrastructure services, i.e. standard business incubator space
- access to and cooperation projects with the STP's tenant companies
- support to university entrepreneurship education by promoting Academia-to-Business (A2B) and practical projects
- mentoring and coaching of the venture teams, i.e. the incubatees
- providing incubatees with the access to the STP's know-how and its regional and global network

In a nutshell: STPs are the perfect place, namely a 'practical playground', for supporting the entrepreneurial process.

The idea of such a practical playground refers to the "Science and Technology Park 3.0" scenario, managing ecosystems of knowledge, talent and investment to distinguish themselves as centers of experimentation.²

3. Business Incubation: Characteristics and Success Factors

At first, let's have a look at the definition of Business Incubation according to NBIA:³

"Business incubation is a business support process that accelerates the successful development of start-up and fledgling companies by providing entrepreneurs with an array of targeted resources and services. These services are usually developed or orchestrated by incubator management and offered both in the business incubator and through its network of contacts. A business incubator's main goal is to produce successful firms that will leave the program financially viable and freestanding. These incubator graduates have the potential to create jobs, revitalize neighborhoods, commercialize new technologies, and strengthen local and national economies."

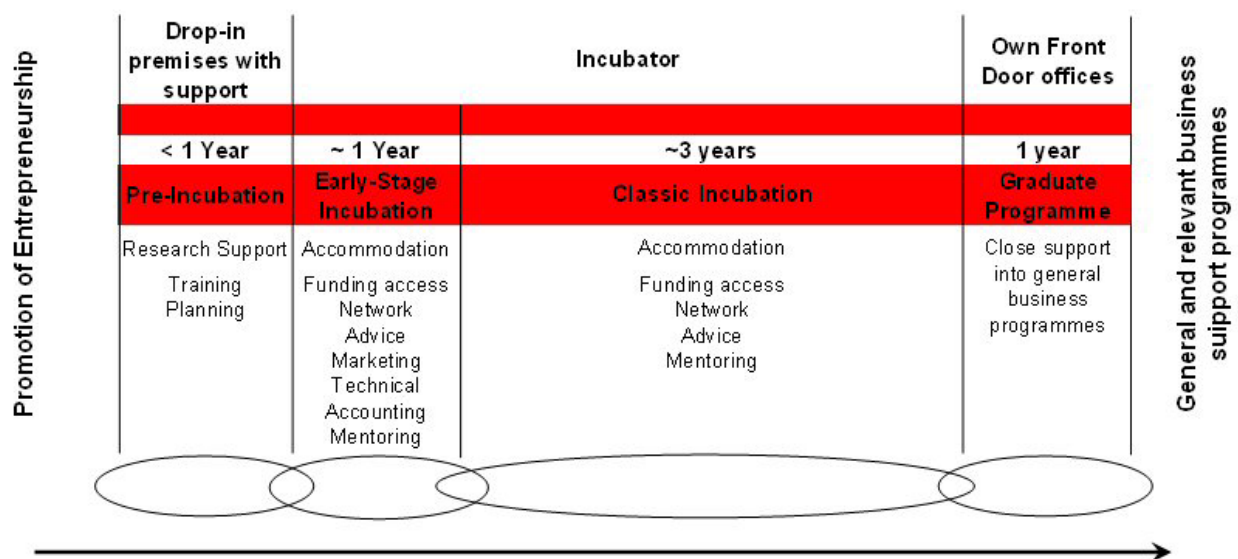
² Dr. A. Townsend, 2009: Future Knowledge Ecosystems, Institute for the Future Report Nr. SR-1236

³ National Business Incubation Association (NBIA) website www.nbia.org, Dec 27, 2010

The key characteristics of business incubation are according to the best practice example @Wales Digital:⁴

- Entry Policy, procedure: Who is eligible, what is a ‘good’ proposal, what can you do for them?
- Incubation program: Tailored service focused on client need.
- Graduation Policy, procedure: Leading to appropriate follow-up support and accommodation.

An STP with its tenant firms, its business environment, its experienced managers, experts and entrepreneurs in different industry sectors is perfectly suited to host a business incubator inside. In addition to providing accommodation, the development and control of the whole *incubation chain* is crucial for success.

Figure 2: The Incubation Chain⁴

In short: A business incubator is a place which supports the entrepreneurial process by exploring and enhancing entrepreneurial skills. And: Space is just the beginning of a story in which the STP with its management, its tenants, and its entrepreneurs plays a major role.

⁴ Ewan, Jones M, 2010: How to Create an Award Winning Incubator? Presentation held at SBI Conference, Liverpool; <http://www.youtube.com/watch?v=Agj7Lun9vOY>

4. Case Study: *BizKubator* - Business Incubation amidst Leading Tech Companies

4.1 The Environment: A Leading STP within the Aachen Region

The environment of the *BizKubator* (=Business+Inkubator) is namely the TPH Technologie Park Herzogenrath and the Aachen region.

The *Technologie Park Herzogenrath (TPH)* is located 5 min north of Aachen/Germany. On an area of 23 hectare and with approx. 25,000 sqm rental space, TPH is hosting 70 tech companies with approximately 2000 employees. Some of the companies located at TPH are global leaders in major tech industries such as Ericsson Eurolab (ICT), CleanLaser (optoelectronics), Schaeffler (automotive), Cerobear (new materials), Aixtron (semiconductors), Matricel or Cerner (life science, biotech).

About 60% of the TPH firms are spin-offs of *RWTH Aachen University*. With 260 institutes in nine faculties, RWTH Aachen University is one of Europe's leading institutions for science and research. Currently around 31,400 students are enrolled in over 100 academic programs. RWTH has a clear engineering focus which was a crucial factor in motivating multinational corporations such as Philips, Microsoft, and Ford to locate their research institutions in the Aachen region. Against this background, it is not surprising that for several years now, RWTH Aachen University ranks as the premier German university with regard to external funding which amounted to €193 million in 2008.⁵ Besides its position as a leading science and research institution, RWTH runs a unique model to foster the transfer from innovative technologies towards market ready business models. Relevant activities range from a dedicated technology transfer department to institutes such as the Aachen Entrepreneurship Center which consists of several professionals with highly relevant backgrounds and provides support during the early phases of entrepreneurship. The unique combination of a leading technical university (RWTH) and a cluster of leading tech companies including a community of successful entrepreneurs in one STP (TPH) provides an outstanding opportunity for building up a business incubator for technology oriented start-up teams. The unique environment in the Aachen region and the understanding of the entrepreneurial process are the starting point for the *BizKubator - Business Incubation amidst Leading Tech Companies*.

4.2. The *BizKubator*: An Opportunity Driven Endeavour

The economic growth of the "Technologieregion Aachen" in terms of turnover and employees is driven by the success of its technology oriented companies. Most of these companies are spin-offs of RWTH Aachen University such as the TPH-based Aixtron SE, Cerobear GmbH and Head Acoustics GmbH. These companies were all founded in the 1980ies and are world market leaders with up to 600 employees.⁶ Another finding of the recent study on "Technology oriented company foundations in the Aachen region" is the declining number of employees per founded company. Whereas the average was 28 employees in 2005, the number declined to 23 employees per tech-company in 2010.⁶

In short: The favorable environment with lots of new technologies developed at RWTH Aachen University results in a considerable number of new company foundations, however, only few of these grow strongly enough to reach a critical size. The main reason for this shortfall seems to be a lack of structured and professional support of entrepreneurs during the growth phases.

⁵ RWTH Aachen University website www.rwth-aachen.de, Dec 27, 2010

⁶ Aachen Chamber of Commerce, June 2010, Report on: Technology oriented company foundations in the Aachen region

Supporting the entrepreneurial process for high growth companies is one opportunity. The other opportunity is the business environment at an STP such as TPH. Most university spin-off teams stay at their institute for months or even years resulting in further technology development instead of working on the forces of the entrepreneurial process: Is the technology an opportunity? What is the best business model? How about my resources (leaving the university comfort zone) such as capital and space for test labs and production? How about my team? And: Am I the right entrepreneur?

The *BizKubator* is the perfect place, along with an advanced incubation program imbedded, to answer these questions. At the *BizKubator - Business Incubation amidst Leading Tech Companies* entrepreneurial start-ups have the opportunity to accelerate the pre-seed phase with the major challenges proof-of-concept, team building, business model development, funding and time-to-market.

4.3. The *BizKubator*: A Value Innovation for Entrepreneurial Start-ups

The term "value innovation" has been derived from the strategic management bestseller 'Blue Ocean Strategy'⁷. The authors urge companies to "value innovation" that focuses on "utility, price, and cost positions," to "create and capture new demand" and to "focus on the big picture, not the numbers".

The value innovation of the *BizKubator* concept is double-sided. By providing incubation space amidst leading tech companies, we are addressing two target customer segments, each with a distinct value proposition:

- The incubatees, i.e. entrepreneurial teams and talents, will benefit from the industrial business environment with senior entrepreneurs, executives and investors with their expertise, network and funding.
- The other customer segment, the entrepreneurs within the STP and its network, will gain an unparalleled access to opportunities, i.e. new technologies and innovations from partner universities, research institutes and large tech companies (spin-outs), and eventually young entrepreneurial teams.

Common business incubators are mostly located inside university campus with little linkage to the business world. Therefore, the STP-based *BizKubator* is a "blue ocean" representing "untapped market space" and the "opportunity for highly profitable growth".⁷

4.4. Mission of the *BizKubator*

The mission of the *BizKubator* is to enable entrepreneurial teams to build innovative start-ups and to accelerate growth and value creation.

4.5. The *BizKubator*'s Innovative Business Model

At first, three questions to you as the reader:

1. Are you an entrepreneurial spirit?
2. Are you constantly thinking about how to create value and build new businesses, or how to improve or transform your organization?
3. Are you trying to find innovative ways of doing business to replace old, outdated ones?

⁷ Kim, Mauborgne, 2005: Blue Ocean Strategy: How to Create Uncontested Market Space and Make the Competition Irrelevant

4.6. Designing the *BizKubator* space

The major value proposition is the “5i-leeway-space”, meaning a space open for inspiration, interaction, ideas, innovation, and infrastructure.

The TPH Technologie Park Herzogenrath as initiator and host of the *BizKubator* provides a 600 sqm space which is the “5i-leeway”. The requirements for the *BizKubator* space design were defined by the ‘initiator group’ which are mainly TPH-based entrepreneurs. Following these requirements a student group graduating at the Department of Design at Aachen University of Applied Sciences has developed and designed the *BizKubator* space in a class project. The involvement of design students, representing an important group for entrepreneurial teams, has made a major impact on the dynamics in building up the *BizKubator* and its general appreciation.

4.7. The Incubation Program

Providing space which is attractive to both customer segments (venture teams and senior entrepreneurs) and following the “5i-leeway-space” requirements (inspiration, interaction, ideas, innovations, and infrastructure) is one key success factor.

The other key factor is the design of an advanced incubation program which serves the *BizKubator* mission. The incubation program is very much based on best practice examples such as @Wales Digital⁹ and the distinct advantages of the TPH and Aachen environment: The supply of opportunities and talents by RWTH Aachen University and other research institutions and the resources and know-how at TPH with its tenant companies and its entrepreneurs.

Before an entrepreneurial team will be admitted to the *BizKubator* and the incubation program, the *BizKubator* management supported by its partners has to cope with two tasks: (1) mobilizing talents/entrepreneurial teams and (2) selecting applicants in a clearly defined and transparent process.

After admittance the team together with the *BizKubator* management and a selected coach decide on the incubation program’s goals, its individual components and the prospected duration.

The overall objective of the incubation program is to meet the major challenges in the pre-seed phase which are:

- proof-of-concept
- team building
- business model
- funding
- time-to-market

The design of the incubation program’s components shall support the incubatee to meet the mentioned challenges. The four major components are:

1. Working environment:

- 5i-leeway-space
- individual workplaces plus open communication space
- plug-and-play infrastructure
- high-bandwidth internet
- office services

⁹ Ewan, Jones M, 2010: How to Create an Award Winning Incubator? Presentation held at SBI Conference, Liverpool; <http://www.youtube.com/watch?v=Agj7Lun9vOY>

2. Educational trainings, workshops and events:

- subjects like innovation process, prototyping, business model design
- training of communication and presentation skills
- team building workshops
- matchmaking events with entrepreneurial people and scientists from various disciplines and with diverse backgrounds
- access to business school programs in management and entrepreneurship

3. Coaching and advice:

- 1to1-support
- free consultation hours with personal business coach (senior entrepreneur)
- access to industry experts, legal and patent advice etc.
- virtual incubation

4. Access to funding and network

- German public pre-seed funding program Exist-Gründerstipendium to finance to the incubation time
- business plan competitions
- free membership in research-industry clusters (IT, automotive, photonics, medtech, energy/cleantech, life science/biotech a.o.) and entrepreneurs club
- access to investors such as an Aachen-based seed fund and Germany's leading High-Tech Gründerfonds

The incubation ends up with a graduation procedure. The incubated start-up company leaves the *BizKubator* and might rent its own front door office with production and lab facilities, preferably in the STP. The follow-up support has to be defined as well, i.e. what can the STP and its entrepreneurial ecosystem do for the start-up company in its further growth phases.

5. Conclusion

A business incubator located in an STP amidst leading tech companies (*BizKubator*) is new approach to fostering practical entrepreneurship and to accelerate academic spin-offs as well as company spin-outs. The unique location proposition (ULP) of the BizKubator - Business Incubation amidst Leading Tech Companies - is obvious: The chance to succeed is higher and the time-to-market is shortened in an STP with tenant companies and its community of experienced entrepreneurs. All stakeholders will benefit: the start-ups, the STP, the entrepreneurs and investors, as well as the regional economy.