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Creating Value with Business Incubation – New Business Models for STPs

Parallel Session 1

Organisation of STP Services

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Executive Summary

Public research institutions such as universities are one of the most important sources of technological innovation. However, the players within these institutions rather tend to focus on further improvement of achieved innovations than on their transfer to market in a structured entrepreneurial process.

Possessing the necessary infrastructure as well as a relevant network of established firms and entrepreneurs, STPs are perfectly suited to host a business incubator inside in order to close the gap between business and research.

The combination of a leading technical university (RWTH Aachen University) 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-based start-up teams. The paper will describe the case of CO:FORWARD - Business Incubation as a value innovation for an STP as well as for the major stakeholders, the university, and the regional development.

Content of the Paper: page

Session
for which the Steering Committee has provisionally selected the abstract submitted prior to this paper:
'Cooperation and competition with universities'

1. Strategic Basis for Business Incubation: The Entrepreneurial Process

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.

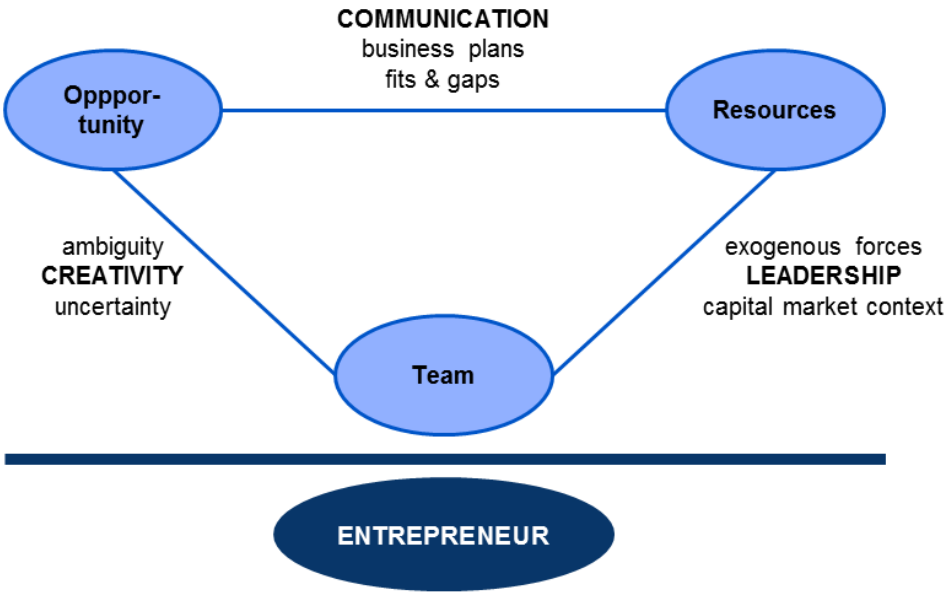

Figure 1: Timmons Model of the Entrepreneurial Process[1]

Why is the entrepreneurial process the strategic basis for business incubation?

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 such as scientists often lack the ability and drive to take their ideas one step further and transfer it into a market ready business. That's what business incubation starts with by supporting the entrepreneurial process.

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

2. How can STPs support the Entrepreneurial Process?

According to Timmons a new venture is most likely to succeed, if the three elements of the entrepreneurial process – opportunity, resources and team – are well balanced. An STP is perfectly suited to support the balancing challenge of the entrepreneurial process , why and how?

STPs have the key advantage of hosting both:

- Tech companies with a strong business focus led by entrepreneurs 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 of the venture teams, i.e. the incubatees
- providing incubatees with the access to the STP's know-how, its regional and global network as well as access to funding

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

3. Business Incubation: General Aspects

3.1 Characteristics

At first, let's have a look at the definition of Business Incubation. Contrasting early definitions where survival of incubatees was emphasized, new types of early-stage incubation are better defined with: "...a shared office-space facility that seeks to provide its incubatees with a strategic, value-adding intervention system of monitoring and business assistance." [2]

The key characteristics of business incubation are according to the best practice example @Wales Digital:[3]

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

3.2 Four Different Types of Business Incubators

Basically, there are four different types of incubators regarding the incubator's shareholders and their profit vs. non-profit orientation:

- Local Economic Development Incubators – mostly non-profit
- Academic and Scientific Incubators – mostly non-profit
- Corporate Incubators – both non and for profit
- Private Investors' Incubators – for profit

In this paper we focus on Local Economic Development Incubators within an STP, thus hosting primarily high tech companies. In consequence, the STP and its incubator hold strong links to academia, university institutes and other R&D organizations. Therefore, the incubator's orientation is more strategic on sustainable economic development than on its bottom line.

3.3 STPs Position for Running an Incubator in Partnership with Universities

An STP with its tenant firms, its business environment, its experienced managers, experts and entrepreneurs in different industry sectors is better suited to host a business incubator compared to a university. Why?

A university shall focus on research and education, where practical projects are hopefully integrated. However, most universities lack the entrepreneurial environment, the business experience and the network of potential investors which are all crucial for successful incubation. In short: Space is just the beginning of the incubation story in which the STP with its management, its tenants, its entrepreneurs and its local and global network play a major role.

[2] Hackett, S. M. and Dilts, D.M., 2004b, A Systematic Review of Business Incubation Research. 'Journal of Technology Transfer.' 29: 55-82.
[3] Ewan, Jones M, 2010: How to Create an Award Winning Incubator? Presentation held at SBI Conference, Liverpool; http://www.youtube.com/watch?v=Agj7Lun9vOY

3.4 Basic Revenue Models

Broadly speaking there are 3 revenue models[4] for business incubation environments:

Revenue Model	Key Features
1. Revenue from tenants and other clients: • Rent - is the most common • fees for the business support offered (business incubation fees) and other fees for use of facilities and services • Hot desking fees	Financially self sufficient, given: • "free" buildings • Minimum economies of scale • Often with anchor tenants
2. Revenue from sharing in client success by way of small equity positions or royalty agreements on gross sales and brokerage fees on raising finance.	• Stakeholders with deep and patient pockets • At the leading edge of business incubation environment development and relatively rare. • Needs management sophistication
3. On-going government or donor funding	

Most business incubation environments will combine elements of each. The incubator's strategy is depending on its resources, the team skills and the opportunities (s. the 3 elements of the Entrepreneurial Process) provided by potential incubatees.

3.5 STP's Competitive Advantages for Running an Incubator

As it is very hard for a business incubation environment to achieve adequate margins in commercially rented accommodation, an STP can provide space for incubating and hosting start-up teams at a 'strategic price'. This strategic price is presumably lower than in the commercial real estate business, because there is either unoccupied space available or the STP management calculates 'opportunity costs', i.e. a fraction of lost rent.

Other competitive advantages for STPs to run an incubator as well as value-adding business models will be illustrated in the case study in chapter 5.

[4] iDISC - the infoDev Incubator Support Center, 2006, a service of Secretariat housed in the Global ICT Department (GICT) of the World Bank: Revenue Models for Business Incubators

4. Business Model Innovation: A New Generation and its Major Tool

4.1. The Business Model Generation

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?

If you've answered "yes" to any of these questions, you belong to the group of visionaries, game changers, and challengers striving to design innovative business models for tomorrow's enterprises. This global community with more than 6000 registered members is called the "Business Model Generation"[5].

4.2. The major tool: the Business Model Canvas

The Business Model Generation uses a tool which is a shared language for describing, visualizing, assessing, and changing business models: the Business Model Canvas.

The Business Model Canvas and the concept behind it has been applied and tested around the world and is used by leading business schools, by start-ups as well as by large organizations. The canvas is a handy tool formed by 9 building blocks: Customer segments, value propositions, channels, customer relationships, revenue streams, key resources, key activities, key partnerships, cost structure. These 9 building blocks cover the four main areas of a business: customers, offer, infrastructure, and financial viability.

4.3. Business Model Innovation on two layers

Business Model Innovation (BMI), to be considered as an imperative for STP managers, takes place on two layers:

- BMI on the STP layer

  How to create value for the STP's tenants and stakeholders with business incubation is the title of this paper. The issue of Business Model Innovation on the STP layer will be discussed in the next chapter.

- BMI on the startup (or incubatee) layer

  Business model design and the canvas tool are a major element of a distinct incubation program. Working with the Business Model Canvas and other tools for designing new businesses is the major value driver for incubates, especially for scientists and their academic spin-off teams, in their business development process.

[5] Osterwalder, Alexander and Pigneur, Yves, 2009, Business Model Generation

5. Case Study: CO:FORWARD - Business Incubation

5.1. The environment: a leading STP (TPH) and a leading university (RWTH Aachen University)

The environment of CO:FORWARD - Business Incubation (www.coforward.de) is namely the *TPH Technologie Park Herzogenrath* and the Aachen region. The driving regional economic force is the *RWTH Aachen University* which is one of Europe's leading institutions for science and research.

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 2500 employees.

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. 5 RWTH has a clear engineering focus which was a crucial factor in motivating multinational corporations such as Philips, Microsoft, Ford, and Ericsson to locate their research institutions in the Aachen region.

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 office (TTO) to institutes such as the RWTH Aachen Entrepreneurship Center.

The 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-based start-up teams. The unique environment in the Aachen region and the understanding of the entrepreneurial process are the starting point for CO:FORWARD - Business Incubation.

5.2. CO:FORWARD - 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.[7]

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 all phases, the pre-seed, the seed and the growth phase.

Supporting the entrepreneurial process for future 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 big questions to be raised by following the entrepreneurial process:

- Is the technology an opportunity? What is the best business model?

[6] Aachen Chamber of Commerce, June 2011, Report on: Technology oriented company foundations in the Aachen region

- 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 really the entrepreneur and future CEO?

An incubator with its entrepreneurial ecosystem like CO:FORWARD is the perfect place, along with an advanced incubation program imbedded, to work on and to answer these questions. At the CO:FORWARD - Business Incubation 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.

5.3. Learnings from the 'beta' phase in 2011

The learnings made through the ½-year 'beta' phase of the incubator, previously named "BizKubator" and presented at IASP World Conference in Copenhagen, derived from incubating 6 start-up teams, were as follows:

- The name "BizKubator" transports too much the picture of an incubator space, and not the community and network. => new launch as CO:FORWARD - Business Incubation
- The offering of hot-desking is attractive to later-stage teams, still not a valuable service to teams which prefer to stay at the institute for a while due to its technical infrastructure. => Additional offering of a 'flex' membership, somewhat a virtual incubation concept
- The start-up teams in the 'beta' phase mostly pursued web business models. We didn't reach the scientists with classical technology innovations. => More emphasis on the partnership with the technical institutes and the TTO, s. chapter 5.7.

5.4. The mission of CO:FORWARD - Business Incubation

The mission of the CO:FORWARD is to enable entrepreneurial teams to build innovative technology-based start-ups and to accelerate growth and value creation.

CO:FORWARD is a business incubator and more, a community of young and experienced entrepreneurs, in the opportunity-rich ecosystem of an STP.

5.5. CO:FORWARD - A value innovation for three target customer segments

The term "value innovation" has been derived from the strategic management bestseller 'Blue Ocean Strategy'[8]. 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 CO:FORWARD concept is three-sided. By providing incubation space amidst leading tech companies, we are addressing three target customer segments, each with a distinct value proposition:

- The entrepreneurial teams and talents, i.e. incubatees, will benefit from the industrial business environment with senior entrepreneurs, executives and investors with their expertise, network and funding.
- The 2nd customer segment, the entrepreneurs (senior/serial entrepreneurs or in residence with proven entrepreneurial achievements) within the STP and the local area, will 'do good' and benefit through personal enrichment by mentoring young talents. Moreover, they will gain an unparalleled access to opportunities in case they are also potential investors.
- Investors in general (VCs, Angels, corporations) are the 3rd customer segment. They will, like the potentially investing mentors, fill the deal flow pipeline and gain access to new technologies and innovations from partner universities, research institutes and large tech companies (spin-outs).

Common business incubators are mostly located inside university campus with little linkage to the business world. Therefore, the STP-based CO:FORWARD incubator is a "blue ocean" representing "untapped market space".

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

5.6. CO:FORWARD - Creating value for entrepreneurial start-ups and a new business model for STPs

Following the introduction in chapter 4.2. we use the Business Model Canvas as shown in Figure 2 to illustrate CO:FORWARD's innovative business model.

Figure 2: The Canvas illustrating the Business Model of CO:FORWARD - Business Incubation[9]

The three different colors represent the three Customer Segments (CS) and its attributed Value Proposition (VP) as well Revenue Streams (RS) and other elements of the business model:

- Blue post-its:
  CS - Entrepreneurial Teams
  VP – Cool Space & Infrastructure, Pre-market Shelter, Seed Money
  RS – Member Fees (affordable, deferred payments)
- Yellow post-its:
  CS - Senior Mentors/Entrepreneurs
  VP - 'Doing Good', personal enrichment by mentoring young talents, access to opportunities and talents
  RS - Member Fees (double the price to start-up teams)
- Red post-its:
  CS - Investors in general (VCs, Angels, corporations)
  VP – Deal Flow, 'investor-ready' start-ups

[9] Illustration created with the Business Model Toolbox, an iPad app, 2011

RS – Finders Fees (shares are common for web incubators, but risky and not recommended for classic tech incubators)

The Customer Segment - Value Proposition - Revenue Stream combinations are extremely important in the business model design and optimization. The visualization using the Canvas with post-its in different colours helps to quickly understand complex, multi-sided business models.

5.7. CO:FORWARD's key partners at the university

Besides the Customer Segment - Value Proposition - Revenue Stream combinations one element of the CO:FORWARD business model is of high importance: the partnership with university(ies).

Here, we will describe the partnership with RWTH Aachen university by addressing the main players within the university – again – as Customer Segments . Following a new Business Model Design methodology we will outline the Value Proposition by gain creators, pain relievers and a bundle of products and services.

Main Players at University	**Value Proposition** **gain creators, pain relievers, products / services**
1. **Institutes - technical** at RWTH some are very powerful, with high spin-off potential, professors focus on education and research, - spin-offs and entrepreneurship are not top-priority	• High dependency on public R&D funding • Few incentives for IP licensing • Not experienced with spin-off business creation • No entrepreneurial mindset • STP as connector for large multinational projects • 'One-stop-shop' incubation package, using the direct, personal channel
2. **TTO** at RWTH strong in IP consulting, good reach to IP intensive institutes few resources, neither personnel nor funding	• Value-added to the TOO through a 'One-stop-shop': higher visibility and more project leads • No personnel needed for typical incubation services, while TTO focus on IP and contract law to the benefit of the university
3. **Entrepreneurship Center/Institute** Not efficient in reaching engineers or technical institutes - low acceptance	• Value-adding through entrepreneurship seminars and trainings • Much stronger position within the university by partnering with TTO and the STP-based incubator

In the partnership between RWTH and TPH, we work as a 'troika' with two partners from RWTH, the entrepreneurship center and the TTO, and CO:FORWARD, the STP-based incubator. The troika adds their specific key competences to one package to the main customer segment. The entrepreurial teams at the universities' technical institutes.

The factors described in the CO:FORWARD case for a valuable partnership with RWTH Aachen university shall apply to other larger technical universities worldwide.