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**Working Paper**

## What difference a 'pre' makes: University business preincubators in Germany. A national survey

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**What difference a „pre“ makes: University business pre-  
incubators in Germany. A national survey.**

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## Abstract

Business incubation as an instrument of fostering new venture formation is widely discussed in the research field of entrepreneurship. Numerous aspects of Business Incubators (BIs) have already been investigated in more depth: e.g. the organizational structure, funding, objectives, provided services, incubatee selection policy, impacts on the survival and growth of incubatee firms etc. So far, researchers focused their work on public-sponsored, private-sponsored, and nonprofit-sponsored BIs as well as on university-related BIs. In the case of University Business Incubators (UBIs) research basically circulated around the question of how UBIs can support technology transfer. This paper focuses on a new type of UBI: the University Business Pre-Incubator (UPI). UPIs are facilities that support embryonic businesses during their planning stage by providing office space, consultancy and training, and mentoring services.

In the scope of a comprehensive support program of the German government called “EXIST – Existenzgründungen aus der Wissenschaft” that started in 1998, a couple of German universities established pre-incubators to assist the development of new enterprises. So despite the lack of research literature concerning business-related pre-incubators, in practice, these institutions play an important role for German universities in fostering new ventures.

This paper tries to make a substantial contribution to reduce the knowledge gap in the research area of UPIs. After defining the facility “University Business Pre-Incubator” based on metaphorical considerations and the business incubation literature, the paper presents results from a national survey of UPIs in Germany. On the one hand these results show that UPI’s organization differs in many aspects: size, age, planned time horizon, and total financial volume. On the other hand similarities could be identified, such as: UPIs offer consultancy, training, mentoring and coaching services, set requirements for accessing the UPI program, have common target groups, and are integrated in external as well as internal networks.

In addition, a case study of the UPI “Gruendungslabor” is presented before motivating possible fields for future research.

## 1 Introduction

Business incubation as an instrument of fostering new venture formation is widely discussed in the research field of entrepreneurship. Numerous aspects of Business Incubators (BIs) have already been investigated in more depth: e.g. the organizational structure, funding, objectives, provided services, incubatee selection policy, impacts on the survival and growth of incubatee firms etc. So far, researchers have been focusing their work on public-sponsored, private-sponsored, and nonprofit-sponsored BIs as well as on university-related BIs. In the case of University Business Incubators (UBIs) research basically circulated around the question of how UBIs can support technology transfer. This paper focuses on a new type of UBI: the University Business Pre-Incubator (UPI).

So far, only a limited amount of research papers has been published on business-related pre-incubators. Only three international papers were identified by the author. Kirby (2004) describes a pre-incubator as a facility for embryonic or early stage businesses that still have to formulate their business plans, develop a prototype, establish an entrepreneurial team and lead the embryonic business to an investment and/or market ready stage. This definition corresponds to the one of Hannon (2004) and Wirsing et al. (2002). In summary, one can say that supporting embryonic businesses during their planning stage is the key characteristic of a business-related pre-incubator.

In the scope of a comprehensive support program of the German government called “EXIST – Existenzgründungen aus der Wissenschaft” that started in 1998, a couple of German universities established pre-incubators to assist the development of new enterprises. So despite the lack of research literature concerning business-related pre-incubators, in practice, these institutions play an important role for German universities in fostering new ventures.

Chapter 2 deals with the definition of the term University Business Pre-Incubator by presenting metaphorical considerations and the differentiation of Business Incubators and Business Pre-Incubators. Chapter 3 gives an overview about the research design of the survey including the framework of the standardized questionnaire. Chapter 4 presents the key results of this research work. In chapter 5, the “Gründungslabor” - an UPI of the University of Lueneburg - will be introduced as a practical example. The last chapter reviews the most important outcomes and gives an outlook for possible future research.

## 2 Definitions

### 2.1 Metaphorical considerations

The term “incubation” is well known in the context of medical attendance of premature infants. In this context, incubators establish a protective and artificial environment where newly born infants are nurtured with essential ingredients for life to help them survive and grow under prescribed and controlled conditions through expert care (Hannon 2004, Aernoudt 2004, Smilor/Gill 1986). Furthermore, incubation has a meaning in horticulture “[...] where there are attempts to enhance the natural processes of plant reproduction through providing seeds or new cuttings with a controlled environment within which the appropriate nutrients and atmosphere can be provided to simulate idealised conditions for effective and speedy growth” (Hannon 2004). In summary, these metaphorical considerations induce three key elements of incubators:

- Nutrients (“nutrients/essential ingredients for life”)
- Protection (“protective and artificial environment”)
- Control (“Controlled environment/to be monitored through expert care”)

The aim of incubation is to assure the survival and to assist in the growth of newly born and weak life-forms. To comply with this target, the incubator provides protection by offering nutrients and care. With premature infants, nutrients can be oxygen, warmth, medical care etc. So in order to protect the newly born infant it has to be nurtured. Furthermore, the incubation process has to be monitored by experts which are able to decide on the adequate amount of nutrients, to interfere in case of emergencies, and to decide on the time period of incubation.

### 2.2 Business Incubators

In an economic context, definitions of the term “Business Incubator” (BI) vary in detail, but agree on basic characteristics. BIs are facilities that provide rental space, shared basic business services and equipment, business assistance, coaching and financial support to start-ups and young firms in order to accelerate their successful development (NBIA 2007, Allen/Rahman 1985, Campbell et al. 1985, Plosila/Allen 1985, Smilor/Gill 1986, Brooks 1986, Fry 1987, Merrifield 1987, Kuratko/LaFollette 1987, Campbell 1989, Allen/McCluskey 1990, Lalkaka 2003, Zedtwitz 2003, Aernoudt 2004, Hackett/Dilts 2004, Grimaldi/Grandi 2005).

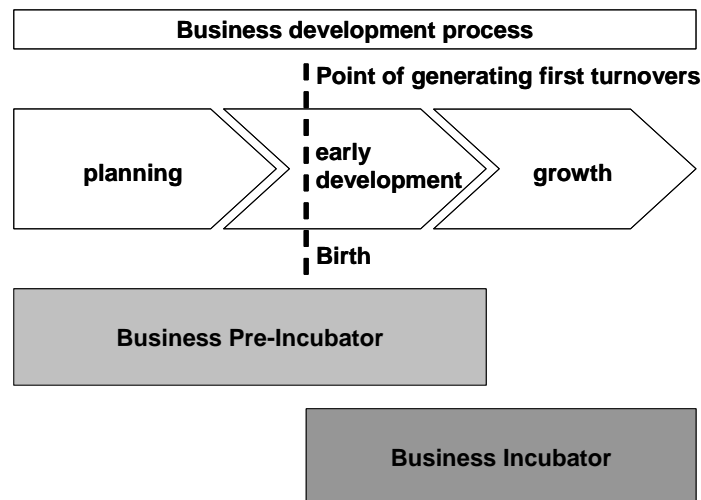
It is obvious that – like a medical incubator – the performance of a BI goes beyond its physical accommodation. Subsidies for rental office space and shared accommodations like conference rooms are certainly of value to the young firms. But in addition to its physical infrastructure, a BI also has to provide nutrients like business consultancy, coaching, mentoring and general business know-how (management, legal, marketing, finance etc.). These nutrients are controlled by the management team of the BI through consultation and coaching of its entrepreneurs, interference in emergent situations, and decision making on how long the start-up companies can/should stay in the BI. The following table shows the key elements of incubators and BIs.

**Table 1 Key Elements of Incubators and Business Incubators**

|                     |            | <b>Incubator (med.)</b>  | <b>Business Incubator</b>   |
|---------------------|------------|--|---|
| <b>Key elements</b> | Nutrients  | Oxygen, warmth, medicine etc.  | Consultancy, coaching, mentoring, access to networks, business/management skills etc.   |
|                     | Protection | Physical space   | Office space and financial support: e.g. subsidised rental space, access to seed capital and grants   |
|                     | Control    | Through doctor (expert) <ul style="list-style-type: none"> <li>• To check on nutrients: which/when/how much?</li> <li>• To interfere in emergency</li> <li>• To decide on time period of incubation</li> </ul> | Through BI management (expert) <ul style="list-style-type: none"> <li>• To check on nutrients: which/when/how much?</li> <li>• To interfere in emergency</li> <li>• To decide on time period of incubation</li> </ul> |

### 2.3 Business Pre-Incubators

The main difference between BI and Business Pre-Incubators (BPIs) is defined through the development stage of the incubatee's businesses. A BI provides its services to already founded start-up companies (after birth) in their early stage of development, while a BPI is a facility that supports embryonic businesses (before birth) during their planning stage (Kirby 2004, Hannon 2004, Wirsing et al 2002). Naturally, the transition between both phases can be fluent. Most of the time a BPI will continue supporting its users for some months subsequent to their companies' birth. Therefore it seems crucial to define "the birth of a company". In the context of BI and BPI, birth should be defined as the point of generating first turnovers.



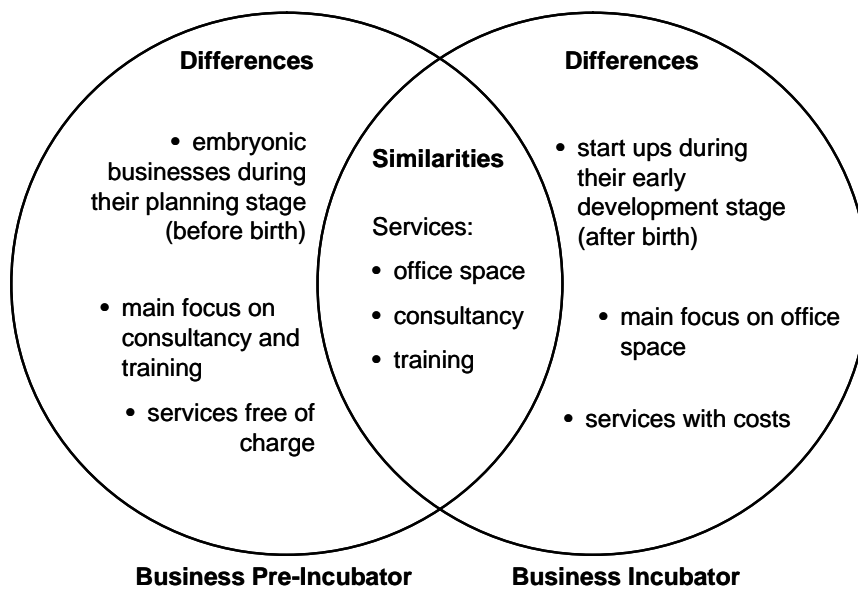
**Figure 1 Entrepreneurial process-orientated classification of BIs and BPIs**

Hence, an embryonic business is a mere business idea which still needs to be developed into an operating business. While working in a BPI, users should prove their concepts, formulate a business plan, develop a prototype, build the entrepreneurial team, and bring the embryonic business to a stage where it is ready to enter the market (Kirby 2004, Lendner 2004). This is where the intention of a BPI differs from the BI's. BPIs want to breach the gap between the occurrence of a business idea and the establishment of a company. They rather intend to effect entrepreneurial activity of nascent entrepreneurs while BIs aim at survival and growth of their entrepreneurial companies.

Another difference between BIs and BPIs is that BIs are charging money for various services like rent for office space, BPIs on the other hand are in general free of charge. This accounts for the fact that embryonic businesses do not generate any incomes yet. As widely known from the entrepreneurship research literature, one of the most important barriers for people to start a new business is the lack of financial capital. Therefore a BPI should offer its users protection through the possibility of reducing their fix costs (e.g. by offering rent-free space), and provide access to seed capital.

Besides the protection, it is even more important to the users of a BPI to receive nutrients like consultancy, coaching, mentoring and training management skills. Assuming that embryonic businesses are more vulnerable than start-ups – due to their business development stage – care intensity should be of even higher priority for BPIs than for BIs. Especially users lacking prior business expertise need education in accounting, marketing, human resource, finance, and other business-related topics in order to help them develop their own businesses. Besides these economical basics, pre-incubatees should be trained in general management skills like leadership, time management, presentation techniques etc. Of course, further individualized coaching and mentoring will be needed for driving their business plans forward – depending on the respective business field.

In summary, BIs and BPIs resemble in terms of their services provided, but differ with regard to their target phase. As BPIs attend embryonic businesses in their planning stage, they focus on consultancy and training and offer their services free of charge (see figure 2).



**Figure 2 Differences and Similarities of BIs and BPIs.**

## 2.4 University Business Pre-Incubators

As palpable in Germany, BPIs are often connected to a university or a BI. One possible reason for this link might stem from the fact that BPIs generally offer their services free of charge, and have no possibility to generate revenues. Therefore they should be part of a profitable BI or related to a university or research institution in order to receive financial backup. So whenever a BPI is connected to a university – in the way that university’s personnel and/or accommodation is being used – we talk about a University Business Pre-Incubator (UPI).

## 3 Research Design

The national survey was realized in 2005. Following an explorative research strategy, the author started with a pre-test in order to generate a framework for a standardized questionnaire. On the basis of an internet research that analyzed all 296 German public and private universities, 43 possible UPIs were identified and contacted. All UPIs matched the criteria of UPIs which were discussed above: (1) They have to offer nutrients (consultancy and coaching services), protection (office space and financial support), and expert control (through UPI’s management team). (2) They have to accompany embryonic businesses through their planning stage. (3) They don’t charge any rent for office space. (4) They are linked to a university.

Research data was collected through the standardized questionnaire from 17 UPIs completed by the person responsible for day-to-day UPI operations, usually the UPI managing director. The following table provides an overview of the framework and the main questions of the questionnaire handed out to the UPI managers.



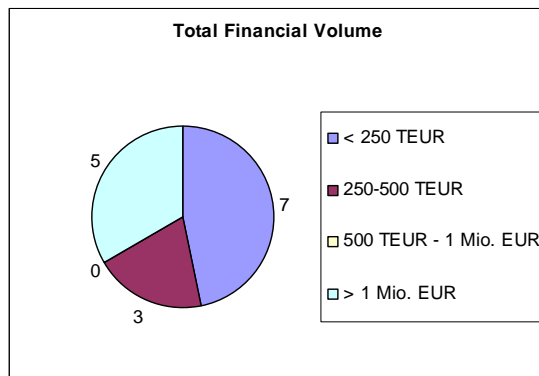
**Table 2 Design of the Questionnaire**

| <b>Framework</b>             | <b>Questions</b>  |
|------------------------------|---|
| UPI organization             | <ul style="list-style-type: none"> <li>• Year of foundation</li> <li>• Planned time horizon</li> <li>• Legal form</li> <li>• Personnel structure</li> <li>• Funding</li> </ul>                            |
| UPI services                 | <ul style="list-style-type: none"> <li>• Workstations</li> <li>• Secretary services</li> <li>• Consultancy</li> <li>• Trainings, workshops</li> <li>• Financial support for the pre-incubatees</li> </ul> |
| Target group of the UPI      | <ul style="list-style-type: none"> <li>• Job status of the pre-incubatees</li> <li>• Business sector</li> <li>• Course of studies</li> </ul>  |
| UPI's Marketing              | <ul style="list-style-type: none"> <li>• Marketing effort</li> <li>• Types of Marketing events used</li> </ul>  |
| UPI's limitation of use      | <ul style="list-style-type: none"> <li>• Requirements for access</li> <li>• Time restrictions</li> </ul>  |
| External networks of the UPI | <ul style="list-style-type: none"> <li>• Cooperation with local institutions</li> <li>• Consultancy services</li> </ul>   |
| Internal networks of the UPI | <ul style="list-style-type: none"> <li>• Integration of the UPI into the academic course plan</li> <li>• Perceived degree of UPI integration within the university</li> </ul>                             |
| Monitoring of the UPI        | <ul style="list-style-type: none"> <li>• Types of research monitoring</li> </ul>  |
| Evaluation of the UPI        | <ul style="list-style-type: none"> <li>• Used capacities of the UPI</li> <li>• Review of the pre-incubatees</li> <li>• Number of spin-offs</li> </ul>   |

## 4 Key Results

### *UPI Organization*

The results show that German UPIs in general vary greatly with respect to their basic organization. Therefore it is much easier to identify differences than similarities. The first differentiator is the year of its foundation. Some UPIs look back on a decade of running business, while others were just established in 2005. Nevertheless, the results regarding UPI's year of foundation imply that UPIs are an emerging phenomenon in Germany. 14 UPIs out of 17 were founded in 2000 and the subsequent years. Another differentiator of the UPIs is their planned time horizon. While there are nine programs with unlimited planned time horizons, seven UPI programs are terminable for at least one year (max. 9 years). A third differentiator among the UPI organizations, is their financial situation. The total financial volume of set up and operation costs per UPI programs is divided as followed (see figure 3): It seems to be common to initialize UPIs either with small (< 250 TEUR) or high financial volumes (< 1 Mio. EUR).



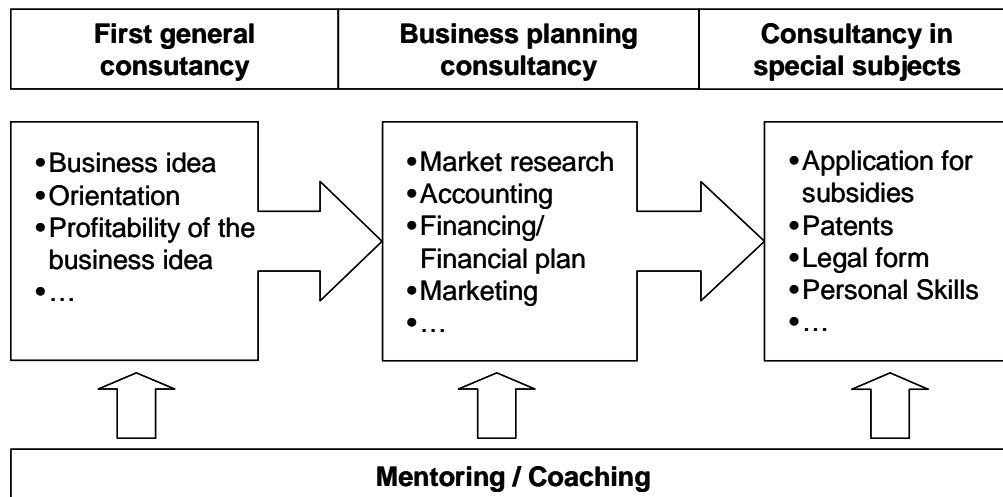
**Figure 3 Total financial Volume of UPIs**

Besides these and more organizational differences, the data reflects one important similarity. German UPIs are more often founded as non-profit university projects than as for-profit companies. Only four were founded as private limited companies. These were university-related BIs with an integrated BPI that used their affiliated BIs for financial resources. The non-profit UPIs were financed by the university, third-party funds and government grants.

#### *UPI Services*

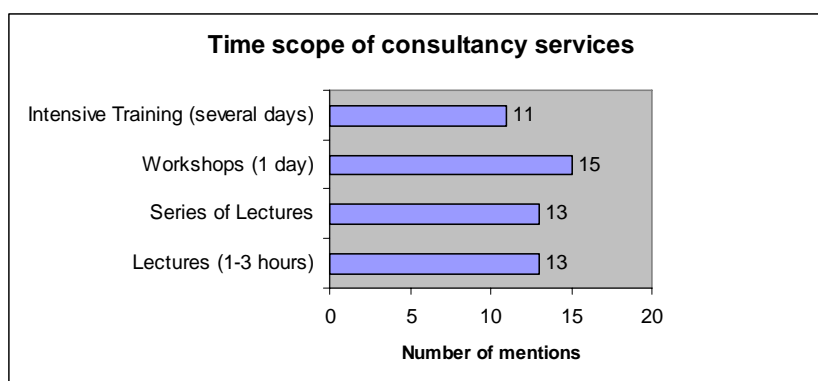
It is common for UPIs to offer open-plan offices with approximately 2–6 workstations and/or offices that are only occupied by one pre-incubatee (-team) each. Office space is generally equipped with techniques of telecommunication and some UPIs provide library service. None of the screened UPIs charge money for its physical infrastructure. There are even 11 UPIs that provide financial support to their users, for example in forms of contributions to consultancy fees to scholarships for the daily lives of the pre-incubatees for a limited time period (up to 18 months).

As expected, UPIs attach great importance to consultancy. All UPIs make first general consultancy and consultation on business planning available. An intensive coaching and mentoring support is offered by 15 UPIs. Furthermore, 12 UPIs provide their users with assistance in special subjects like patent rights, legal form of companies or application for subsidies. To illustrate the important role of consultancy, figure 4 contains a schematic overview of the consultancy process within the UPIs. According to this, the consultancy services can be distinguished into general, business planning, and special subject consultancy. All consultancy services are realized either through UPI's management or external experts. During all three consultancy phases, pre-incubatees are supported and coached by their mentors. These mentors are generally professors of the university that the UPI is related to.



**Figure 4** UPIs process of consultancy

The intensity of consultancy and training depends on the time scope of presentation (see figure 5). The common time scope is a one-day workshop followed by lectures (one to three hours) and series of lectures. Eleven UPIs even offer intensive training workshops lasting several days.



**Figure 5** Time scope of consultancy services

#### *UPI's limitation of use*

As a rule, UPIs ask for a draft business plan as a requirement for accessing the UPI program. Moreover, there are a few UPIs (five) that only accept users which are already supported by a mentor. Again, this mentor is generally a professor of the related university.

Most UPIs set limits that state how long the pre-incubatees can use the UPI for their business building purposes. This limit ranges between six to 18 months. Five UPIs don't have a pre-defined time horizon for their pre-incubator services.

#### *Target group of the UPI*

The main target group for the UPIs is obviously students – mainly of business and engineering related faculties. But also university graduates as well as PhD students count as important target groups for UPIs. Three UPIs even accept non-academic users.

The majority of the UPIs (ten) accept non-technology based business ideas.

### *External and internal networks of the UPI*

All UPIs are integrated in various external networks. They maintain business relationships to institutions like BIs, science parks, bureaus for regional economic development, banks as well as regional chambers of commerce.

In order to investigate the internal networks of the UPIs, the questionnaire asked them if the UPIs are integrated in the university's curricula. Eleven UPIs were involved in curricula by providing accommodations and/or case studies.

### *Monitoring and evaluation of the UPI*

It is most interesting to discover that most UPIs are not being accompanied on a research basis. Only four UPIs state that they are subject of master thesis written by students and solely one UPI is being monitored by a dissertation of a PhD student.

Furthermore, the evaluation of the programs reveals that financial support, office space and consultancy services are usually working to maximum capacity. Only the demand of lectures and workshops that are offered for training in management and personal skills can be increased in most of the UPIs.

To evaluate their own UPI programs, most of the UPI's management teams review the progress of their pre-incubatees. Although the depth of evaluation varies from UPI to UPI, twelve UPIs keep track of how many spin-offs entered the open markets since their UPI was founded. The results can be seen in table 3. Obviously the number of spin-offs correlates positively with the age of the UPIs.

Table 3 Number of spin-offs

|                       |      |      |      |      |      |      |      |      |      |      |
|-----------------------|------|------|------|------|------|------|------|------|------|------|
| Number of spin-offs   | 161  | 50   | 43   | 42   | 41   | 20   | 15   | 12   | 2    | 1    |
| Number of mentions    | 1    | 1    | 1    | 1    | 1    | 2    | 2    | 1    | 1    | 1    |
| Founding year of UPIs | 1995 | 1997 | 2000 | 2002 | 2002 | 2002 | 2001 | 2004 | 2004 | 2004 |

## **5 “Gruendungslabor” – The UPI of the University of Lueneburg**

The UPI “Gruendungslabor” – literally translated into “entrepreneur lab” – is operating at the University of Lueneburg since 2004. It is financed by the European Social Fund and the University of Lueneburg. The total financial volume of the project amounts to approximately 400,000 Euro. It is run by one UPI manager (part-time work 80%) and two student assistants (each 8 hours/week) – all employed by the University of Lueneburg. The “Gruendungslabor” is located in a business incubator 500 meters away from the campus. Its open-plan office is located in the basement of the BI (approx. 20 sqm) and includes six working stations (each equipped with a computer, printer, telephone, fax, scanner and internet access). The use of these working stations is free of charge for students, graduates and employees of the University of Lueneburg as long as they are being used for developing their business ideas. The “Gruendungslabor” services are complemented by consultancy services run by the UPI manager plus a variety of training workshops. Subjects for discussion within these workshops are e.g. ways on how to develop entrepreneurial personality, entrepreneurial marketing, accounting, entrepreneurial funding etc. They are run by the UPI manager, the department of technology transfer of the University of Lueneburg, the local chamber of commerce and industry or by business accountants and free-lance consultants.

Experience in Lueneburg indicates that the consultancy services as well as the offered workshops are widely accepted by the pre-incubatees. Many students with business ideas, no

matter what stage of the business planning process they are into, use the free of charge consultancy services. Same holds true for the highly frequented workshops, no matter if they refer to entrepreneurial specific or more general business subjects.

This picture differs when it comes to the offered workstations. They are only marginally used by the pre-incubatees. Most of the interested students merely take advantage of the working stations for temporary internet research.

To date, no official investigations were carried out concerning the reasons for using the UPI “Gruendungslabor”. But referring to first on-hand experiences, two assumptions can be formulated.

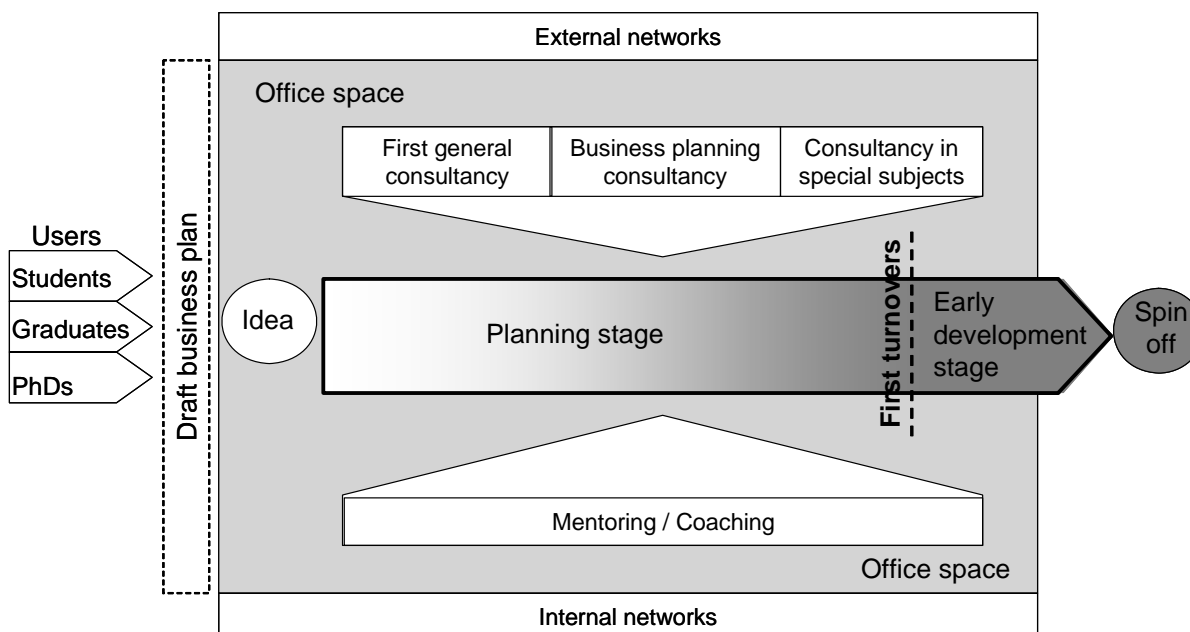
The first assumption refers to the location of the “Gruendungslabor”. As mentioned above, the lab is located in a BI near by the university, but not directly on the campus. This was due to the lack of available space on the campus and the BI was willing to place the office at the university’s disposal for free. Although 500 meters are by no means a long distance, students are used to the short distances on the campus and not really willing to accept a loop way. Moreover, its “hidden” location cannot generate any walk-by customers. And last but not least, a basement office is obviously not perceived as attractive to work in.

Secondly, one can assume that most students are technically well equipped these days. Computer, telephone, printer etc. belong to a common household these days in Germany. Furthermore, a large number of students disposes of an internet flat rate at home which renders the workstation offers of the “Gruendungslabor” uninteresting. Unless the UPI comes up with additional benefit to the fully equipped home-offices of the pre-incubatees, it becomes more attractive to work at home than in the UPI which hinders the networking aspect within the “Gruendungslabor”. Possible additional benefit offered by UPIs could be financial support (e.g. scholarships), open hour support and consultant services by the UPI manager as well as internal organized networking sessions with other entrepreneurial teams in order to share best practices and other working experiences.

The “Gruendungslabor” provides neither financial support to its users nor a constant presence of the UPI manager. The UPI manager has his office on the campus and is only available in the UPI once a week. Due to the marginal demand for office space – most of the time only one team is working in the “Gruendungslabor” – an exchange of experiences is hard to realize. Right now the University of Lueneburg is working on improving the “Gruendungslabor” based on the experiences formulated above, in order to give an even better support and to advance development of embryonic businesses in the future.

## 6 Conclusion

This paper tries to make a substantial contribution to reduce the knowledge gap in the research area of UPIs. After defining the facility “University Business Pre-Incubator” based on metaphorical considerations and the business incubation literature, the paper presents results from a national survey of UPIs in Germany as well a case study of the UPI “Gruendungslabor”. On the one hand these results show that UPI’s organization differs in many aspects: size, age, planned time horizon, and total financial volume. Allen and McCluskey once declared: “No two business incubators are alike” (Allen/McCluskey 1990). Obviously this quotation also applies to German UPIs. On the other hand similarities were identified: UPIs offer consultancy, training, mentoring and coaching services, ask for requirements for accessing the UPI program, have common target groups, and are integrated in external as well as internal networks. Starting from these identified similarities it is possible to create a model of pre-incubation in UPIs (figure 6).



**Figure 6 Integrated model of pre-incubation in UPIs**

Figure 6 shows the dynamic process of business development in a UPI. Users verbalize their embryonic business ideas, pass through the UPI using its multifarious services (office space, training, consultancy, mentoring, coaching) and leave the UPI as a newly born start-up company. Furthermore, it is common that the embryonic businesses generate first turnovers already within this process. The students, graduates or PhDs have to produce a draft business plan to be accepted as users. During their time in the UPI they profit from the physical infrastructure which includes a large variety of technical support services. Additionally, UPIs are embedded in internal and external networks which they use to integrate consultancy knowledge of the cooperating institutions in their support program for their users.

Although UPIs already play an important role in entrepreneurial practice, only minor research has contributed to illuminate this phenomena. Future research should include investigations on UPI's impact on their users, user's perception and the development of start-up companies after they left the UPI program.

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